

WEST COAST OF SCOTLAND PILOT

COMPRISING THE
WEST COAST OF SCOTLAND FROM THE
MULL OF GALLOWAY TO CAPE WRATH
INCLUDING THE
INNER AND OUTER HEBRIDES

TENTH EDITION
1958

RECORDED

*Notations of Supplements and
Annual Summaries of Notices to Mariners
relating to this book*

TO BE FILLED IN BY NAVIGATING OFFICER
(In Chart Depots the first two columns only are to be filled up.)

Title	Date of publication and number	Date of insertion of note in margins of book
Notices to Mariners	1st January (Annual) Nos. 1-20	<i>see following page</i>

Important

Attention is called to Admiralty Notices to Mariners Nos. 1-20 of the current year which contain the following information:—

- No. 1 Caution when approaching British and Commonwealth Ports.
 - Part I Closing of Ports; Stopping of movement in Ports.
 - Part II Examination Service.
 - Part III Other Regulations in force.
- No. 2 Notice to all Mariners, Shipowners and others concerned.—Agents for sale of charts and hydrographic publications.
- No. 3 Official Radio Messages to British Merchant Ships.—“The G.B.M.S. Organisation.”
- No. 3A Official Messages to British Merchant Ships (Small Craft and Fishing Vessels).
- No. 3B Official Radio Messages to Merchant Ships. The Mercast System.
- No. 4 Aircraft Communications—Signals.
- No. 5 Firing Practice and Exercise Areas.
- No. 6 International Code of Signals, 1931. Amendment.
- No. 7 Caution with regard to ships approaching Squadrons or Aircraft Carriers, etc.
- No. 8 Information concerning Submarines.
- No. 9 British Isles.—Warnings broadcast by Coast Radio Stations.
- No. 10 Minesweeping Operations.
- No. 11 British Isles.—List of Storm Signal Stations.
- No. 12 Submarine Cables.
- No. 13 Radio Navigational Warnings.
- No. 14 Availability at Commercial Ports of Notices to Mariners and Neomedri Route-Books.
- No. 15 Laws and Regulations Appertaining to Navigation.
- No. 16 Admiralty Tide Tables. Addenda and Corrigenda.
- No. 17 Reports of Shoals obtained by Echo sounding.
- No. 18 Areas Dangerous due to Mines: Swept Routes.
- No. 19 The International Hydrographic Bureau.
- No. 20 British Merchant Ships—Use of Radar in time of Emergency or War.

Copies of these Notices can be obtained gratis by Masters of Ships from Mercantile Marine Offices in the United Kingdom. Copies may also be inspected at Dominion, Indian and Colonial Government Shipping Offices and at British Consulates.

Caution 1

This volume should not be used without reference to the latest Supplement and Annual Summary of Notices to Mariners affecting it which may have been published.

A supplement to this volume will generally be published annually until the latter is again taken up for revision.

After the publication of Supplement No. 1, each succeeding supplement cancels the former.

Between the time of the volume being taken up for revision and the publication of the new edition no supplement will be issued, but early in each year a Summary of the Admiralty Notices to Mariners affecting the volume, which have been published during the preceding year, will be issued as a separate publication.

The publication of all Supplements and Summaries of Notices to Mariners is announced in Admiralty Notices to Mariners.

The latest Supplement and any Annual Summary of Notices to Mariners that has been published affecting this volume will be obtainable gratuitously by purchasers of this volume from the Agents for the sale of Admiralty charts and other Hydrographic publications, on application either personally or by letter; in the latter case the cost of postage must be enclosed. For a list of these Agents see Admiralty Notice to Mariners No. 2, published annually.

Information of a temporary nature is not included in this volume, nor in the Supplements thereto.

Caution 2

Details of Lights, Fog Signals, and Time Signals (visual) are not included in this volume; for this information the Admiralty List of Lights, Volume 1, should be consulted.

Information regarding Vertical Movement of the Water is not included; for this the Admiralty Tide Tables should be consulted.

Details of Radio information (weather bulletins, storm and navigational warnings, time signals, radiobeacons, and D.F. stations) are not included; for this information the Admiralty List of Radio Signals should be consulted.

Caution 3

In this work the bearings are referred to the true compass, and when given in degrees are reckoned clockwise, from 000° (North) to 359° .

The bearings of lights are given from seaward.

The latitudes and longitudes given in the text are approximate.

The distances are expressed in sea-miles of 60 to a degree of latitude.

A cable's length is assumed to be equal to the tenth part of a sea-mile. It is often accepted as being one tenth of a nautical mile.

The depths are given below the level of chart datum where not otherwise stated.

Heights on the land are given above the level of mean high water spring tides.

Figures in brackets given after those denoting feet, fathoms and yards, are their equivalents in metres.

Time is expressed in the four-figure notation commencing at midnight.

The term "power vessel" used herein includes any vessel propelled by machinery.

A name in brackets, immediately following another name, is the obsolete name which is still shown on the Admiralty Charts. As a general rule, the bracketed name is only inserted in the description of the place or object previously bearing that name.

When shading is used to indicate colours of flags, tidal light signals, or beacons, it is as follows:



Yellow.



Red.



Blue.



Green.



Black.



S. D. No. 66

WEST COAST OF SCOTLAND PILOT

Comprising the
West Coast of Scotland from the
Mull of Galloway to Cape Wrath
including the
Inner and Outer Hebrides

TENTH EDITION, 1958

London

Published by the Hydrographic Department under the
Authority of the Lords Commissioners of the Admiralty
1958

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To be obtained from the
Agents for the Sale of Admiralty Charts

Price £1 15s. 0d. [£1.75] net

Advertisement to the Tenth Edition

The West Coast of Scotland Pilot contains a description of the stern coasts of Scotland from the Mull of Galloway to Cape Wrath, including the Inner and Outer Hebrides.

This, the tenth edition, has been prepared by Captain F. M. Hodgson, N., and contains the latest information received in the Hydrographic Department.

The meteorological and ocean currents information has been revised by the Meteorological Office of the Air Ministry. Temperature is expressed in degrees Fahrenheit, rainfall in inches, speed in knots and distance in sea miles unless expressly stated otherwise. Information received from meteorological services which do not use these units has been converted into the units mentioned above by the Meteorological Office.

The information on radar ranges, tabulated in Appendix IV, has been prepared and supplied by the Shipowners' Radio Advisory Service.

Mariners and others are invited, in the interests of navigation to forward to the Hydrographer of the Navy, Admiralty, Ongate Lane, Cicklewood, London, N.W.2, any information that may come under their notice, which would be useful for the correction of the charts and other hydrographic publications issued by the British Admiralty; early advice as to newly-discovered dangers, the establishment of, or changes in, any aids to navigation is specially requested.

Copies of a form (H. 102) on which to render information can be obtained gratis from the Hydrographer of the Navy, Admiralty, Hydrographic Supplies Establishment, Creechbarrow House, Taunton, Somerset; or from any of the Admiralty Chart Agents in Great Britain and abroad, a list of whom is published, annually, in Admiralty Notice to Mariner No. 2.

By the publication of this volume, the ninth edition of the West Coast of Scotland Pilot, 1949, and Supplement No. 4, 1957, are cancelled, all information affecting that work contained in Notices to Mariners, up to and including No. 2447 of 1958, has been embodied in this volume.

For Temporary and Preliminary Notices to Mariners affecting this edition, the list of Temporary and Preliminary Notices to Mariners in force, published monthly in the weekly edition of the Admiralty Notices to Mariners, should be consulted.

K. ST. B. COLLINS,
Rear-Admiral,
Hydrographer of the Navy.

Hydrographic Department,

Admiralty, London.

24th October, 1958.

Bibliography

The following publications, other than British Government publications, have been consulted during the compilation of this volume:—

Statesman's Year Book 1957.
Ports of the World, 1957.

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Glossary

GAELIC WORDS IN WEST COAST OF SCOTLAND PILOT

Gaelic	English	Gaelic	English
A'	The.	Gleann	Glen.
Abhuinn }	River.	Gob	Bill or beak of bird.
Aven			
Aird }	High point.	Gorm	Blue.
Ard		Holm	Islet.
Airigh	A Shealing.	Iar	West.
Allt	Stream or Brook.	Innis or Inch	Choice pasture island.
Am	The.	Klet	Rugged eminence.
An	Tbe.	Knowe	Hill.
An t	The.	Kyle, Kyles	Narrow passage or strait.
Bad	Grove.	Lag	A hollow.
Bagh	Bay.	Leac, Lekh	Slate or slab.
Baile	Farm, town.	Lia, Liath.	Grey or blue.
Ban, Bhan	White.	Linne, Linnhe	Gulf or lake.
Barr	Summit.	Loch	Lake.
Bealach	A pass or a gap.	Lon	A stream.
Beag	Little.	Maoil	Headland, brow of a hill.
Beinn }	Mountain.	Meall	Rounded hill.
Bheinn		Mointeach}	
Bhreac, Breac	Speckled.	Monadh	Moss or moorland
Bhudhe, Buidhe	Yellow.	Mol, Moll	A beach.
Blod	Peak.	Mhór }	Great.
Bo, Bogbar.	A sunken rock.	Mull	Promontory.
Bun	Foot, Mouth of river.	Mullach	Summit.
Camas, Camus	Bay or creek.	Na	The.
Caol }		Na b	The.
Caolas	A firth or strait.	Nam	The, plural of Am
Cean	Head.	Nan	The, plural of An
Clach	Stone.	Ob, Obe	Creek or baven.
Cleit	A rugged eminence.	Oitir	Shoal.
Cnoc	Hill or knoll.	Poll or Puill	Pool.
Coire	Whirlpool.	Rhu, Ruadh	Red.
Corran	Hook.	Ru, Rubha	A point of land.
Craig	Cliff, Rock	Salann, Salean	Salt water bay.
Creag	Clif.	Sgeir	A rock in the sea.
Crois	Cross.	Sgeirean	Rocks in the sea.
Cruach	A heap.	Sgon, Sgonn	A lump.
Cul	Narrow.	Sgor, Sgurr	A peak.
Dearg	Red.	Sithean	Fairy knoll.
Dcas	South.	Sron	Nose, promontory.
Druim	A ridge.	Stac	A steep rock or conical hill.
Du }	Black.		
Dubh }			
Dun	Mound, Fort.	Strath	A river valley.
Each	Horse.	Tober	A well or spring.
Ear	East.	Torr	A conical hill.
Eileach, Eilean	Island or islet.	Traigh	Sandy beach.
Eileanan	Islands or islets.	Tuath	North.
Garbh	Rough	Uamh	Cave.
Geo, Geodha	Creek.		
Glas	Green or grey.		

NOTE.—In the pronunciation of Gaelic dh and gh at the end of syllables are very frequently silent; bh is frequently pronounced as v.

LAWS AND REGULATIONS APPERTAINING TO NAVIGATION.

While, in the interests of the safety of shipping, the Admiralty make every endeavour to include in their hydrographic publications details of the laws and regulations of all countries appertaining to navigation, it must be clearly understood:—

- (a) that no liability whatever can be accepted for failure to publish details of any particular law or regulation, and
- (b) that publication of the details of a law or regulation is solely for the safety and convenience of shipping and implies no recognition of the international validity of the law or regulation.

INFORMATION RELATING TO ADMIRALTY CHARTS AND PUBLICATIONS, GENERAL NAVIGATION, AND GENERAL METEOROLOGY.

ON THE CORRECTION OF ADMIRALTY CHARTS.

Guides to Navigation.—In addition to the charts, the navigational publications which are primarily affected by the continual changes and alterations that take place are the Admiralty Sailing Directions, the Admiralty List of Lights, Fog Signals and Visual Time Signals, and the Admiralty List of Radio Signals. The Admiralty Notices to Mariners contain information mainly for the correction of the charts and navigational publications. 5

CHARTS.

1. **Degree of Reliance.**—It should be clearly understood that the 10 value of a chart depends on the character of the original survey and on the completeness of the reports of subsequent changes. The remarks on "The Use of Charts as Navigational Aids, &c." which are subjoined should be carefully studied in this connection.

2. **System of Dating and Issue of Corrected Copies.**—15 Admiralty charts after first publication are kept corrected by means of new editions, large corrections, and small corrections. Copies of charts issued by the Hydrographic Supplies Establishment, Admiralty Chart Agents or Admiralty Chart Depots are corrected, except from temporary and preliminary Notices to Mariners, for all 20 navigational information to the date of issue.

New Charts.—The date of publication of a chart is shown outside the bottom margin, in the middle, e.g.:—

Published at the Admiralty 30th May, 1947.

New Editions.—When a chart is revised throughout, and modernised 25 in style a new edition is published, the date being shown outside the bottom margin and to the right of the date of publication, e.g.:—

New Edition 2nd Jany., 1947.

All large and small corrections notations are at the same time erased, and all old copies of the charts are cancelled. 30

Large Corrections.—When a chart is corrected from important information which is too comprehensive to promulgate by Admiralty Notice to Mariners or to insert conveniently by hand on existing

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copies, but when the chart is not revised throughout, the date on which these corrections are made is shown on the chart outside the bottom margin and to the right of the date of publication, and in the case of a chart already marked with a new edition date, below such date, e.g.:—

Large corrections 10th Feb., 1947.

All small corrections notations are at the same time erased, and all copies of the chart are cancelled.

Small corrections.—

- 10 (i) When a chart is corrected from the information promulgated in an Admiralty Notice to Mariners (except temporary and preliminary Notices), the year, if not already shown, and number of the notice are entered in the bottom left-hand corner of the chart, e.g.:—

15

Small corrections 1947-903.

Copies of the chart stocked by the Hydrographic Supplies Establishment, Admiralty Chart Agents and the Admiralty Chart Depots are corrected by hand from such information.

- 20 (ii) Prior to 1954, when a chart was corrected from information which was considered of no importance from the stand-point of safe navigation, and which was, therefore, not promulgated in an Admiralty Notice to Mariners, the year, if not already shown, and date of the correction were entered on the chart, in one of two ways, in the bottom left-hand corner below the margin and in sequence, with the notations referred to in the preceding paragraph,
e.g.:—

30

Small corrections, 1947—5.20

or Small corrections 1947—(VI.25)

These indicated that the chart plate received minor corrections on the 20th May or 25th June, respectively, which would appear on later printings.

- In such cases copies of the chart held by ships and establishments were not usually replaced by new copies, but in exceptional cases, e.g., when new compasses were inserted, new copies of the charts might be supplied. It should, however, be particularly noted that the absence of corrections represented by square or bracket dates from a chart did not invalidate it for navigation.

(iii) Since 1954, in order that more attention may be given to New Editions, Large Corrections and corrections by Notices to Mariners, and for other reasons, the making of minor corrections to Chart plates as in (ii) has been discontinued. Information of no importance to safe and convenient navigation is instead recorded for inclusion in the next New Edition or Large Correction; or, for promulgation, in a later Notice to Mariners should a change of circumstance alter the importance of the information.

- In consequence, the small correction date enclosed in a rectangle does not appear later than 1953 on navigational charts. The date within brackets may still appear and is then an indication that magnetic compasses have been corrected for a change in variation.

3. Correction of Charts in Ships.—All small but important corrections affecting navigation that can be made to the charts by hand are promulgated in Admiralty Notices to Mariners and, with the exception of corrections from temporary or preliminary Notices, should at once be neatly made in waterproof violet ink on the charts affected, the year (if not already shown) and numbers of the notices being inserted, also in waterproof violet ink, in the bottom left-hand corner of the chart. The recognised abbreviations shown on Admiralty chart No. 5011 ("Signs and abbreviations used on Admiralty Charts") should be used. 10

Generally speaking, the amount of information which should be inserted on a chart should be in accordance with that already shown.

On large scale charts, the abridged descriptions, as shown on chart No. 5011, of all details of all lights, light-buoys and fog signals, and the year dates of obstructions, reported shoals, dredged channels, 15 depth on bars or in shifting channels, and irregularities of lights, should be inserted.

On coastal charts, the abridged descriptions of only the principal lights and fog-signals, i.e., those to assist in approaching or making the land, should be inserted. 20

Particulars of such lights should be omitted, in the following order, as the scale of the chart decreases, viz.:—

- (i) Elevation, (ii) Period, (iii) Number in Group, and
(iv) Visibility.

Particulars of fog signals should be inserted in their appropriate 25 positions if space permits, but should otherwise be entered in a tabulated list under the title or some other convenient place on the chart.

Inner harbour light-buoys and beacons should not be inserted on 30 coastal charts, and against other light-buoys only the character of the light should be inserted.

On ocean charts, lights which are visible 15 miles or over should alone be inserted and then only their character and colour. 35

On all charts, writing should be inserted as much as possible clear of the water, unless the relative objects are on the water, and care should be taken not to obliterate any information already on the chart. When cautionary or tidal notes, &c., are inserted, they should be written in a convenient but *conspicuous* place, preferably near the title, where they will not interfere with other details. 40

Erasures should never be made but the details should, when necessary, be crossed through in waterproof violet ink. 45

Admiralty Notices to Mariners are occasionally accompanied by reproductions of portions of charts (known as "blocks"), and when correcting charts from such blocks the following points should be borne in mind:—

- (i) A block may not only indicate the insertion of new information, *but also the omission of matter previously shown*. The latter would, however, invariably be mentioned in the text of the Notice, and the fact that a block accompanies a Notice should not cause the text of the Notice to be disregarded. 50
- (ii) The limiting lines of a block are determined for convenience of reproduction and need not be adhered to when cutting out for pasting on the chart, provided that the point mentioned in the preceding paragraph is taken into consideration. 55

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- (iii) The new information shown on a block can sometimes be inserted on the chart by hand, the reason for issuing a block in such a case being to avoid a long description of the new information in the text of the Notice.
- 5 (iv) Owing to distortion the blocks do not always fit the charts exactly, care should therefore be taken when pasting a block on to a chart that the more important navigational corrections fit as closely as possible. This can best be assured by fitting the block while it is dry and making two or three pencil ticks round the edges for use as fitting marks after the paste is applied.
- 10

Corrections from Temporary or Preliminary Notices to Mariners should be inserted on the charts *in pencil* and the year and number of the notice should be shown against them, e.g.:—N.M. 625/1947
15 temp., and also in the bottom left-hand corner of the chart, in pencil, *below* the small corrections notations (*see above*). Temporary corrections should be rubbed out when the notice is received cancelling them, but preliminary corrections should be inked in when the notice is received reporting that the changes have been made.

20 Charts stocked by the Hydrographic Supplies Establishment, Admiralty Chart Agents and the Admiralty Chart Depots are *not* corrected from Temporary or Preliminary Notices to Mariners, and when charts are received from one of these sources they should be corrected in pencil as necessary from the copies of such Notices already held, or from those supplied with the charts.

Corrections from Radio Navigational Warnings concerning derelicts and drifting obstructions, the temporary extinction of lights, displacement of important aids to navigation, ice reports, &c., should also be noted *in pencil*, as received, on the charts affected. Radio Navigational
30 Warnings of a permanent nature and those relating to derelicts and drifting obstructions dangerous to navigation are re-issued in the form of Admiralty Notices to Mariners, but other warnings are not re-issued in this way, except in special circumstances.

Corrections from information received from authorities other than
35 the Admiralty should be noted, *in pencil*, on the charts affected, but no charted danger is to be expunged without the authority of the Hydrographer of the Navy.

NAVIGATIONAL PUBLICATIONS

1. Admiralty Sailing Directions, Supplements, &c.—The
40 Admiralty Sailing Directions, consisting of about 74 volumes for the whole world, contain general information useful to the navigator.

An index chart bound near the beginning of each volume shows the area dealt with and the serial numbers and limits of all Admiralty charts for the area which were published *when the volume was printed*.

45 Each volume is periodically revised throughout, and, in the intervals between the publication of new editions, Admiralty Notices to Mariners and Supplements are published to enable the volume to be corrected. It should, however be clearly understood that Sailing Directions cannot be correct in all minor details after the date of the latest Supplement.

50 The above-mentioned corrections are not made in the Sailing Directions stocked by the Hydrographic Supplies Establishment, Admiralty Chart Agents or the Admiralty Chart Depots.

A new edition of each volume of Sailing Directions is published at intervals of approximately from ten to twelve years. The number

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of the latest Admiralty Notice to Mariners used in its compilation is given in the "Advertisement" on page iii of each volume, and the numbers of the Notices affecting it between the dates of going to press and issue to ships and establishments are given in the Notice announcing its publication, to enable the new edition to be corrected 5 before being brought into use.

A Supplement to each volume is generally published annually, each succeeding Supplement cancelling the former. When a volume is taken up for revision, however, no further Supplement to that edition is issued, but subsequent Notices to Mariners affecting it are summarised 10 each year and issued as a separate publication, until the new edition of the volume is published.

A tabular form for notation of the existence of Supplements and Summaries of Notices is printed on the front fly-leaf of all Sailing Directions, and these notations are made as necessary in all copies 15 issued by the Hydrographic Supplies Establishment and the Admiralty Chart Depots.

Supplements and Summaries of Admiralty Notices to Mariners should be retained intact. *Whenever reference is made to the Sailing Directions, the Supplement, and where applicable the Summary, must be 20 consulted.* The existence of a Supplement or Summary of Admiralty Notices to Mariners is to be entered in the tabular form inside the cover of the Sailing Directions. New and amended information appearing in the Supplements for the first time is indicated by square brackets, and deletions from the previous Supplement are indicated 25 by horizontal lines.

Admiralty Notices to Mariners affecting Sailing Directions are not to be cut up and pasted in, but the book is to be annotated in the margin, or corrected in manuscript, as convenient.

2. **The Admiralty List of Lights, Fog Signals and Visual 30 Time Signals.**—The Admiralty List of Lights, Fog Signals and Visual Time Signals for the world is issued in twelve volumes divided geographically as shown on the index chart at the beginning of each volume.

Light-buoys are not included in the list. 35

The volumes are published annually at the rate of one volume per month; however, if there are insufficient corrections to justify the publication of a new edition of any volume, this will be notified by Notice to Mariners.

Each volume will be issued with an inscription on its cover and title 40 page stating the date to which the volume has been corrected, which will be approximately eight weeks prior to the date of its issue. Corrections or additions to each volume, which may occur between the date of correction and date of issue, will be promulgated by Section III of the Weekly Edition of Admiralty Notices to Mariners announcing 45 the Publication of the new volume.

Amendments.—Important amendments are promulgated in Admiralty Notices to Mariners. In Section III of each Weekly Complete Edition of these Notices will be found additions and alterations made to Lights, Fog Signals and Visual Time Signals by the Notices issued 50 during the week affected; this section also includes other amendments, particularly amendments of a Temporary nature, which have not yet necessitated or will not necessitate the issue of a Notice to Mariners.

Corrections to the Light Lists may be extracted from Section III and pasted in the appropriate volume. 55

Note.—Corrections are not made in copies of the Lists of Lights, &c.,

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stocked by the Hydrographic Supplies Establishment, Admiralty Chart Agents or the Admiralty Chart Depots, and copies received from these sources should accordingly be corrected from the weekly editions of the Notices to Mariners before being brought into use.

5. **The Admiralty List of Radio Signals.**—The Admiralty List of Radio Signals is issued as follows:—

Volume I.—Communications—Comprises particulars of radio-telegraph coast stations, together with general regulations; it also includes such subsidiary services as medical advice supplied by

- 10 radio, distress signals and details of Air-Sea Rescue Organisation.

Volume II.—Navigational Aids—Comprises particulars of services from direction-finding stations and radiobeacons including air radio-beacons useful to ships; also stations giving QTG service and calibration stations; all relevant codes and regulations will be

- 15 found in this volume.

Volume III.—Meteorological Services—Comprises particulars of weather services provided for the use of shipping, together with relevant codes.

Volume IV.—Meteorological Observation Stations.

- 20 Volume V.—Comprises particulars of Radio time signals, Uniform time system, navigational warnings and Position fixing systems (Decca, Loran, Consol, etc.).

New editions of each volume will normally be published annually.

- All corrections subsequent to the date of publication are promulgated 25 in Section VI of the complete weekly edition of Admiralty Notices to Mariners.

Copies of the List stocked by the Hydrographic Supplies Establishment, Admiralty Chart Agents or the Admiralty Chart Depots are not kept corrected, and Lists received from these sources should accordingly 30 be corrected from the weekly editions of the Admiralty Notices to Mariners before being brought into use.

4. **The Admiralty Tide Tables.**—The Admiralty Tide Tables are published in three volumes as follows:—

Volume I.—“EUROPEAN WATERS (including Mediterranean Sea).”

- 35 Volume II.—“ATLANTIC AND INDIAN OCEANS.”

Volume III.—“PACIFIC OCEAN AND ADJACENT SEAS.”

Each volume contains two parts, Part I giving tidal predictions for Standard Ports and in Vols. II and III, tidal stream predictions for certain straits and channels. Part II gives data for predicting 40 tides at Secondary Ports.

THE USE OF CHARTS AS NAVIGATIONAL AIDS AND GENERAL REMARKS RELATING TO PRACTICAL NAVIGATION.

- (1) **Reliance on a chart.**—The value of a chart must manifestly 45 depend upon the accuracy of the survey on which it is based, and this becomes more important the larger the scale of the chart.

To estimate this the date of the survey, which is always given in the title, is a good guide. Besides the changes that, in waters where sand or mud prevails, may have taken place since the date 50 of the survey, the earlier surveys were mostly made under circum-

stances that precluded great accuracy of detail, and, until a plan founded on such a survey is tested, it should be regarded with caution. It may, indeed, be said that, except in well-frequented harbours and their approaches, no surveys yet made have been so minute in their examination of the bottom as to make it certain that all dangers have 5 been found. The fullness or scantiness of the soundings is another method of estimating the completeness of a chart. When the soundings are sparse or unevenly distributed, it may be taken for granted that the survey was not in great detail.

It appears to be insufficiently realised that the degree of reliance 10 which may reasonably be placed upon an Admiralty chart, even in surveys of modern date, is mainly dependent on the scale on which the survey was made. The scale for publication is now generally that of the original survey, except in the case of coast sheets which are sometimes reduced. It should not, therefore, be assumed that the 15 original survey was made on a larger scale than that published.

It must be borne in mind that the principal method of ascertaining the inequality of the bottom of the sea is by the laborious process of sounding, and that in sounding over any area, the boat or vessel obtaining the soundings is kept on given lines; that each time the 20 lead descends, or a sonic sounding is taken, the depth over only a small area is obtained, in the case of the lead, it has a diameter of only a few inches, and that consequently each line of soundings, though miles in length, is only to be considered as representing a narrow width. 25

Surveys are not made on uniform scales, but each survey is made on a scale commensurate with its apparent importance. For instance, a general survey of a coast which vessels only pass in proceeding from one place to another is not usually made on a scale larger than one inch to the nautical mile, while surveys of areas 30 where vessels are likely to anchor are made on a scale of three inches to the mile, and surveys of frequented ports or harbours likely to be used by fleets, on a scale of from six inches to ten inches to the nautical mile.

Close examination by sounding is the only method by which surveys on a large scale can be made, and in view of the vast mileage of surveys 35 yet requiring completion in the interests of navigation, it would be a waste of time to undertake large scale coast surveys.

The scale on which a survey is to be conducted having been settled, it is manifestly superfluous to obtain more lines of soundings than can be represented on the paper. 100 soundings, which is the maximum 40 number that can be placed with clearness on every square inch of paper, means that on a scale of one inch to the mile each sounding on the chart occupies an area representing eight acres of actual ground, whilst on a scale of six inches to the mile each sounding represents an area of a little less than a quarter of an acre, i.e., of 100 feet 45 square.

The following diagram represents as many soundings as can be placed legibly on a square inch of paper:—

16	15	15	13	13	14	12	11	10	9
14	15	14	14	13	13	12	11	9	8
15	15	14	17	16	14	13	10	10	9
16	16	17	18	16	17	14	8	9	10
16	17	15	12	9	7	7	7	9	10
19	16	12	9	5	4	5	6	8	9
22	19	16	10	3	5	6	7	8	10
20	16	12	7	5	6	5	7	8	10
18	15	11	9	7	7	7	8	10	11
20	17	14	11	12	10	9	10	11	13

Little assistance in detecting excrescences on the bottom is afforded by the eye, when sounding in a boat, even in clear water, on account of the observer being within five feet of the surface; none in turbid seas. If, therefore, there is no inequality in the soundings to cause suspicion, a shoal patch between two lines may escape detection.

Thus, in a chart on a scale of one inch to the mile, an inequality of some acres in extent rising close to the surface, if it happened to be situated between two lines, might escape detection; whilst in a chart on a scale of 6 inches, inequalities as large as battleships, 10 if lying parallel with, and between the lines of soundings, might exist without detection if they rose abruptly from an otherwise even bottom.

General coast charts should not, therefore, be looked upon as infallible, and a rocky shore should on no account be approached within the ten-fathom contour line, without taking every precaution 15 to avoid a possible danger; and even with surveys of harbours on a scale of 6 inches to the mile vessels should avoid, if possible, passing over charted inequalities in the ground, as some isolated rocks are so sharp that the lead may not find the highest part. Better results can, however, be obtained by sonic sounding owing 20 to the rapidity with which such soundings can be taken, but even this method will not find rocks unless the boat or vessel be directly over them.

Blank spaces among soundings mean that no soundings have been obtained in these spots. When the surrounding soundings are 25 deep it may with fairness be assumed that in the blanks the water is also deep; but when they are shallow, or it can be seen from the rest of the chart that reefs or banks are present, such blanks should be regarded with suspicion.

Soundings in hair line, which are shown on the latest charts in 30 upright figures, and on other charts in sloping figures, indicate that such soundings have been taken from smaller scale charts, an unreliable source, or adapted from old and imperfect surveys.

(2) Fathom lines a caution.—Except in plans of harbours that have been surveyed in detail, the six-fathom line on most Admiralty 35 charts is to be considered as a caution or danger line against unnecessarily approaching the shore or bank within that line, on account of the possibility of the existence of undiscovered inequalities of the bottom, which nothing but an elaborate detailed survey could reveal. In general surveys of coasts or of little frequented anchorages, the 40 necessities of navigation do not demand the great expenditure of time required for such a detailed survey. It is not contemplated that ships will approach the shore in such localities without taking special precautions.

The ten-fathom line is, on rocky shores, as before mentioned, another 45 warning, especially for ships of deep draught.

Charts on which no fathom lines are marked must be especially regarded with caution, as it generally means that soundings were too scanty and the bottom too uneven to enable them to be drawn with accuracy.

50 Isolated soundings, shoaler than surroundings depths, should always be avoided as there is no knowing how closely the spot may have been examined.

(3) Chart on largest scale always to be used.—It sometimes happens that from press of work, only the copper plate of the larger 55 scale chart of a particular locality can at once receive any extensive re-arrangement of coastline or sounding. This is an additional reason,

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besides the obvious one of the greater detail shown, why this largest scale chart should always be used for navigating.

(4) **Caution in using small-scale charts.**—In approaching the land or dangerous banks, regard must always be had to the scale of the chart used. A small error in laying down a position means only yards ⁵ on a large-scale chart, whereas on a small scale the same amount of displacement means large fractions of a mile.

For the same reason bearings to near objects should be used in preference to objects farther off, although the latter may be more prominent, as a small error in bearing or in laying it down on the ¹⁰ chart has a greater effect in misplacing the position the longer the line to be drawn.

(5) **Graduation.**—All plans are now being graduated in skeleton style before publication in order to facilitate easy reference to geographical positions; previously published plans are also graduated as ¹⁵ opportunity offers. The graduation is, however, of necessity often based upon imperfect information of a conflicting nature; for this reason, whenever a geographical position is quoted other than approximate (i.e., when seconds are given), it is necessary to quote also the number of the particular chart from which the position has been ²⁰ derived.

In this connection it is pointed out that, whenever possible, a position should be transferred from one chart to another by bearing and distance from a distinguishing feature common to both, such as a point of land or a light, &c., and not by the graduation which ²⁵ may differ owing to one of the charts being constructed on later and more complete geographical data than the other.

(6) **Distortion of printed charts.**—The paper on which charts are printed is, from various causes, subject to distortion, but the effect of this is seldom sufficient to affect navigation. It must not, however, ³⁰ be expected that accurate series of angles taken to different points will always exactly agree when carefully plotted upon the chart, especially if the lines are to objects at some distance. The larger the chart the greater the amount of this distortion.

(7) **Buoys.**—It is manifestly impossible that any reliance can be ³⁵ placed on buoys always maintaining their exact position. Buoys should, therefore, be regarded as warnings and not as infallible navigating marks, especially when in exposed positions; and a ship should always, when possible, be navigated by bearings of fixed objects on shore or angles between them, and not by buoys. ⁴⁰

(8) **Light-buoys.**—The lights shown by light-buoys cannot be implicitly relied on, as, if occulting or flashing, the apparatus may get out of order, or the light may be altogether extinguished. These lights in the British Isles are from 5 to 217 candle-power.

(9) **Cable-buoys.**—Cable-buoys marking the ends of submarine ⁴⁵ cables usually are spherical or can-shaped, surmounted by a globe and occasionally a flag. Below the topmark two *white* fixed lights, disposed horizontally, may be exhibited, but they cannot be implicitly relied on.

(10) **Lights.**—Arcs drawn on charts round a light are not intended ⁵⁰ to give information as to the distance at which it can be seen, but solely to indicate, in the case of lights which do not show the same characteristics or colours in all directions, the bearings between which the differences occur.

All the distances given in the Admiralty List of Lights and on the ⁵⁵ charts for the visibility of lights are calculated for a height of an

observer's eye of 15 feet. The table of distances visible due to elevation, at the beginning of each volume of the Admiralty List of Lights, affords a means of ascertaining how much more or less the light is visible should the height of the eye be more or less. The glare of a powerful light is often seen far beyond the limit of visibility of the actual rays of the light, but this must not be confounded with the true range. Again, refraction may often cause a light to be seen farther than under ordinary circumstances.

When looking out for a light at night, the fact is often forgotten that from aloft the range of vision is much increased. By noting a star immediately over the light a very correct bearing may be afterwards obtained from the compass.

The intrinsic power of a light should always be considered when expecting to make it in thick weather. A weak light is easily obscured by haze, and no dependence can be placed on its being seen.

The power of a light can be estimated by remarking its candle power, as given in the Admiralty List of Lights, and in some cases by noting how much its visibility in clear weather falls short of the range due to the elevation at which it is placed. Thus, a light standing 200 feet above the sea, and only recorded as visible at 10 miles in clear weather, is manifestly of little brilliancy, as its elevation would permit it to be seen over 20 miles, if of any power. (See table in the Admiralty List of Lights.)

The distance from a light cannot be estimated either by its brilliancy 25 or its dimness.

On first making a light from the bridge, by at once lowering the eye several feet and noting whether the light is made to dip it may be determined whether the vessel is in the circle of visibility corresponding with the usual height of the eye or unexpectedly nearer the light.

30 (11) Fog signals.—Sound is conveyed in a very capricious way through the atmosphere. The following points in regard to fog signals should be borne in mind:—

- (a) Fog signals are heard at greatly varying distances.
- (b) Under certain conditions of atmosphere, when an air fog signal is a combination of high and low tones one of the notes may be inaudible.
- (c) There are occasionally areas around a fog signal in which it is wholly inaudible.
- (d) A fog may exist a short distance from a station and not be observable from it, so that the signal may not be sounded.
- 40 (e) Some fog signals cannot be started at a moment's notice after signs of fog have been observed.

Mariners are therefore warned that fog signals cannot be implicitly relied upon, and that *the practice of sounding should never be neglected.* 45 Particular attention should be given to placing "Look-out men" in positions in which the noises in the ship are least likely to interfere with the hearing of the sound of an air fog signal; as experience shows that, though such a signal may not be heard from the deck or bridge when the engines are moving, it may be heard when the ship is stopped, 50 or from a quiet position. It may sometimes be heard from aloft though not on deck.

Great assistance may be obtained from radio beacons at many important lighthouses and light-vessels, but the attention of Mariners is called to the serious dangers which may arise from their misuse. 55 No attempt should be made to approach such a position on a radio bearing, whilst relying on hearing the sound fog signal in sufficient

time to alter course to avoid danger. When the radio fog signal is transmitted from a light-vessel, it is essential in order to avoid collision, that the bearing from the light-vessel should not be kept constant.

(12) **Tides.**—In navigating coastal waters where the range of the tide is considerable, caution is always necessary. The tidal predictions for Standard ports in the Admiralty Tide Tables can generally be relied upon to give the times of high and low water to within a few minutes, and heights within a few tenths of a foot. Larger errors are to be expected in the predictions for places which are not Standard ports, computed from the data in Part II, but such predictions computed 10 from the harmonic constants are always sufficiently accurate for the general requirements of navigation. For Standard ports the heights of the tide at times between high and low water may usually be found within narrow limits in accordance with the instructions in Parts I and III of the Tide Tables. 15

The datums of Admiralty charts depending on Admiralty surveys vary with the type of tide, but usually conform with the International agreement, that datum should be "a plane so low that the tide will but seldom fall below it." The datums used by different nations, however, differ very considerably and those of Admiralty charts 20 depending on foreign surveys are always those used by the original surveyors, which vary from "lowest possible low water" to "mean low water" in tidal waters, and are usually mean sea level in non-tidal waters.

The datum used is always stated on large-scale Admiralty charts. 25

Caution.—Most datums are above the lowest level to which the tide may fall; the charts therefore do not always show minimum depths.

(13) **Tidal streams.**—Where the tidal streams are semi-diurnal information regarding them is usually given, in a convenient part of the chart, in tabular form or by notes, special symbols being inserted at the 30 positions to which the information refers. In certain cases, where the information available is incomplete, the streams are indicated by means of arrows.

There are many places where the tidal streams cannot be predicted by reference to the tide at a Standard port. Although no data for 35 predicting the times at which they flow is given, their general direction is, in many cases, indicated by arrows on the charts. For a few of the straits and channels, where these conditions exist, tidal stream predictions are given in Admiralty Tide Tables.

Tidal streams, particularly if rotary, may vary considerably both in 40 direction and rate; predictions of the stream must therefore always be considered approximate.

The turn of the tidal stream is not usually coincident with the times of high and low water; in fact, though in estuaries, harbour entrances, &c., the stream usually turns at about the times of high and low 45 water, in open channels, and along open coasts generally, the turn usually occurs more nearly at half-tide. Predictions of the times of high and low water must therefore never be used as predictions of the times of slack water.

It should be remembered that, even where the general direction 50 of the stream is parallel with the shore, an indraught is usually experienced when crossing the entrances to bays and inlets.

(14) **Fixing positions.**—For further information on this subject, see Admiralty Manual of Navigation.

When in sight of land, every opportunity should be taken of fixing 55 the ship's position by terrestrial objects.

(a) *Simultaneous bearings or angles.*—The most usual method is by compass bearings of suitable objects, and it must be borne in mind that a fix by only two bearings is liable to error, either an absolute error in taking the bearings, or those made in applying the deviation or in laying the bearings off on the chart. For these reasons, a third or check bearing of some other object should, when possible, be taken, especially when near the shore or dangers. The coincidence of the resulting three lines will prevent any mistakes if the objects are suitably placed.

10 The position may also be fixed by observing horizontal sextant angles of well-defined suitably placed objects. These angles may be plotted on the chart with a station-pointer. Two conditions are, however, necessary to its successful employment; first, that the objects be well chosen; and, second, that the observer is skilful and rapid in his use of the sextant and station-pointer. For the former, reference can be made to the pamphlet on the use of the station-pointer, or to the Admiralty Manual of Navigation; the latter is only to be obtained by practice.

It will readily be seen that a sextant often offers advantages, as angles can be obtained from any position whence the objects are visible, and the fix is in no way dependent on the compass.

In many narrow waters also, where the objects may yet be at some distance, as in coral harbours or narrow passages among mud banks, navigation by sextant and station-pointer is invaluable, as a true position can only be obtained by its means. A small error in either taking or plotting a bearing under such circumstances may put the ship ashore.

30 In all cases where great accuracy of position is required, such as the fixing of a rock or shoal, or the addition to a chart of fresh soundings or new buildings, angles should invariably be used. In such cases angles should be taken of a number of objects, five being a good number, since this not only fixes the position beyond doubt, but also affords a useful check on the accuracy of the chart itself. When running a line of soundings it is only necessary to take a third angle every now and then, firstly to make certain that the more important soundings, as at the end of a line, are correctly placed, and secondly to check the general accuracy of the chart.

Sometimes when only one of the selected objects is visible from the compass, a compass bearing of it and a sextant angle to the other may be used to fix the position.

(b) *Simultaneous bearing and distance.*—Attention is also directed to the very useful and handy method of fixing by the bearing and distance of a suitable object.

Should the ship be supplied with ranging equipment, its use here is obvious, but without it a very good approximate distance of an object of known height may be obtained by observing its angle of elevation and obtaining its distance from Lecky's Offshore Distance Tables, which are supplied with all sets of charts. Full directions for the use of these Tables are given with them.

50 (c) *The running fix.*—If two position lines are obtained at different times the position of the ship may be found by transferring the first position line up to the time of taking the bearing for the second position line. The point of intersection of the second and the transferred position line is the ship's position at the time of the second observation.

55 The accuracy of this fix will depend on the accuracy of the estimated run (over the ground) between bearings and, therefore, it is essential

to take great care that an accurate allowance is made for tidal stream, current, and leeway experienced by the ship during this interval.

The method of fixing by doubling the angle on the bow is useful when passing points of land, &c., in waters where there is either no tidal stream or current, or where this can be estimated with sufficient accuracy. 5

This method is as follows:—

Suppose that the angle between the ship's head and an object is measured, and found to be X° , and that the time of the observation is noted. Suppose also that the time is again taken when the angle between the ship's head and the object is $2X^\circ$. Then, if the course 10 made good is the course steered, the distance of the ship from the object at the time the second bearing was taken is equal to the run (over the ground) in the interval. Hence the ship's position can at once be laid off as a bearing and distance from the object. In practice the angle X should not be less than about 25° . 15

The most usual form of this method, the so-called "four-point" bearing, gives a good fix for a departure, but does not ensure safety, as the point and any dangers that may lie off are abeam before the position is obtained.

The above fix is reliable when there is no tidal stream or current 20 or when it runs directly with or against the course of the ship. When the stream or current runs across the course of the ship or when leeway is to be allowed for, this method should never be used and the ship's position should be obtained by plotting the two bearings as a running fix. 25

A table "Distance of an object by two bearings" is supplied with certain chart folios, and is also given in Inman's Tables, by which the ship's position at the second bearing can be found: any two bearings at a suitable angle to each other may be used, together with the run between them, but again, this table should not be used when 30 the vessel is subject to a cross tidal stream or leeway.

(d) *The danger angle.*—The use of the danger angle in passing outlying dangers with land behind them should also not be forgotten.

A vertical danger angle is useful when the danger lies off an object such as a lighthouse, the height of which is known; the angle being 35 obtained from the aforesaid Lecky's Tables. If a horizontal danger angle between two objects is used, however, caution is necessary, as, should the objects not be correctly placed on the chart, the angle taken from it may not serve the purpose. This method should not, therefore, be employed when the survey is old or manifestly imperfect. 40

(e) *The astronomical position line.*—When fixing by astronomical observations, attention is drawn to the great utility of the position line. Even a single position line may at times give invaluable information as the ship must be somewhere on this line, provided that the 45 chronometer error is accurately known.

A sounding obtained at the same time may often serve to give an approximate position. Again, by steering along, or at a required distance parallel to, a single position line, a vessel may make her port or avoid a danger, although uncertain of her position. 50

A very accurate position may be obtained by observations of three or more stars at evening or morning twilight, or by the observation of a bright star at daybreak and another shortly afterwards of the sun when a few degrees (not less than 10°) above the horizon. The position lines obtained from the bodies observed should differ in azimuth by 55 30° or more.

Mariners are also reminded that, with modern tables for correcting the altitude, observations of the moon entail practically no more calculation than those of a planet. Moon sights are sometimes available when stars are obscured by light cloud, &c.; also, an excellent position may frequently be obtained by simultaneous observations of the sun and moon.

(f) *The radio position line.*—A number of radio systems of which the principal ones are M/F D/F, Radiobeacons, Consol beacons, Loran, Gee and Decca, are now in general use from which position lines or fixes may be obtained.

The accuracy and range which may be obtained from these systems vary considerably; their great advantage over other methods lies in the fact that they can be employed under all weather and visibility conditions, though in some cases the results obtained will vary between day and night.

Special receiving equipment is generally required in order to make use of the radio signal, and some systems require special lattice charts or tables for plotting the position lines. Full details of these systems and their coverage areas are contained in Admiralty List of Radio Signals, Volumes II and V.

The mariner should appreciate that with the position-fixing systems the accuracy of a fix will depend on three factors:—

- (i) The distance of the observer from the transmitters.
- (ii) The bearing of the observer from the base line joining the pair of stations which he is using.
- (iii) The angle of intersection of the hyperbolic position lines.

It should be apparent from the inspection of any lattice chart that an inherent small equipment error, or a small personal error that may occur at the receiver, will cause a geographical error of varying amount according to the observer's position.

It is important to realise that accurate equipment is no guard against the vagaries of the propagation of radio waves. The beacons and systems operating on medium and low frequencies are liable to "night error" in areas where the ground and sky waves are received with equal strength; these areas will occur at ranges depending upon the particular frequency used by any beacon or system. Where the transmissions of two stations are synchronised to provide one signal reading and position line, "night error" will be a minimum along the normal to the base line joining the pair of stations, and a maximum towards the limits of their service sector.

Little is yet known about the effects of hills and discontinuities in the terrain (such as cliffs) on the speed of medium- and low-frequency radio waves.

At the other end of the radio spectrum the transmissions of systems operating on the very high frequencies are subject to distortion in abnormal atmospheric conditions.

(g) *Fixing by radar.*—Radar may also be of assistance when navigating in coastal waters in low visibility or at night. It is essential, however, to appreciate the limitations of a radar set when interpreting the information obtained from it. It must be remembered that the radar sea horizon is, under normal radio propagation conditions, only slightly farther than the visual sea horizon with the eye at the same height as the radar aerial. No echoes will be received from a coastline lying beyond and below the radar horizon, but they may be received from more distant high ground; this may give a misleading impression of the range of the nearest land.

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Abnormal propagation conditions, which often occur in tropical regions, can produce a pronounced increase in detection ranges whilst the opposite, a decrease in detection ranges, sometimes occurs in higher latitudes.

The best fixing accuracy will be obtained by using isolated objects such as detached lighthouses, rocky islets, the extremities of long piers or jetties, or such features as steep cliffs.

Bearing and Range accuracy.—The possible errors in the measurement of bearing and range must be taken into account when using radar for position fixing. In modern 3 cm. radar equipments the minimum bearing error is likely to be one degree for echoes near the edge of the display and the minimum range error $2\frac{1}{2}\%$ of the maximum range of the scale in use or 75 yards, whichever is the greater.

The width of the radar beam in the horizontal plane has the effect of drawing out the edges of the echoes of targets; if this is not allowed for, errors up to a maximum of one degree ($\frac{1}{2}$ beam width) may result. When taking a series of bearings on the same echo, care is necessary to ensure that the same part of the echo is used. Except when using gyrostabilised displays, great care is necessary to allow for 'yaw'.

The greatest accuracy of range and bearing measurement will be obtained if the range-scale is selected so that the echo under observation is in the outer half of the display.

Identification of coastal features.—The identification of coastal features is dependent on their configuration. Reflection of radar energy is very similar to that of light waves and hence curved or sloping surfaces will not give as strong a radar echo as abrupt faces such as steep cliffs; moreover, the appearance of the echo may vary considerably with the bearing. It is difficult to identify any portion of flat or gently shelving coastline such as mud-flats or dunes.

Range of detection is improved and identification is assisted in some areas by the fitting of radar reflectors to objects such as buoys. Attention is drawn to the symbols with which such objects are marked on Admiralty charts and which are given in the latest edition of chart No. 5011—"Explanation of signs and abbreviations used on Admiralty charts".

More positive identification may, in the future, be obtained from "Racons" which are self-contained transmitter/receivers situated on shore or on navigational marks, whose function is to receive ships' radar transmissions and to transmit a return signal which will be displayed on the ship's PPI at the range and bearing of the Racon.

Radar stations providing navigational assistance.—Details concerning certain shore-based radar stations which render navigational assistance to ships are given in the Admiralty List of Radio Signals, Volume II.

(15) **Observations for errors of the compass.**—No opportunity should be neglected for checking the error of the compass. When coasting, and a well-surveyed and fairly large-scale chart is available, an excellent method of observing the error is by taking the compass bearing of two suitable objects when in transit, and comparing this with the charted bearing; there should be sufficient distance between the objects to provide a sensitive transit. When this method is not available the error should be obtained by azimuths of a heavenly body. Errors should be observed on any change of course on which the ship is steered for a reasonable time, and at least twice a day when steering a steady course for long periods.

(16) **Change of variation of the compass.**—The gradual change

in the variation must not be forgotten in laying down positions by bearing on charts. The magnetic compasses placed on the charts for the purpose of facilitating plotting become in time slightly in error, and in some cases, such as with small scales, or when the lines are long, the displacement of position from neglect of this change may be of importance. The compasses are re-engraved when the error amounts to a degree, but the chart plates cannot be corrected more frequently from the impossibility of making alterations often on one spot in a copper plate.

10 The geographical change in the variation is in some parts of the world sufficiently rapid to need consideration. For instance, in approaching Halifax from Newfoundland the variation changes 10° in less than 500 miles, and in the English channel about 5° in 400 miles. The Variation chart should be consulted on this head.

15 On certain general charts embracing large areas with considerable change of variation, true compasses are placed instead of magnetic compasses, the variation being shown by *isogonic lines* (curves of equal magnetic variation). In a similar manner to the Variation chart. One or two *isogonic lines* are also sometimes placed on charts, in 20 addition to the magnetic compasses, in order to indicate the general direction of these curves, and thus facilitate the determination of the variation to be employed in portions of the chart not in immediate proximity to any one of the engraved compasses. Magnetic variation values shown on Admiralty charts are for the 1st July of the year 25 mentioned, prior to 1955, and for 1st January subsequent to that year.

(17) Local magnetic disturbance of the compass on board ship.—The term "local magnetic disturbance" has reference only to the effects on the compass of magnetic masses external to the ship in which it is placed. Observation shows that such disturbance of the 30 compass in a ship afloat is experienced only in a few places on the globe. Magnetic laws do not permit of the supposition that it is the visible land which causes such disturbance, because the effect of a magnetic force diminishes in such a rapid proportion as the distance from it increases that it would require a local centre of magnetic force 35 of an amount absolutely unknown to affect a compass half a mile distant.

Such deflections of the compass are due to magnetic ores in the bed of the sea under the ship, and when the water is shallow, and the force strong, the compass may be temporarily deflected when 40 passing over such a spot, but the area of disturbance will be small, unless there are many centres near together. Such areas are depicted by a special symbol on charts, and the cause of the magnetic disturbance is referred to as a Local Magnetic Anomaly.

They may also be due to wrecks lying on the bottom in moderate 45 depths, but investigations have proved that, while deflections of unpredictable amount may be expected when very close to such wrecks, it is unlikely that deflections in excess of 7° will be experienced, nor should the disturbance be felt beyond a distance of 250 yards.

It is very desirable that whenever a ship passes over an area of 50 local magnetic disturbance, the position should be fixed, and the facts reported as far as they can be ascertained.

(18) Use of oil for modifying the effect of breaking waves.—Many experiences of late years have shown that the utility of oil for this purpose is undoubted, and the application simple.

55 The following may serve for the guidance of seamen, whose attention is called to the fact that a very small quantity of oil, skilfully applied,

may prevent much damage both to ships (especially the smaller classes) and to boats, by modifying the action of breaking seas.

The principal facts as to the use of oil are as follows:—

1. On free waves, i.e., waves in deep water, the effect is greatest.
2. In a surf, or waves breaking on a bar, where a mass of liquid is in actual motion in shallow water, the effect of the oil is uncertain, as nothing can prevent the larger waves from breaking under such circumstances; but even here it is of some service.
3. The heaviest and thickest oils are most effectual. Refined kerosene is of little use; crude petroleum is serviceable when nothing else is obtainable; but all animal and vegetable oils, such as waste oil from the engines, have great effect.
4. A small quantity of oil suffices, if applied in such a manner as to spread to windward.
5. It is useful in a ship or boat, both when running, or lying to, or in wearing.
6. No experiences are related of its use when hoisting a boat up in a sea-way at sea, but it is highly probable that much time and injury to the boat would be saved by its application on such occasions.
7. At anchor, when the sea is sufficient to render it difficult to hoist up or in boats, oil bags from forward or from the swinging booms have been found to render the sea alongside comparatively smooth.
8. In cold water, the oil, being thickened by the lower temperature, and not being able to spread freely, will have its effect much reduced. This will vary with the description of oil used.
9. The best method of application in a ship at sea appears to be: hanging over the side, in such a manner as to be in the water, small canvas bags, capable of holding from one to two gallons of oil, such bags being pricked with a sail needle to facilitate leakage of the oil. The position of these bags should vary with the circumstances. Running before the wind they should be hung on either bow and allowed to tow in the water.
10. With the wind on the quarter the effect seems to be less than in any other position, as the oil goes astern while the waves come up on the quarter.
11. Lying to, the weather bow and another position farther aft seem the best places from which to hang the bags, with a sufficient length of line to permit them to draw to windward, while the ship drifts.
12. Crossing a bar with a flood tide, oil poured overboard and allowed to float in ahead of the boat, which would follow with a bag towing astern, would appear to be the best plan. As before remarked, under these circumstances the effect cannot be so much trusted.
13. On a bar with the ebb tide it would seem to be useless to try oil for the purpose of entering.
14. For boarding a wreck, it is recommended to pour oil over-board to windward of her before going alongside. The effect in this case must greatly depend upon the set of the current, and the depth of the water.
15. For a boat riding in bad weather from a sea anchor, it is recommended to fasten the bag to an endless line rove through a block on the sea anchor, by which means the oil is diffused well ahead of the boat, and the bag can be readily hauled on board for refilling if necessary.
16. Towing a vessel in a heavy sea, oil is of the greatest service, and may prevent parting the hawser. Distribute from the towing vessel forward and on both sides; if used only aft the tow alone gets the benefit.

(19) **Mirage and abnormal refraction.**—An unusual lapse rate of temperature (and therefore density as well) with height immediately above the sea (or land) surface produces a distortion in the appearance of objects near the horizon; such a phenomenon is known as *mirage*.

When the surface is relatively cold (and the wind very light) so that the density of the air decreases rapidly for a short distance above the surface, light rays from objects low down near the horizon are bent down, the same way in fact as are usually the rays of the sun when entering the earth's atmosphere at a low altitude. The effect is to render visible objects that are normally below the horizon, e.g., lights may be "raised" at night at much greater distances than one would ordinarily expect. This phenomenon is known as "looming."

A further occasional effect produced when the air is appreciably warmer than the sea, is "superior mirage" in which an inverted image is seen over the real object; sometimes an erect image is seen immediately above and touching the inverted one. The object and its images in this instance are well defined in contrast to the shimmering object and image of the inferior mirage. Superior mirage is most often experienced in high latitudes and wherever the sea surface temperature is abnormally low.

"Inferior mirage," the effect of which is to decrease the distance at which objects are visible in a horizontal direction, is due to a rapid increase of density with height close to the surface such as occurs when air of comparatively low temperature blows over a warmer sea, or over a tarred road or desert when a hot sun is beating down on it. In either event light rays are bent up when approaching the surface where the density of the air is much less than above. The coastline, and at times a ship or island, may appear to be floating in air above a shimmering horizon, possibly with, in the former instance, her hull either invisible or with an inverted image underneath. Inferior mirage is comparatively uncommon at sea and is more likely to be observed along a coastline than well out to sea.

When mirage is evident caution must be used in taking sights with a sextant, for abnormal refraction must necessarily be present also. With inferior mirage better, but not normal, results will usually be obtained by ascending as high as possible in the ship; with superior mirage the height of eye should be as low as possible. It is, however, advisable, whenever abnormal refraction is suspected, to measure the elevation of the celestial body above the back as well as the front horizon as explained in navigational text-books.

(20) **Aurora.**—The most common form of aurora is an arc system, single or multiple, narrow and well defined, or broad and diffuse, and centred on the magnetic meridian.

The most usual colour is pale whitish green when the auroral activity is weak and diffuse: but when the aurora arises high towards the zenith in the form of rays, rayed curtains and draperies with much rapid movement of the constituent rays, the colours sometimes become much stronger and more vivid, and include bright green, red and violet. When the curtains forming the aurora converge to form a corona, which may rotate very rapidly about the point of convergence, the displays may become very complex, filling practically the whole sky, and extending far to the equatorial side of the zenith with much rapid movement and change of colour from instant to instant.

Though the most usual duration of auroral displays in these high latitudes is several hours, they not infrequently last throughout the whole night from dusk to dawn. In such long displays the really

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intense and violently active periods with vivid strong colours are generally confined to spasms of 15-30 minutes, with the intervening periods filled with diffuse glows or quiet arc systems.

The absolute intensity of the light of the aurora is seldom great, and the brighter stars usually glimmer through it. In the most vivid and intense displays, the light may equal, but rarely surpasses, that of the full moon in a cloudless sky. It may give enough light to read by. On such occasions the aurora may be visible to some extent in partial twilight.

Though in high latitudes aurora occurs any time in the dark hours it is probably most frequent in the late evening hours from 9 p.m. till midnight & just after; it is more frequent in the equinoctial months than at other times and has a well-defined 11-year period of activity following the cycle of solar activity. A maximum of activity occurred in 1948, and the interval from maximum to minimum activity usually occupies a period of about 6 to 7 years. In high latitudes this cycle of activity is reflected more in the intensity and vividness of the displays than in the frequency of occurrence. Though really outstanding displays tend to occur around the years of maximum activity they may occur at any time of the cycle, except perhaps near the absolute minimum. 20

In addition to this 11-year cycle of activity active periods tend to recur at intervals of 27 days, see Magnetic Storms.

Northern hemisphere.—Aurora Borealis occurs most frequently along a zone which forms an approximate oval, of average radius 23° , with centre in the extreme north-west of Greenland. This zone of maximum frequency crosses Hudson Bay and the Labrador coast in about lat. 58° N. It runs south of Cape Farewell and along the south coast of Iceland. It lies just north of North Cape, touches the extreme north of Novaya Zemlya, skirts Cape Chelyuskin and then eastward just north of Wrangel Island into the north of Alaska. Along this zone aurora of some kind can probably be seen every suitable night when the sky is clear; 250 miles outside this maximum zone to the southward the auroral frequency decreases sharply to about 70-100 nights a year on the average, and to 20-25 nights 500 miles south of the maximum zone. Inside the maximum zone the geographical distribution of frequency is not so well established but it probably falls off more gradually than it does outside. 35

On the zone of maximum frequency itself aurora appears as frequently to the south of the zenith as to the north, but with increasing distance outside the zone the appearances concentrate more into the northern sky; the reverse is true inside the zone. 40

Southern hemisphere.—The frequency and distribution of Aurora Australis is not fully known. It is probable that it is more frequently seen at sea between about long. 50° E. and 175° W. than in other longitudes. Very fine displays have occasionally been seen in Australia and on passages across the Southern Ocean. There is nevertheless a general impression that aurora is less frequent in the southern than in the northern hemisphere. This is probably to be accounted for by the fact that, apart from whaling and exploring expeditions, ships' tracks in general do not extend to such high latitudes as in the northern hemisphere. 45

The zone of maximum auroral frequency is roughly annular and is near the circumference of a circle of radius about 1,080 miles, centred in about lat. 75° S., long 129° E. The frequency falls off both outside and inside this zone. A large part of the zone is within the continent of Antarctica. 55

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(21) **Magnetic storms.**—Magnetic storms vary in intensity and frequency with the sunspot cycle, similarly to aurorae. An intense magnetic storm is always accompanied by a bright and active aurora. The deeply coloured aurorae, showing more pronounced red and green, 5 and sometimes also blue and violet, tints, are invariably connected with magnetic storms of considerable or great intensity. Such a storm will produce simultaneous aurora in both hemispheres. In the greatest storms aurorae in some form may be visible down to about 20° north latitude in certain parts of the oceans, especially 10 between the meridians of 30° W. and 140° W. Magnetic storms vary greatly in duration from a few minutes to several days; they are generally more intense during the hours of darkness. Long-continued storms usually show great fluctuations with periods of complete or partial quiescence. Similarly the associated aurora fluctuates between 15 active and quiescent forms.

The origin of magnetic storms and aurorae is not yet fully understood, but they are intimately connected with the state of a local area of the sun. As the same part of the sun is again presented to the earth after an interval of about 27 days, a magnetic storm and aurora may 20 recur at this time, usually in less intense form.

A ship's compass may tend to deviate during the progress of a considerable magnetic storm. In more intense storms the compass needle may oscillate 1° or more either side of its normal position. Such oscillation may persist for as long as 10 or 20 minutes before 25 dying out. Further oscillation may occur after a period of quiescence. Deviations of 2° or more are rare, but during the great magnetic storm and aurora of January 25th, 1938, one of 4° to the eastward was observed off the Portuguese coast. During a severe magnetic storm the compass may be deflected continually in one direction to 30 the extent of about half a degree for some hours. When bright aurora is seen, especially if it is of the more deeply coloured and rapidly moving kind, and particularly when it is observed in low latitudes, the possibility of deflections of the compass should always be borne in mind.

35 During a considerable magnetic storm freak radio reception may occur on certain waves and short-wave transmission may fade to complete silence. Beam radio communication, especially in a west-east or east-west direction, may be interrupted. Such conditions may last in some degree over a period of several days, at times when 40 the sun is usually active. Short-wave fading also occurs occasionally from a different form of solar disturbance known as a "bright eruption," when this is very intense. On the average such fading begins about 7 minutes after occurrence of the bright eruption and may last 5 or 10 minutes, gradually returning to normal within a 45 period of 40 to 45 minutes. These fadings are confined to the daylight hemisphere of the earth, while the magnetic storm fadings may occur by day or by night.

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(All the following articles do not apply to every Pilot, but articles 50 applicable to this Pilot will be referred to in the Climate and Weather Section in Chapter I.)

(1) **Lows.**—A low, or depression, appears on a synoptic chart as a series of isobars roughly circular or oval in shape, surrounding an area of low pressure. It is a main feature of the weather at sea in

middle latitudes where it is responsible for most of the occasions of strong winds and unsettled weather, though not all depressions are accompanied by strong winds.

Lows vary very much in size and depth; one may be only a hundred miles in diameter and another over two thousand miles; some are deeper than others, a deep low being one in which the pressure is very much lower near the centre than on the outside whereas, on the other hand, a shallow depression is one where the pressure, although low near the centre, is not very much lower than in the surrounding districts. 5

Note.—The bracketed equivalents hereunder refer to the Southern Hemisphere. 10

In the northern (southern) hemisphere the winds blow round an area of low pressure in an anti-clockwise (clockwise) direction; there is also a slight inclination across the isobars towards the lower pressure. Thus the well-known rule for the northern (southern) hemisphere is 15 that when an observer faces the wind the direction of the lowest pressure is from 8 to 12 points to his right (left). The strength of the wind is in all instances closely related to the steepness of the barometric gradient or distance apart of the isobars; the closer the isobars the stronger the wind. 20

Lows may move in almost any direction, though most often towards north-east (south-east) or east, at a speed of anything between 10 and 40 knots, though occasionally as much as 60, during the middle and most active stage of their existence; they slow down when filling up (see "occlusion" below). The life of a low is in the region of 4 to 25 6 days.

There are usually one or more fronts, probably radiating from the centre, in the area covered by a low; each front on a synoptic chart represents a belt of relatively bad weather, accompanied by a veer (backing) of wind, which marks the change from the weathlier characteristic of one air mass to that of another. During the first two or three days of its life a low has a warm and a cold front, the area between the two being known as a warm sector because the air has come from a warmer locality than that which is outside the sector (see Fig. 1a). Warm air is lighter than cold air and it rises over the cold air ahead of 35 the warm front as shown in Fig. 1b; this causes condensation of the water vapour in the warm air, forming at first cloud and later drizzle or continuous steady rain. The cloud spreads out ahead of the warm front, and the highest cloud, cirrus or mares' tails, is often about 500 miles ahead. At the rear boundary of the warm sector, known 40 as the "cold front," the cold air is pushing under the warm air forcing the latter to ascend rapidly; this process is sometimes violent enough to produce squalls. The rapid ascent of the warm air causes the moisture to condense in the form of cumulo-nimbus clouds (shower clouds), from which heavy showers may fall. The cold front gradually 45 overtakes the warm front so that the warm sector is eventually lifted up from the earth's surface. When this has occurred the low is said to be occluded, and the warm and cold fronts have merged into the third type of front known as an "occlusion" (see Figs. 2a and b). When a low has become occluded, it usually decreases in intensity 50 and rate of travel, and gradually fills up. On the other hand, a low which has a marked warm sector is likely to be deepening, the winds associated with it may increase in force and its rate of travel may increase. Lows are usually travelling in a direction approximately parallel to the isobars (and in the direction of the wind) in the warm 55 sector.

The approach of a low is indicated by a falling barometer. In the northern (southern) hemisphere, if the low is approaching from westward and passing northward (southward) of the ship, clouds appear on the western horizon, the wind shifts to a south-westerly (north-west westerly) or southerly (northerly) direction and freshens, the cloud layer gradually lowers, and finally drizzle, rain or snow begins. If the low is not occluded, after a period of continuous rain or snow there is a veer (backing) of wind at the warm front, a rise of temperature and diminution or cessation of rain (or snow) in the warm sector, the 10 visibility being usually moderate and the sky overcast with low cloud. The passage of the cold front is marked by the approach from westward of a thick bank of cloud (which however cannot often be seen because of the customary low overcast sky in the warm sector), a further veer (backing) of wind to west or north-west (south-west), sometimes with 15 a sudden squall, rising pressure, a fall of temperature, squally showers of rain, hail or snow, and improved visibility (except during showers). The squally showery weather with a further veer (backing) of wind and drop in temperature may recur while the low recedes owing to the passage of another cold front or occlusion. If the low is occluded, 20 the occlusion is preceded by the cloud of the warm front; there may be a period of continuous rain mainly in front of and at the line of occlusion, or a shorter period of heavy rain mainly behind the occlusion, according as the air in front of the occlusion is colder or warmer than that behind it. There may be a sudden veer (backing) of wind at the 25 occlusion.

Often another low follows 12 to 24 hours later, in which event the barometer begins to fall again and the wind backs towards south-west (north-west), or even south (north).

If a low travelling eastward or north-eastward (south-eastward) is 30 passing southward (northward) of the ship, the winds in front of it are easterly and they back (veer) through north-east (south-east) to north (south) or north-west (south-west); changes of direction are not likely to be so sudden as on the southern (northern) side of the low. In the rain area there is often a long period of continuous rain 35 and unpleasant thick weather with low cloud. In winter in the colder regions the weather is cold and raw and precipitation is often in the form of snow.

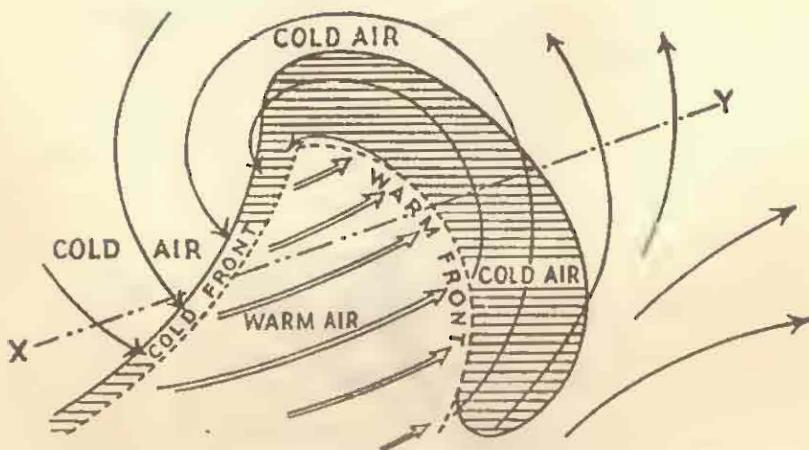
Near the region of lowest pressure, lulls are sometimes experienced, but sudden changes are likely, and in a deep low the wind may increase 40 in strength very rapidly, perhaps to gale force as the barometer begins to rise.

Sometimes in the air circulation of a large low, usually on the equatorial side and often on a cold front, a secondary depression develops, travelling in the same direction as the primary but usually 45 more rapidly. The secondary often deepens while the original low decreases in intensity. In the region between the primary and the secondary depressions, the winds are not as a rule strong; but on the further side of the secondary, usually the southern (northern) side, winds are likely to be strong and they may reach gale force. Thus 50 the development of a secondary may cause gales at a greater distance from the primary than anticipated, while there may be only light winds where gales were expected.

The above is a brief general description of lows and the associated weather in temperate or middle latitudes of the northern (southern) 55 hemisphere. It must be emphasised, however, that individual lows in different localities differ considerably from one another, according

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Fig. 1a.



Plan of a developed depression.

The double lines show the flow of the warm air, and the single lines the flow of the cold air.
The shading shows the areas where rain (or snow) is most probable.
Width of rain belt ahead of warm front is generally between 100 and 200 miles.

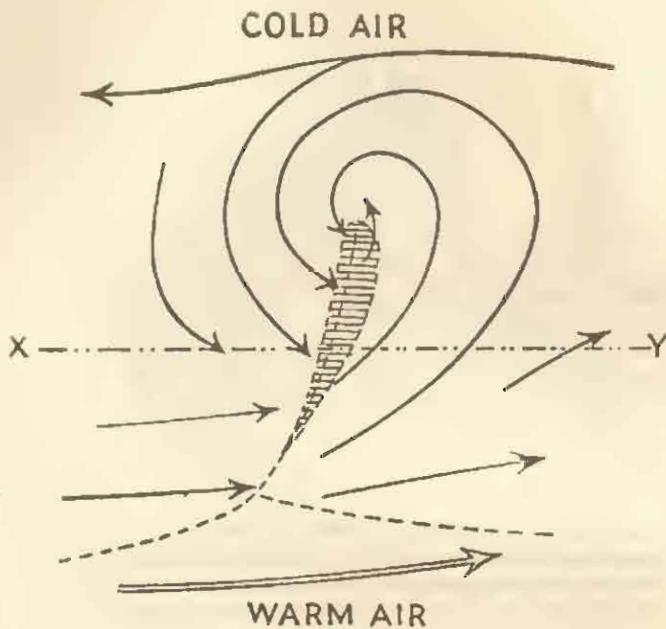
Fig. 1b



Vertical section of the depression along the line XY.

(See over page.)

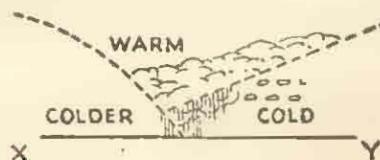
Fig. 2a.



Plan of an occluded depression.

The shading shows where rain (or snow) may be expected near the occlusion.

Fig. 2b.

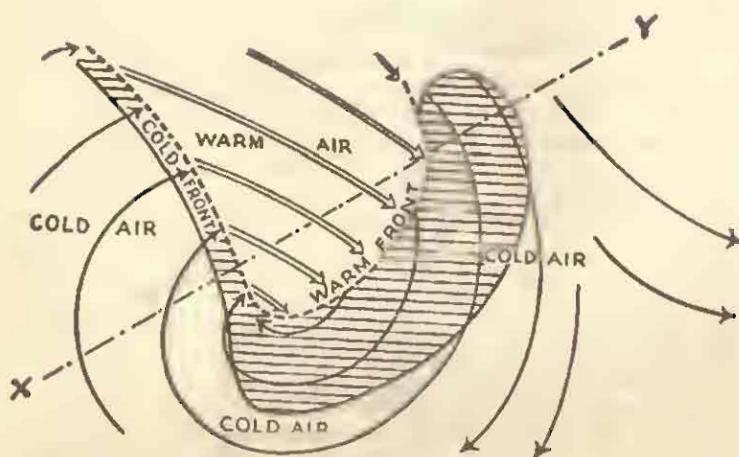


Vertical section of an occlusion of the cold front type.

The air in front of the occlusion is warmer than the air behind it,

SOUTHERN HEMISPHERE

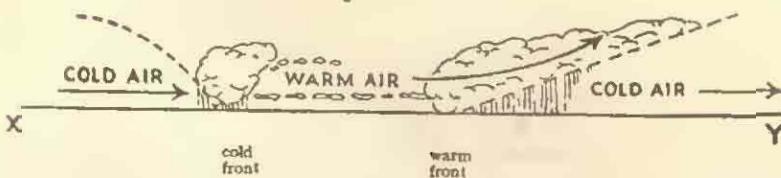
Fig. 1a.



Plan of a developed depression.

The double lines show the flow of the warm air, and the single lines the flow of the cold air.
The shading shows the area where rain (or snow) is most probable.
Width of rain belt ahead of warm front is generally between 100 and 200 miles.

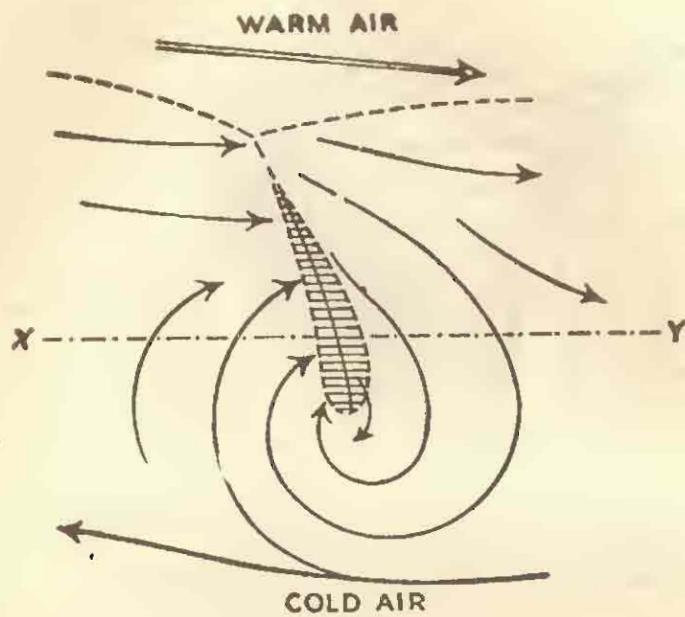
Fig. 1b.



Vertical section of the depression along the line XY.

(See over page.)

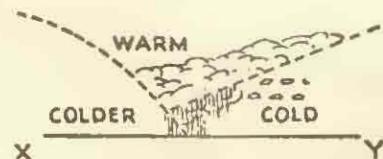
Fig. 2a.



Plan of an occluded depression.

The shading shows the region where rain (or snow) may be expected near the occlusion

Fig. 2b.



Vertical section of an occlusion of the cold front type.

The air in front of the occlusion is warmer than the air behind it.

to the characteristics (especially the temperature and humidity) of the air currents of which they are composed, and the nature of the surface over which they are travelling.

(2) **Tropical revolving storms.**—*Practical rules for avoiding them.*—These storms are so named because the wind blows round an area in which the lowest pressure is at the centre. The direction of rotation is anti-clockwise in the northern hemisphere and clockwise in the southern hemisphere. The wind does not revolve round the centre of low pressure in concentric circles but has a spiral movement inwards, towards the centre of the storm field. 5

A tropical storm is not so extensive as the depression of higher latitudes but, within 75 miles or so of the centre, the wind is often far more violent, and the high and confused seas near the centre may cause considerable damage to large and well-found ships, while small vessels (for example, destroyers) have foundered. The danger is still greater 15 when ships are caught in restricted waters without adequate room to manœuvre. Within 5 to 10 miles of the centre the wind is light or moderate and variable, the sky is clear or partially so, and there is a beavy, sometimes mountainous, confused swell; this area is known as the "eye" of the storm. After passing through the relatively windless 20 centre of the storm the wind will suddenly, and with great violence, commence to blow from a direction almost opposite to that experienced on the other side of the windless centre. Due to torrential rain and sheets of almost continuous spray, visibility near the storm centre (but outside the "eye") is almost nil. 25

Every ship navigating in an area subject to tropical storms during the season of their occurrence should be constantly on the alert for any sign of their approach, so that steps can be taken to avoid the danger zone while there is still time and sea-room.

Localities, season, and average frequency.—Tropical storms occur for 30 the most part on the western side of the oceans, though they are also experienced in the Bay of Bengal, off the north-west coast of Australia, and off the west coast of Central America. They are unknown in the South Atlantic. They are given various names according to the part of the World in which they occur. 35

Western North Atlantic	
Eastern North Pacific	}--hurricanes
South Pacific	
Western North Pacific	--typhoons
Indian Ocean	
Bay of Bengal	}--cyclones
Arabian Sea	
North-west Australia	--willy-willies

They are most frequent during the late summer and early autumn of their hemisphere; they are comparatively rare in the southern 45 hemisphere from mid-May to November, and in the northern hemisphere from mid-November to mid-June. In the Arabian Sea, however, storms are most likely to occur at the change of the monsoon, i.e., October-November, and May-June, though they average only one or two a year. Out-of-season storms occur from time to time, particularly in the western North Pacific where no month is entirely safe, and in the Indian Ocean where one is reported south of the Equator perhaps once in two years outside the usual season. The following table shows approximately the average number of severe tropical storms recorded 50

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per annum, from statistics taken over several years for the various areas:—

	West Indies	5
5	Western North Pacific	25
	South Pacific	3
	Southern Indian Ocean	6
	Bay of Bengal	2
	Arabian Sea	1
	Eastern North Pacific	3
10	West Coast of Australia	1

Variations in any one year amounting to 50% above or below the average are not unusual. Some of the figures quoted are probably an underestimate since in the less-frequented parts of the world many storms must escape detection.

15 *Origin, movement and extent.*—Tropical storms originate as a general rule in the doldrums, between the parallels of 7° and 15° of latitude; those which affect the western part of the Pacific, South Indian and North Atlantic Oceans are first reported in the western third of those oceans, though there are exceptions such as in the North Atlantic 20 during August and September where an occasional storm is known to begin near the Cape Verde islands. In the northern hemisphere they move off in a direction between 275° and 350°, though most often within 30° of due west. When in a latitude of 25° or so they usually recurve away from the equator and, by the time they have reached 25 the 30th parallel, the track (or path as it is more usually called) is north-easterly. In the southern hemisphere they move off in a WSW.-to SSW. direction (usually the former), recurve at about 15° to 20° S., and thereafter adopt a south-easterly path. In either hemisphere 30 many storms do not recurve but continue in a west-north-westerly (or west-south-westerly) direction until they reach the mainland where they quickly die.

The speed of advance of these storms is usually about 10 knots in their early stages, increasing a little with latitude; it seldom exceeds 15 knots before recurving, but after recurving 20 to 25 knots is usual 35 though speeds of 40 knots or even more have been known.

Occasionally storms move erratically, the path turning towards the equator, or adopting an easterly component in a low latitude, or even making a complete loop, but on these occasions their speed of advance is low, usually less than 10 knots, while the unusual path is being 40 followed.

The extent of the storm area varies considerably with individual storms but, generally speaking, winds of force 7 or more are improbable at more than 200 miles (especially on the equatorial side of the storm area) and force 8 is unlikely to be exceeded at more than 100 miles, 45 from the storm centre, if in a latitude of less than 20°. Thereafter the radius increases with latitude so that these distances are nearly doubled on reaching the 35th parallel, but the intensity diminishes near the centre. Hurricane force winds are likely within 75 miles of the storm centre in the tropics, and gusts exceeding 150 knots have been 50 reported in a few instances within 50 miles or so (except in the eye of the storm). The aim of the mariner should therefore be to remain as far as possible from the centre of the storm system.

55 *Warning of existence or approach.*—In most instances, warning of the position, intensity and probable movement of a storm is given by radio at frequent intervals by meteorological authorities ashore. (See Admiralty List of Radio Signals, Volume III.) Sometimes, however,

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there is insufficient evidence available for an accurate warning or even a general warning to be given and ships must then be guided by their own observations. Of the following indications of the proximity of a tropical storm, the first is by far the most reliable within 20° or so of the equator; it should be borne in mind, however, that very little 5 warning may be expected of the approach of an intense storm of unusually small diameter.

(a) If the corrected barometer reading is 3 mb. or more below the mean for the time of year, as shown in a climatic atlas or on the appropriate chartlets in the meteorological text of this Pilot, 10 suspicion should be aroused and action taken to meet any development, such as raising steam in any available additional boilers, &c. It should be noted, however, that the barometer reading must be corrected not only for height, latitude, temperature and index error (if mercurial), or for height and index error if aneroid, but also for 15 diurnal variation, the amount of which is given for each hour of the day in the Air Ministry climatic atlases and in the meteorological text of this Pilot. If the reading thus corrected is 5 mb. or more below normal, it is time to take avoiding action for there can be little doubt that a tropical storm is in the vicinity. According to an 20 analysis of observations in the Western Pacific the centre of the storm is then probably not more than 200 miles away. At this distance, at any rate in the China Sea vicinity, the wind has usually increased to about force 6.

When proceeding through an area liable to be visited by these 25 storms it is desirable to take hourly readings of the barometer.

(b) An appreciable change in the direction and/or strength of the wind.

(c) A swell is sometimes evident, proceeding from a direction that approximates to the bearing of the centre. If ahead of the storm this 30 indication may be apparent before the barometer begins to fall.

(d) Extensive cirrus cloud followed, as the storm becomes closer, by much alto-stratus cloud and subsequently fracto-cumulus or "scud."

(e) In addition there is the warning that can be given by Radar. 35 The existence of moderate or heavy rain can usually, under favourable meteorological conditions, be detected at the extreme range of centrimetric radar, such as is normally used for navigational purposes afloat, depending on the vertical extent of the rainfall. Subrefraction might decrease and superrefraction increase this range as with 40 any other target. Although moderate or heavy rain does not fall symmetrically all round a storm, it is continuous for at least 50 miles in a broad sector extending from the "eye" of the storm where there is a circular area of relatively light winds and clear or partially clear sky. By the time radar evidence of the exact position of the storm 45 is available, the ship will probably be already in fairly high seas and experiencing winds of force 9 or 10. There should still be time, however, for her to avoid the centre of the storm.

Note.—In accordance with Article 35 of the International Convention for Safety of Life at sea it is the duty of every ship who suspects 50 the presence or formation of a tropical revolving storm immediately to inform other vessels and shore authorities with all the means at her disposal. Weather reports should be made by radio at frequent intervals giving as much information as possible, especially corrected (not for diurnal variation as in (a) above) barometer readings. If 55 barometer readings are uncorrected this fact should be stated in the signal.

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Information required by the seaman before deciding upon action to be taken.—To decide on the best course of action if a storm is suspected to be in the vicinity, the mariner requires to know:—

- 5 (a) the bearing of the centre of the storm;
- (b) the semicircle in which the ship is situated;
- (c) the path of the storm.

If an observer faces the wind, the centre of the storm will be from 9 to 11 points on his right-hand side in the northern hemisphere when the storm is about 200 miles away, i.e., when the barometer has fallen 10 about 5 millibars and the wind has increased to force 6 or thereabouts; as a rule the nearer one is to the centre the more nearly does the angular displacement of the wind approach 8 points. A further check on the bearing of the centre may often be obtained by noting the direction from which the swell is coming. The swell travels approximately directly outward from the storm centre.

The semicircle in which the ship is situated can be determined by taking two such bearings with an interval of from two to three hours between observations, provided that allowance is made for the ship's movement. It can be assumed that the storm is not travelling towards 20 the equator; and, if in a lower latitude than 20° , its path is most unlikely to have an easterly component; and, on the rare occasions when neither of these statements applies, the storm is moving very slowly. (Exceptions to this are most likely in the South Pacific, where occasional storms often move off on a course almost due south developing 25 an easterly component at a latitude of about 15° , and in the western North Pacific where some of the out-of-season storms may recurve at an early stage.)

In a moving ship associated with a storm progressing at an unknown rate, it is very difficult to estimate from an apparent shift of wind the 30 direction and speed of the storm's motion relative to the ship. The surest method of ascertaining the true shift of wind and thereby finding out in which semicircle the vessel is situated, is to stop the ship during the period between the two bearings. If in either hemisphere, these observations show that the wind is veering, the ship is in the right-hand 35 semicircle; if the wind is backing she is in the left-hand semicircle; and if the wind remains steady in direction then the vessel is in the direct path of the storm, which is the most dangerous place of all.

The diagram headed "Typical Paths of Tropical Storms" (at the end of this article) illustrates the terms "dangerous semicircle" and 40 "navigable semicircle." The former lies on the side of the path towards the usual direction of recurvature, i.e., the right-hand semicircle in the northern and the left-hand semicircle in the southern hemisphere. It is so called because a sailing or low-powered vessel caught in it may be blown towards the path along which the storm will 45 pass, or the storm may recurve and the centre pass over her. The navigable semicircle is that which lies on the other side of the path. A ship situated within this semicircle will tend to be blown away from the storm centre, and the recurvature of the storm will increase her distance from the centre.

50 *Practical rules for avoiding tropical storms.*—In whatever situation a ship may find herself, the matter of vital importance is to avoid passing within 50 miles or so of the centre of the storm; it is preferable to keep outside a radius of 200 miles or more, because at this distance the wind does not often exceed force 7 (and is generally not more than 55 force 6), and freedom of manoeuvre is maintained. If a ship has at least 20 knots at her disposal, and shapes a course that will take her

most rapidly away from the storm before the wind has increased above the point at which her movement becomes restricted, it is seldom that she will come to any harm.

Sometimes a tropical storm moves so slowly that a vessel, if ahead of it, can easily outpace it or, if astern of it, can overtake it. Since, however, she is unlikely to feel seriously the effects of a storm so long as the barometer does not fall more than 5 mb. (corrected for diurnal variation) below the normal, it is recommended that frequent readings should be made if the presence of a storm in the vicinity is suspected or known, and that the vessel should continue on her course until the 10 barometer has fallen 5 mb., or the wind has increased to force 6 when the barometer has fallen at least 3 mb. If and when either of these events occurs, she should act as recommended in the following paragraphs, until the barometer has risen above the limit just given, and the wind has decreased below force 6. Should it be certain, however, 16 that the vessel is behind the storm, or in the navigable semicircle, it will evidently be sufficient to alter course away from the centre.

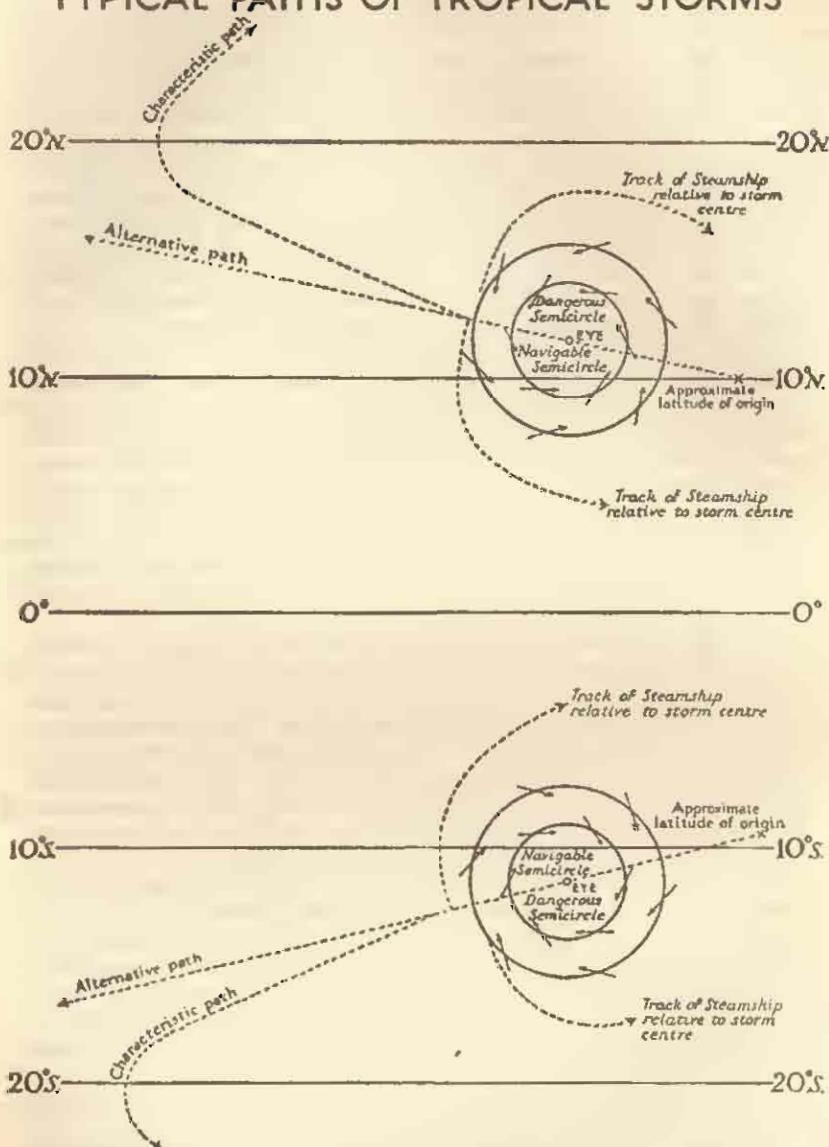
In the northern hemisphere.—(a) If the wind is veering, the ship must be in the dangerous semicircle. A power-driven vessel should proceed with all available speed with the wind 1 to 4 points (de- 20 pending upon her speed) on the starboard bow, and should subsequently haul round to starboard as the wind veers, thereby tracing a course relative to the storm as shown by the pecked line in the diagram. If a power vessel has insufficient room to make much headway when in the dangerous semicircle she should heave to in the 25 most comfortable position relative to the wind, preferably with the wind on her starboard bow so that she is heading away from the centre of the storm.

(b) If the wind remains steady in direction, or if it backs, so that the ship seems to be nearly in the path (it is sometimes difficult to determine satisfactorily if indeed the ship is nearly in the path, particularly if in the dangerous semicircle, because the wind does not always behave according to rule) or in the navigable semicircle respectively, a power vessel should bring the wind well on the starboard quarter and proceed with all available speed, subsequently altering course to 35 port as the wind backs, thus tracing a course relative to the storm as shown by the pecked line in the diagram.

In the southern hemisphere.—(a) If the wind is backing, the ship must be in the dangerous semicircle. A power-driven vessel should proceed with all available speed with the wind 1 to 4 points (de- 40 pending upon her speed) on the port bow, and should subsequently haul round to port as the wind backs, thereby tracing a course relative to the storm, as shown by the pecked line in the diagram. If a power vessel has insufficient room to make such headway she should heave-to in the most comfortable position relative to the 45 wind, preferably with the wind on her port bow so that she is heading away from the centre of the storm.

(b) If the wind remains steady in direction, or if it veers, so that the ship seems to be nearly in the path (it is sometimes difficult to determine satisfactorily if indeed the ship is nearly in the path, 50 particularly if in the dangerous semicircle, because the wind does not always behave according to rule) or in the navigable semicircle respectively, a power vessel should bring the wind well on the port quarter and proceed with all available speed, subsequently altering course to starboard as the wind veers, thus tracing a course relative 55 to the storm as shown by the pecked line in the diagram.

TYPICAL PATHS OF TROPICAL STORMS



Note.—In this diagram the isobars are shown as concentric circles about the eye; in practice this is usually the case within 150 miles or so of the centre. Outside this distance the isobaric form often loses its symmetry and strong winds often extend farther on the polar side than on the equatorial.

If there is insufficient room to run when in the navigable semicircle, and it is not practicable to seek a safe and effective shelter before the storm begins to be felt, a vessel should heave-to in the most comfortable position relative to the wind and sea, bearing in mind the proximity of land.

If a ship finds that she is in the direct path of the storm and has no room to run into the navigable semicircle as directed above, it should be considered, bearing in mind possible recurvature, whether she should endeavour to make her way into the "dangerous" semicircle (where she may at least be better off than remaining in the direct path of the ¹⁰ storm) and continue to steam to windward as fast as she can so as to get as far as possible from the centre.

If in harbour, or at anchor, a seaman should be just as careful as at sea in watching the shifting of the wind and estimating the movement of the storm relative to himself, so that he may consider shifting his ¹⁵ berth with advantage or otherwise act according to circumstances. It is usually preferable, however, to put to sea if this can be done in sufficient time to avoid the worst of the storm. Riding out a tropical storm, the centre of which passes within 50 miles or so, in a harbour or anchorage, even if some shelter is offered, is an extremely unpleasant ²⁰ and hazardous experience, especially if there are other ships in company. Even if berthed alongside, or with special moorings and long bridles in use, a ship cannot feel entirely secure.

Discretion must, of course, be used. In the case of a low-powered or small vessel with, for example, insufficient warning to enable her to ²⁵ gain sufficient distance from the storm by putting out to sea, it will be preferable to remain in a reasonably sheltered harbour. If at sea and warning of an approaching storm is given and there is considered to be insufficient time or sea room to avoid the dangerous part of the storm area, it may be advisable for vessels of this type to seek shelter. ³⁰ In the China Sea, for example, there are so-called typhoon harbours which are listed in the Admiralty Pilot. In all cases, however, the mariner must use seamanship and initiative.

(3) Local modification of the weather near the coast.—The meteorological information given in Chapter I takes little or no account ³⁵ of local peculiarities of wind and weather due to coastal topography. These local effects are often unpredictable, especially where the coast has many deep indentations. Nevertheless, the general character of local topographical effects, in the vicinity of a given position, may sometimes be predicted with the help of the following notes.

- (i) If the coast is bordered by steep cliffs, or if there are high hills or mountains in the hinterland, approximately parallel with the shore, onshore winds which are only slightly inclined to the coastline are usually deflected so as to blow nearly parallel with the coast, and they increase somewhat in speed. ⁴⁵ This effect is particularly noticeable in a long strait not more than a few miles wide, and where the strait narrows there is often a big increase of speed.
- (ii) When the wind is onshore and nearly perpendicular to the coast, and there are high cliffs, there is usually a narrow belt ⁵⁰ of contrary gusty winds close to the coast.
- (iii) An offshore wind is often squally on the lee side of a hilly coast, especially when the wind is much cooler than the sea surface.
- (iv) Land and sea breezes are generally prominent in settled fine ⁵⁵ weather, especially in latitudes lower than 40° S. or N.

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The sea breeze blows from the sea to the land during the daytime, and is generally strongest in the afternoon; it occasionally reaches force 5, and sometimes extends 20 miles or more seaward.

5 The land breeze blows from the land to the sea. It does not usually begin until a few hours after sunset, but may continue for an hour or two after sunrise. It seldom exceeds force 4, and does not usually extend more than 5 miles seaward.

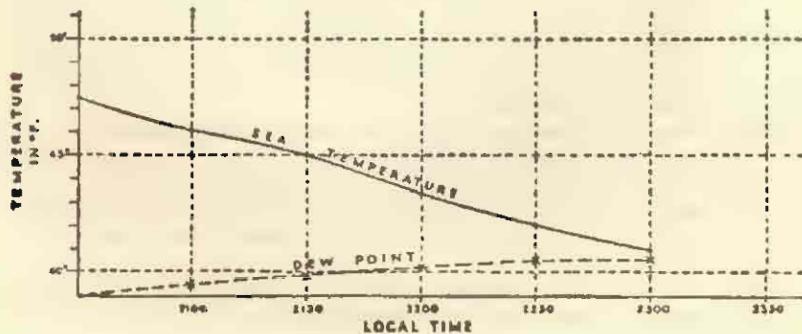
10 (v) When sea fog is general over the open sea, there is nearly always better visibility close to leeward either of a hilly island or promontory, or of any land strongly heated by the sun.

15 (vi) Radiation fog, which may form over land on quiet nights with clear skies, sometimes spreads 10 miles or more seaward. In temperate latitudes it is usually most frequent in autumn and winter.

(4) Forecasting sea fog.—The most frequent type of fog in the open sea is that caused by relatively warm air flowing over a colder sea. Warning of this type of fog may be obtained by frequent observations of air and sea surface temperatures; if the sea temperature falls below the dewpoint of the air, fog is almost a certainty. The following procedure is recommended whenever the temperature of the air is higher than, or about equal to, that of the sea, especially 25 at night when approaching fog cannot be seen until shortly before entering it.

Sea and air (both dry and wet bulb) temperatures should be observed at intervals of about 5 miles and the sea temperature plotted against dewpoint. The dewpoint is obtainable from tables published in 30 various text-books, but at temperatures up to about 60° F. a close enough approximation may be obtained by assuming it to be the same amount below the wet-bulb temperature as the latter is below the dry-bulb temperature; for example, if the dry bulb reads 50° F. and the wet bulb 48°, the dewpoint is about 46°. If the curves of 35 sea temperature and dewpoint converge, fog may be expected by the time at which they coincide.

The figure below represents conditions that might be found by a low-powered ship in about long. 40° W. proceeding westward on the appropriate lanc route for Halifax, Nova Scotia. At 2200 it would 40 become evident that there is a probability of running into fog in about an hour's time, assuming that the sea temperature continues to fall at about the same rate that it has done during the last 1½ hours.

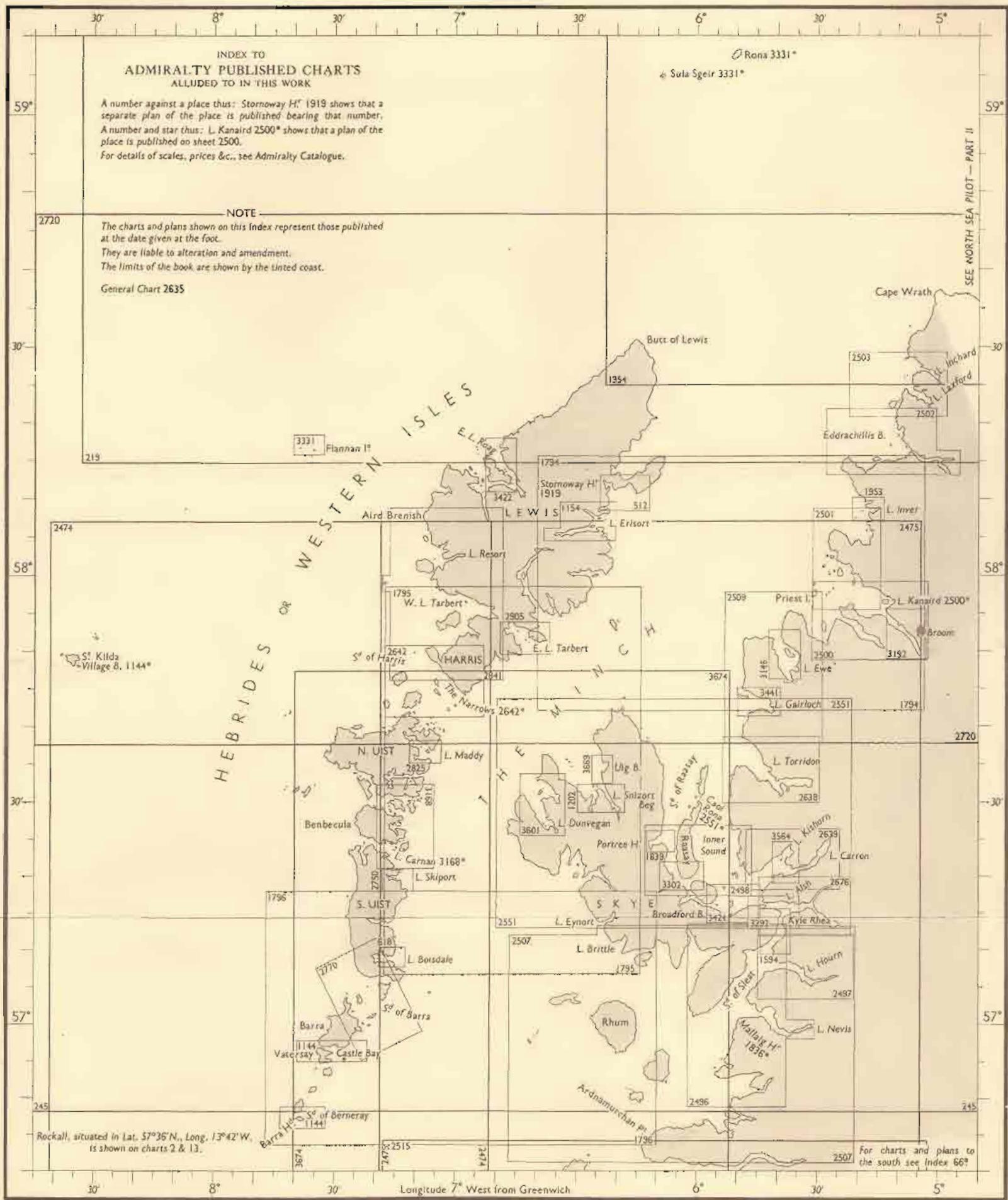


GENERAL METEOROLOGY

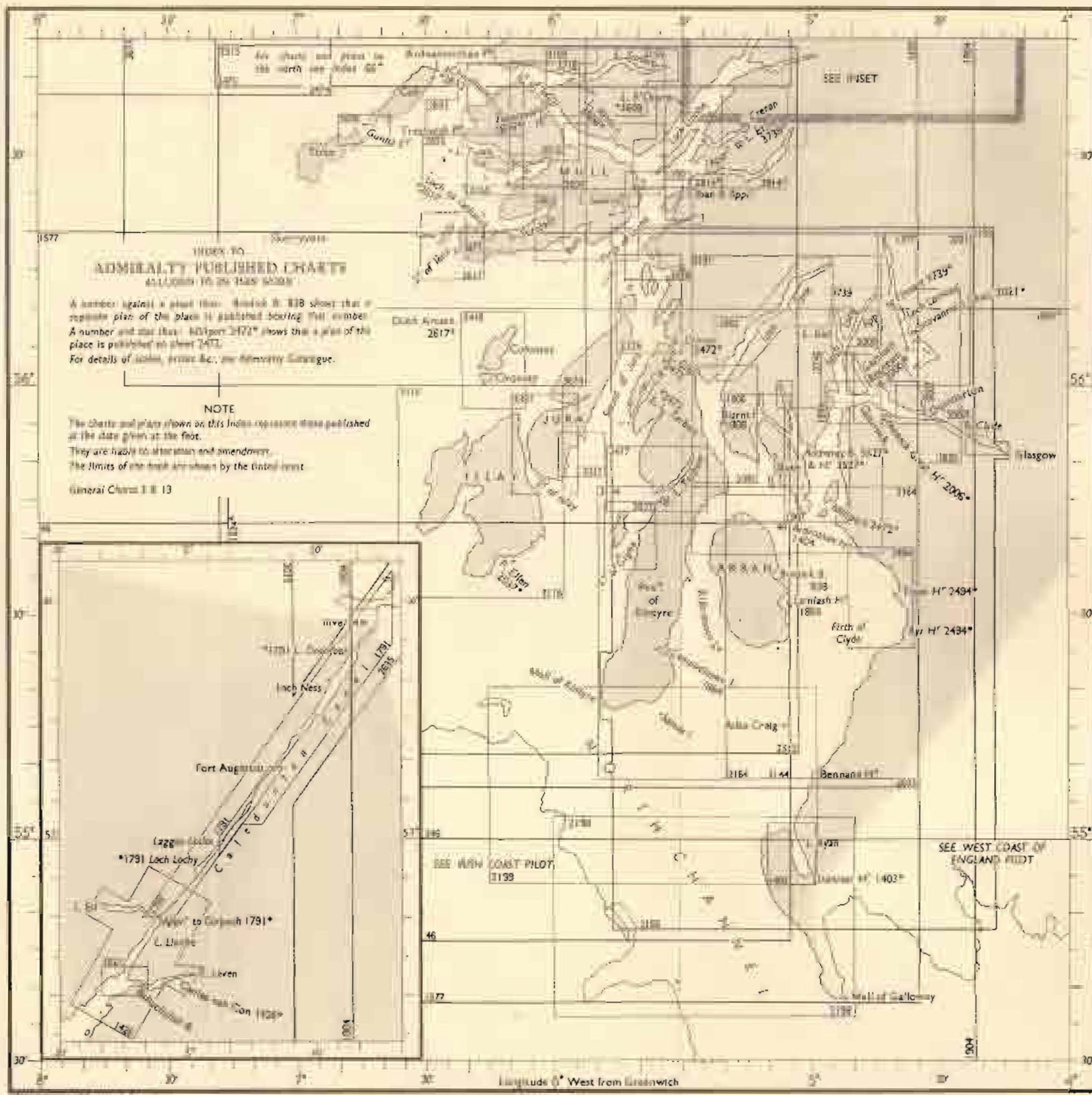
From the appropriate chart of average sea surface temperatures it can be seen where a rapid fall of temperature may be expected, so that if the dewpoint is within 5° or so of the sea temperature when approaching the colder water zone, this will also give a fairly reliable warning of fog.

If it is desirable and practicable to escape from fog, a ship should steer for warmer water which will again be evident from the charted isotherms.

Fog, or very poor visibility, at sea may also occur in snow or heavy rain, or in association with the passage of a warm front or occlusion, 10 or, when within 20 miles or so of land, it may occur as a result of radiation fog extending from the land; in high latitudes in winter, frost smoke may be met near land, when very cold offshore winds are blowing, or near extensive ice. The method described above will not give warning of these fogs, of which frontal fogs, though common in 15 middle latitudes, are neither so extensive nor so persistent in any one locality, and the other fogs mentioned are rarely encountered far from land (or extensive ice).



1515



WEST COAST OF SCOTLAND PILOT

CHAPTER I

GENERAL INFORMATION.—ICE.—CURRENTS.—TIDAL STREAMS.—SIG-
NALS.—SUBMARINE CABLES.—AIR LIGHTS.—LIFE-SAVING.—UNIFORM
SYSTEM OF BUOYAGE.—MEASURED DISTANCES.—COMMUNICATIONS.—
STANDARD AND SUMMER TIMES.—FUEL.—QUARANTINE.—FISHERIES.—
GENERAL DIRECTIONS.—CLIMATE AND WEATHER.

GENERAL INFORMATION.—Scotland, the northern part of the island of Great Britain, lies between the parallels of $54^{\circ} 38'$ and $58^{\circ} 40'$ N. latitude, and the meridians of $1^{\circ} 46'$ and $6^{\circ} 14'$ W. longitude.

Physical features.—The southern part of Scotland, extending 5 between Galloway and Ayr, in the west, and Berwickshire and Haddingtonshire, in the east, is a belt of high ground, known as the Southern Uplands. The mountains are flat-topped, with broad round shoulders and smooth grassy slopes, forming irregular groups. Mount Merrick, 2,764 feet (842^m4) high, situated about 25 miles eastward of 10 Corsewall point, the northern end of Rims of Galloway, is the highest point.

The central plain, lying between the Southern Uplands and the Highlands, is a broad valley, in which there are several more or less abrupt and isolated hills. 15

The Highlands of Scotland lie northward of a line drawn from Helensburgh, at the mouth of the Clyde, to Stonehaven, Kincardineshire, and are a mountainous tract built up largely of crystalline schists and granite rocks. The mountains, which form irregular groups, are massive and generally flat-topped, while there is no great disparity of 20 height among the summits of any individual group. The greatest elevation reached is 4,400 feet (1341^m1) in Beinn Nevis.

The area of Scotland, including its islands, is 29,796 square miles.

The Highlands are intersected from south-west to north-east by the Great Glen, which probably occupies a line of dislocation. 25

The western coast of Scotland presents an almost uninterrupted succession of deep indentations and bold rocky cliffs and headlands. A chain of islands, known as Hebrides or Western isles, stretches almost uninterruptedly parallel with and at short distances from the coast. 30

Firth of Clyde separates Isles of Arran and Bute from Ayrshire, and the counties of Argyll and Dunbarton from that of Renfrew. Arms of the sea, to which the name of loch has been given, penetrate the western coast far inland. The largest of these, southward of Rubh' Ré, are Loch Long, at the head of Firth of Clyde; Loch Fyne and Loch Linnhe, the latter being the south-western approach to the Caledonian canal; Lochs Carron, Torridon, and Gairloch.

The western coast of Scotland, between Rubh' Ré and Loch Inchard, about 40 miles north-eastward, is bold, rocky, and deeply indented by 10 lochs, in which lie numerous islands. The principal lochs on this part of the coast are Lochs Ewe, Broom, and Laxford.

The coast between Loch Inchard and Cape Wrath, about 10 miles north-north-eastward, is cliffy, with a sandy bay near the middle, and, as Cape Wrath is approached, the red cliffs of the promontory are 15 broken into rugged indentations, none of which is sufficiently deep to afford shelter.

The land within Rubh' Ré and Loch Inchard is a succession of mountainous groups, all of which are varied in outline, but that between Loch Inchard and Cape Wrath is not so elevated, and although 20 some mountains rise to elevations of over 1,500 feet ($457^{\text{m}}2$), they are generally smooth in outline and ill-defined.

Hebrides, or Western isles, form two groups, viz., Outer and Inner Hebrides. Outer Hebrides, extending from Barra head to Butt of Lewis, are separated from Inner Hebrides by the Sea of the Hebrides and 25 The Minch.

Outer Hebrides comprise about twenty islands, and a great many islets and rocks.

Inner Hebrides include Islay, Jura, Colonsay, Mull, Tiree, Coll, Small isles, Skye, and numerous smaller isles. These islands shelter 30 the channels between them and the coast of Scotland, so that it is possible to avoid the heavy Atlantic sea during gales for a considerable distance. In fact, for vessels able to go through Crinan canal, joining Loch Fyne to Sound of Jura, smooth water may be secured from Glasgow nearly as far as Stornoway.

35 Owing to the sterile nature of the country of the Highlands and Inner Hebrides, it is sparsely inhabited, and devoted to the breeding of stock, whereas in the Lowlands, where coal, iron, and other minerals exist, there is a large population.

Local magnetic anomaly.—Local magnetic anomaly may be 40 experienced in Kilbrannan sound, in the vicinity of Rockall. In East Loch Roag, in Stornoway harbour, and off Muck and Canna islands; for details see the body of this volume.

Population.—The population of Scotland was 5,096,415 in 1951.

Rivers.—The only river of any consequence on the western coast 45 of Scotland is the Clyde.

Ports.—The principal mercantile ports on the western coast of Scotland are almost all within Firth of Clyde, and though northward of this firth the lochs form magnificent natural harbours, there is but little trade. In many cases the lochs are too deep for convenient 50 anchorage, but, from the general rugged and mountainous nature of the country, they afford some very fine scenery.

ICE.—Ice has been reported at times near the British isles. In July, 1902, some fishermen encountered a piece of ice, about 50 feet ($15^{\text{m}}2$) in length and 2 feet ($0^{\text{m}}6$) high, on the western side of the 55 Island of Mull.

Ice reports.—Codes.—The codes used in transmitting information concerning ice conditions, are given in the Admiralty List of Radio Signals, Volume V.

Ice accumulation on ships.—In certain weather conditions ice accumulating on the hulls and superstructures can be a serious danger 5 to ships.

Ice accumulation may occur from three causes:—

(i) Fog with freezing conditions, including frost "smoke".

(ii) Freezing drizzle or freezing rain.

(iii) Sea spray or sea water breaking over the ship when the air 10 temperature is below the freezing point of sea water (about 28·6°F.).

The weight of ice which can accumulate from causes (i) and (ii) may increase to such an extent on the rigging that it is liable to fall and endanger those on deck. It is, however, small in comparison with 15 the weight of ice accumulating in rough weather with low temperatures, when large amounts of spray and often heavy seas, break over a vessel.

When the air temperature is below the freezing point of sea water and the ship is in heavy seas, considerable amounts of water will freeze 20 on to the superstructure and those parts of the hull which are insufficiently above the water line to escape being frequently washed by the sea. The amounts so frozen to surfaces exposed to the air will rapidly increase with falling air and sea temperature, and might in extreme cases lead to the capsizing of the vessel. 25

The dangerous conditions are those in which gale-force winds last for several days in association with air temperatures of 29°F. or lower. These conditions will normally occur when the wind direction lies between east and west through north, but the important factor is that the direction may be any that will transport sufficiently cold air. The 30 prudent course in these circumstances is, therefore, to steer towards the warmer water, if possible, or to seek shelter, as soon as possible after the gale begins. Some indication of the conditions likely to occur can be obtained by observing the rate of fall of the barometer at the onset of strengthening winds from a cold quarter, together with, if 35 possible, observations of air and sea temperatures.

CURRENTS.—In the North Atlantic Ocean, eastward of about the 46th meridian, the Gulf stream ceases to be a well-defined current. Thence it weakens and widens by fanning out up the eastern side of the Great Bank of Newfoundland. The resulting wide north- 40 easterly and easterly flow is directed across the ocean towards the British Isles and the adjacent European coasts and is known as the North Atlantic current.

The more northerly part of this wide current, carrying water of relatively high temperature, derived from the Gulf stream, flows in a 45 general north-easterly direction past the western coasts of the Hebrides and Shetland isles and thence to the coast of Norway, which it meets in about lat. 62° N.

While the general trend of the surface current in the open oceans is in the direction above stated, the actual current experienced in the 50 region of the North Atlantic current may set in any direction at any time of the year. This is due to the fact that the currents are almost wholly caused by wind, which is very variable at all seasons and may blow in any direction, though winds from westerly directions predominate over the year as a whole. The resultant direction of the 55

North Atlantic current is likely to be the most in evidence after continued south-westerly or westerly winds, or gales from these directions.

The prevailing south-westerly wind causes, on the average, a weak north-east-going current off the west coast of Scotland; as the land is approached the current changes direction and there is, northward of Tiree and Coll, a weak current running in a north-north-easterly direction off the outer side of Outer Hebrides, and through Sea of the Hebrides, Little Minch and North Minch; further southward the current appears to divide and to run in a north-easterly direction into Firth of Lorne, and in a south-easterly direction towards North channel. Northward of Outer Hebrides the current turns eastward and runs, across the northern entrance to North Minch, towards the Orkneys (see chart No. 5057 in the Tidal Stream Atlas).

Off the western coast of Scotland and in the region of the Hebrides, the water movement actually experienced at any time is the resultant of the wind-produced current and the tidal stream.

The current is usually negligible, but may be sufficiently strong to affect navigation during periods of strong and long-continued south-westerly and westerly winds. During periods of strong and long-continued north-easterly and easterly winds the direction of the current may be reversed. Generally speaking, as the directions of the current and the tidal stream are similarly affected by the trend of the coast, the current runs in a direction either with or against the stream, and causes a small increase in the duration and rate of the stream running in its direction, and a corresponding decrease in the stream in the opposite direction.

Currents caused by wind, heavy rain, or melting snow, may have a considerable effect on the tidal streams in the firths and lochs. It must, for instance, be supposed that if water is driven north-eastward into Firth of Lorne, by strong and long-continued south-westerly winds, though the current be inappreciable in the outer part of the firth, its rate increases as the fairway narrows, so that there is an appreciable in-going current in Lynns of Lorne and Morvern and in Loch Linnhe; no definite information is available regarding currents of this nature. When the snow is melting in the spring, and during and after long periods of heavy rain, out-going currents, which may be of considerable strength, run in the lochs, and it is evident that the strength of such a current varies with the drainage area of the loch, its width, and the width of its entrance. In wide lochs, with wide entrances and relatively small drainage areas, such as Loch na Keal in the western part of Mull, the current is weak and of little importance, but in long narrow lochs with large drainage areas, such as Lochs Linnhe and Eil, it may be so strong that the duration and rate of the out-going tidal stream are naturally increased, and the in-going stream correspondingly reduced, or, in extreme cases, the stream may run continuously outwards; in the narrow entrances to lochs, such as Caolas Mhic Phadraig at the entrance to Loch Leven, and in the narrow channels between lochs, such as Corran narrows, where the tidal streams run very strongly, there is, however, probably always some in-going stream. When describing the tidal streams in lochs where there may be a strong out-going current attention is directed to these remarks.

TIDAL STREAMS.—Where time references are given in the Tidal Stream information [e.g. The east-going stream begins —0300 Stromness (—0450 Dover)], they are always given in four-figure groups, in

which the first two figures are hours and the last two are minutes; the references are to the nearest five minutes.

References preceded by a minus (—) sign are intervals before high water; those preceded by a plus (+) sign are intervals after high water.

The second time reference to Dover, in brackets, is only given in the area covered by the charts in the Atlas of Tides and Tidal streams, British Islands and Adjacent Waters.

There are certainly streams of perceptible strength out to, and perhaps beyond, the 100 fathoms line westward of the British islands, but the information available regarding them is fragmentary. The 10 streams at sea westward of Ireland have been inferred from observations obtained in the approach to the English channel and westward of the southern islands of Outer Hebrides (*see page 311*); at the latter position, in $57^{\circ} 00' N.$, $8^{\circ} 53' W.$, the stream is more or less rotatory clockwise; it is weakest, spring rate 0·3 knot in a direction about 15° 295° , +0220 Dover; strongest, spring rate 0·7 knot in a direction 025° , —0610 Dover; weakest, spring rate 0·5 knot in a direction about 150° , —0300 Dover, and strongest, spring rate 0·7 knot in a direction 215° , —0100 Dover. About 200 miles farther northward, at a position in $60^{\circ} 20' N.$, $8^{\circ} 54' W.$, the stream is also more or less rotatory clockwise; 20 it is weakest, spring rate 0·2 knot in a north-north-westerly direction, —0450 Dover; strongest, spring rate 0·6 knot, in a direction 050° , —0150 Dover, weakest, spring rate 0·3 knot in a south-south-easterly direction, +0210 Dover, and strongest, spring rate 0·8 knot in a direction 230° , +0435 Dover. The times at which the streams at these 25 stations are strongest, in north-easterly and south-westerly directions, differ by about $4\frac{1}{2}$ hours; interpolation between these weak rotatory streams is of no practical value, and though, westward of Scotland, the streams southward of about lat. $58^{\circ} N.$ may be assumed to run about as at a position in $57^{\circ} 00' N.$, $8^{\circ} 53' W.$, between that latitude and 30 about lat. $60^{\circ} N.$ they must be considered unknown (*see also page 310*).

Between Tory island and the southern point of Outer Hebrides the streams are also weak and more or less rotatory clockwise, but become gradually stronger and more rectilinear nearer the Sea of the Hebrides and the entrance to North channel. In very general terms, the streams 35 near the western coast of Scotland may be divided into two sections: southward of Tiree and Mull the streams run about as in North channel; in general northerly directions during the North channel north-west-going stream (which begins H.W. Dover), and in general southerly directions during the North channel south-east-going stream (which 40 begins +0600 Dover); farther northward the streams run in about the direction of the coast and north-going and south-going streams meet and separate in localities which vary from hour to hour.

The streams off the coast are not, as a rule, of any great strength, but in certain channels between the islands, and between the islands 45 and the mainland, their rates are extraordinarily great, up to as much as about 10 knots at springs. Further, near the salient points of the coast, and in the neighbourhood of the many islets and dangers, where the depths change suddenly, the streams run strongly, with eddies of great strength and very violent and heavy races and oversalls. 50

The streams off the western coast of Scotland are shown on the charts in the West Coast of Scotland Pocket Atlas of Tidal Streams, and in the Atlas of Tides and Tidal Streams of the British Islands, 1946 Edition.

The streams are referred to according to the directions towards 55 which they run, but may be called in-going and out-going in the lochs.

SIGNALS.—Storm signals.—The display of a visual gale warning signal indicates that a gale is expected within twelve hours, or is already in progress, in the coastal sea area on the landward boundary of which the station flying the cone is situated. Thus a cone hoisted at Hartland would indicate a gale warning in operation for the sea area Lundy. (In this context the term "gale" refers to a mean wind of Force 8 or above, or a wind gusting to Force 9, in the Beaufort Scale.)

The cone signal will be lowered when the wind is below gale force 10 and a renewal of gale-force winds is not expected within six hours, so that the cone signal is left flying during a temporary abatement of a gale if a renewal is expected.

The coastal sea areas are those, designated for use in the preparation of weather forecasts for shipping and for dissemination through the medium of B.B.C. and G.P.O. coastal radio station broadcasts, which abut the coasts of the United Kingdom.

The North cone (point upwards) is hoisted for gales from any point north of the east—west line.

The South cone (point downwards) is hoisted for gales from any point south of the east—west line.

When the direction of the gale is expected to change from the northern side to the southern side of the east—west line, the north cone is lowered and the south cone hoisted. Conversely, when the direction of the gale is expected to change from the southern to the northern side of the east—west line the cone is changed accordingly.

Inshore mariners, for whose benefit the visual gale warning service is primarily intended, are advised that a displayed cone signal now relates solely to the operation of a local sea area gale warning. Information given by these cone signals is to be regarded only as supplementary to the more detailed weather bulletins for shipping which are regularly broadcast from B.B.C. and G.P.O. radio transmitters.

Full information about the distribution of storm signals and other meteorological information by radio is given in the "Admiralty List of Radio Signals." Details of Distress signals are given in the Admiralty List of Lights.

Storm signals are displayed, by day, at the following stations in the area covered by this volume:—Mull of Galloway lighthouse, Portpatrick, Corsewall Point lighthouse, Ayr, Ardrossan, Mull of Kintyre, Campbeltown, Kildonan, Rubins of Islay lighthouse, Rubha a' Mhàil lighthouse, Eilean Glas, Stornoway, Rubh' Ré lighthouse, Point of Stoer lighthouse, and Cape Wrath lighthouse.

Signals shown by light-vessels and certain lighthouses.—Details of signals shown by light-vessels and certain lighthouses in the area covered by this volume are given in Admiralty List of Lights, Volume I.

Pilot signals.—The following signals are to be shown by any vessels requiring a pilot on the coasts of the United Kingdom:—

- By day: (1) The Pilot jack (Union Jack with white border) hoisted at the fore.
- or (2) The pilot signal PT of the International Code.
- or (3) The International Code flag G with or without the code pennant over it.
- or (4) The distant signal, consisting of a cone point upwards, having above it two balls or shapes resembling balls.
- 55 At night: (1) A blue light every fifteen minutes.
- or (2) A bright light, flashed or shown at short or frequent

intervals just above the bulwarks, for about one minute at a time.

These signals must only be used by vessels when pilots are required on board them.

At certain ports in the British isles a vessel requiring a pilot, in thick or foggy weather, should sound the letter G in the Morse code on the whistle or fog horn. 5

Signals to be made by vessels when inconvenienced by search-lights.—In the event of the navigation of a vessel being inconvenienced by the glare from searchlights near a port in the British Empire, she 10 should make the International Code signal ZO (—·—·—) by lamp and by whistle, siren or fog horn.

Both the light and sound signals should be employed, whenever possible, and should be repeated until the inconvenience is removed.

Only real urgency should necessitate the use of this signal, as, unless 15 the vessel be actually in the rays of a searchlight, it is not possible for the operators to know which projector is affected.

This signal is designed to assist Mariners; no liability whatever will be admitted.

This signal should also be used in similar circumstances near ports 20 in other countries.

Signals for vessels running speed trials.—Flag A of the International Code of Signals (white swallow-tailed flag with a blue fly), when flown by H.M. or other ships in the vicinity of any measured distance on the coasts of the British isles, indicates that such vessels 25 are running speed trials on that measured distance.

For mutual safety, all other vessels, both steam and sailing, should endeavour to keep out of the way while these trials are in progress.

SUBMARINE CABLES.—The following Articles are taken from the International Convention for the protection of Submarine Telegraph 30 cables, of 14th March, 1884.

II. It is a punishable offence to break or injure a submarine cable, wilfully or by culpable negligence, in such manner as might interrupt or obstruct telegraphic communication, either wholly or partially, such punishment being without prejudice to any civil action for damages. 35

This provision does not apply to cases where those who break or injure a cable do so with the lawful object of saving their lives or their ship, after they have taken every necessary precaution to avoid so breaking or injuring the cable.

V. Vessels engaged in laying or repairing submarine cables shall 40 conform to the regulations as to signals which have been, or may be, adopted by mutual agreement among the High Contracting Parties, with the view of preventing collisions at sea.

When a ship engaged in repairing a cable exhibits the said signals, other vessels which see them, or are able to see them, shall withdraw 45 to or keep beyond a distance of one nautical mile at least from the ship in question, so as not to interfere with her operations.

Fishing gear and nets shall be kept at the same distance.

Nevertheless, fishing-vessels which see, or are able to see, a telegraph-ship exhibiting the said signals, shall be allowed a period of twenty- 50 four hours at most within which to obey the notice so given, during which time they shall not be interfered with in any way.

The operations of the telegraph-ships shall be completed as quickly as possible.

VI. Vessels which see, or are able to see, the buoys showing the 55

position of a cable when the latter is being laid, is out of order, or is broken, shall keep beyond a distance of one-quarter of a nautical mile at least from the said buoys.

Fishing nets and gear shall be kept at the same distance.

5 VII. Owners of ships or vessels who can prove that they have sacrificed an anchor, a net, or other fishing gear in order to avoid injuring a submarine cable, shall receive compensation from the owner of the cable.

In order to establish a claim to such compensation, a statement, supported by the evidence of the crew, should, whenever possible, be drawn up immediately after the occurrence; and the master must, within twenty-four hours after his return to or next putting into port, make a declaration to the proper authorities.

The latter shall communicate the information to the Consular authorities of the country to which the owner of the cable belongs.

Caution. Cautionary notes appear on many charts, calling attention to areas in which there are submarine telegraph cables; these areas are indicated by pecked lines on the charts.

Every care should be taken to avoid anchoring in such areas, even though there may be no specific prohibition against so doing, in view of the serious interference with communications which results from damage to submarine cables. Equal care should be taken whenever the symbol for a submarine cable (a wavy line) is shown on the chart.

Danger involved in cutting a submarine cable to clear anchors or fishing gear. In the event of any vessel fouling a submarine cable, every effort should be made to clear the anchor or gear by normal methods; should these efforts fail, the anchor or gear should be slipped and abandoned without attempting to cut the cable. High voltages are, or may be fed into certain submarine cables; serious risk exists of loss of life due to electric shock, or at least of severe burns if any attempt to cut the cable is made. No claim in respect to injury or damage sustained through such interference with a submarine cable will be entertained.

Compensation for anchors or fishing gear sacrificed in order to avoid injuring a submarine cable can be claimed under the Submarine Telegraph Act of 1885 (Schedule of Submarine Telegraph Convention, Article VII).

AIR LIGHTS.—Mariners are warned that lights (with definite characteristics) which are not ordinary navigational aids, may be exhibited for the use of aircraft from structures situated near the coasts described in this volume.

These lights are often of great luminous power and elevation and may be the first lights or looms of lights sighted when making a landfall at night; they normally have the following characteristics:—

(a) *Flashing white* (revolving beam type).

45 (These lights are usually screened from seaward, but the loom of such lights may be seen by ships.)

or (b) *Alternating flashing white and green* (revolving beam type).

or (c) *Flashing two-letter groups in the Morse code, in red or green.*

Note:—Re (c) above:

50 Although the groups made by these lights may have quite definite meanings in the International Code of Signals, their significance is to be disregarded.

The fact that the lights are *red* or *green* in colour, and *flash* with mechanical regularity, should prevent them being mistaken for signals from shore signal stations or ships.

LIFE-SAVING.—Lifeboats and life-saving appliances form the principal means adopted for saving life; the stations where these are maintained are listed hereafter and are mentioned in their appropriate places in this volume.

The line-throwing apparatus, the principal life-saving appliance, can often be used with effect when a lifeboat is not available; its success, however, depends largely upon an intelligent co-operation on the part of the crew of the stranded vessel.

Signals.—In accordance with the International Convention for the Safety of Life at Sea, 1948, Chapter V, Regulation 16, the following signals shall be used by life-saving stations when communicating with ships in distress and by ships in distress when communicating with life-saving stations:

(a) *Replies from shore station to distress signals made by a ship:*

Signal	Signification	15
By day.—White smoke signal.	{ "You are seen—assistance will	
By night.—White star rocket.	be given as soon as possible."	

(b) *Landing signals for the guidance of small boats bringing away the crew of a wrecked ship:*

Signal	Signification	20
(i) By day.—Vertical motion of a white flag or the arms. By night.—Vertical motion of a white light or flare. A range (indication of direction) may be given by placing a steady white light or flare lower and in line with the observer.	{"This is the best place to land."	25

(ii) By day.—Horizontal motion of a white flag or arms extended horizontally. By night.—Horizontal motion of a white light or flare.	{"Landing here highly dangerous."	30
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(iii) By day.—Horizontal motion of a white flag, followed by the placing of the white flag in the ground and the carrying of another white flag in the direction to be indicated. By night.—Horizontal motion of a white light or flare, followed by the placing of the white light or flare on the ground and the carrying of another white light or flare in the direction to be indicated.	{"Landing here highly dangerous. A more favourable location to land is in the direction indicated."	35
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(c) *Signals to be employed in connection with the use of shore life-saving apparatus:*

Signal	Signification	
(i) By day. Vertical motion of a white flag or the arms. By night.—Vertical motion of a white light or flare.	In general:—"Affirmative." Specifically: "Rocket line is held." "Tail block is made fast." "Hawser is made fast." "Man is in the breeches buoy." "Haul away."	50

- (ii) *By day*.—Horizontal motion of a white flag or arms extended horizontally.
By night.—Horizontal motion of a white light or flare.
- In general*:—"Negative."
Specifically:—
 "Slack away."
 "Avast hauling."

COASTGUARD SERVICE.—The Coastguard service is maintained primarily for the preservation of life in cases of shipwreck and distress at sea; for this purpose they keep a look-out for vessels (including aircraft) in distress or difficulties, and render assistance either by life-saving appliances or by informing authorities who are in a position to assist. All coastguard stations are in direct communication with the telegraphic and telephonic systems. Particulars of the type of watch kept at the stations embraced by this volume are given below and are mentioned in the appropriate places in the body of this work.

Signals. (a) Signals for calling out Life-saving Appliances and Lifeboats:

	<i>Signal</i>	<i>Signification</i>
20	(i) One explosive sound signal (maroon) showing a white star on bursting.	L.S.A. company to assemble.
	(ii) Two explosive sound signals (maroons) showing green stars on bursting.	Lifeboat crew to assemble.
25	(iii) Three explosive sound signals (maroons), the first showing a white star and the second and third showing green stars on bursting.	L.S.A. company and lifeboat crew to assemble.

30 (b) *Signals for warning off ships observed to be standing into danger:*—In the event of the coastguard observing a vessel standing into danger, they will endeavour to warn the vessel by using one or other of the following signals:—

- (i) The International Code signal JD.
 35 (ii) The letter U in the Morse code by lamp, foghorn, whistle, etc. If it should prove necessary to attract the attention of the vessel to the signals, the coastguard may fire:—
 (1) a rocket showing white stars on bursting.
 (2) a Coastguard light, or
 (3) an explosive sound signal (i.e. sound rocket or maroon).

40 **List of Coastguard and Life-saving stations.**—In the list of stations given below, the following abbreviations are used to denote the type of watch kept and particulars of the life-saving apparatus maintained:—

45 (a) *Type of watch:*

	<i>Abbreviation</i>	<i>Signification</i>
	C.W.	Constant watch by day and night.
	C.N.W.	Constant night watch.
50		<i>In fine weather</i> , constant watch is kept from 2200 to 0600 from March to October inclusive, and from 2200 to 0700 from November to February inclusive. During other hours an occasional look-out only is kept.
55		<i>In bad weather</i> , constant watch is kept by day and night.

O.L.

Occasional look-out.

In fine weather, an occasional look-out is kept during the day only.*In bad weather*, constant watch is kept by day and night.*Note*: "C.W.", "C.N.W." and "O.L." stations are under the charge of and are manned by the regular personnel of H.M. Coastguard; the telephone is always attended whether or not watch is set.

5

10

Aux.

Auxiliary station.

Watch is only kept during certain defined conditions of bad weather.

Note: "Aux." stations are under the charge of and are manned by members of the Coast Life-saving Corps. The telephone is only attended when watch is set.

15

Nd.

Life-saving station only; no watch kept.

(b) Life-saving apparatus:

Abbreviation	Signification (life-saving apparatus)	20
A	Rescue rocket—Hawser—Full whip.	
A.I	Rescue rocket—Full whip.	
A.2	Rescue rocket—Half whip.	
B	12-pounder pistol—Hawser—Full whip.	
B.1	12-pounder pistol—Full whip.	25
C	6-pounder pistol—Hawser—Full whip.	
C.1	6-pounder pistol—Full whip.	
C.2	6-pounder pistol—200-fathom whip.	
C.3	6-pounder pistol—Half whip.	
D	2-pounder pistol—Half whip.	30
D.2	2-pounder pistol—Grass line.	
E	1-pounder pistol—Jackstay—Half whip.	
E.I	1-pounder pistol—Half whip.	
E.2	1-pounder pistol—Grass line.	

No L.S.A. Watchkeeping station only; no life-saving apparatus maintained.

Portpatrick (C.W.) (A); Ballantrae (Nil) (D); Girvan (Aux.) (C.2); Ayr (Aux.) (A); Ardrossan (Nil) (B.1); Bute (Nil) (D); Kildonan (C.N.W.) (A); Lochranza (Nil) (D); Cleats Point (Aux.) (Nil); Campbeltown (Nil) (C.1); Sanda Island (Nil) (C.3); Southend (C.N.W.) (A); Craighouse (Nil) (D); Port Ellen (Aux.) (A); Mull of Oa (Nil) (D); Portnahaven (Aux.) (D); Port Charlotte (Nil) (A); Kilchoman (O.L.) (D); Colonsay (Aux.) (C.2); Oban (Nil) (C.1); Tobermory (Nil) (A); Kilchoan (Nil) (C.2); Ardnamurchan (Aux.) (Nil); Tiree (Aux.) (A); Coll (Nil) (A); Castlebay (Aux.) (A); Loch Boisdale (Nil) (A); Loch Maddy (Nil) (A); Rodel (Aux.) (Nil); Tarbert (Nil) (B.1); Stornoway (C.W.) (A); Portnagurran (Nil) (C.2); Kyle (Nil) (D); Duntulm (O.L.) (D); Portree (Nil) (A); Eist (Neist) Point (Aux.) (Nil); Dunvegan (Nil) (B); Mallaig (Aux.) (A.2); Gairloch (Nil) (A); Ullapool (Nil) (A); Loch Inver (Nil) (A.1); Kinlochbervie (Nil) (B.1); Sheigra (Aux.) (Nil) and Cape Wrath (Nil) (D).

50
55
Lifeboats are stationed at the following places:—Portpatrick, Girvan, Troon, Campbeltown, Port Askaig, Barra, Stornoway and Mallaig.

UNIFORM SYSTEM OF BUOYAGE.—The four coloured diagrams facing pages 12-13 illustrate the Uniform System of

Buoyage agreed at the London Conferences of 1933 and 1936. The following article gives details of this system as interpreted by the nation concerned. The following uniform system of buoyage is that adopted on the coasts covered by this volume :—

5 **Lateral system.**—The mariner approaching the coast, having fixed his position, must note the direction of the main flood stream. For the waters included in this volume, the direction of the main flood stream is deemed to be that flowing towards Cape Wrath north of Mull of Kintyre, towards the Irish Sea in North channel, and in a northerly direction in Firth of Clyde.

10 The term "starboard hand" shall denote that side which would be on the right hand of the mariner either going with the main flood stream or approaching a harbour, river, or estuary from seaward. The term "port hand" shall denote the left hand of the mariner in the same circumstances.

Buoys marking the same side of a channel, estuary, or tide-way, may be distinguished from each other by names, numbers (commencing from seaward, odd to starboard, even to port) or letters.

15 **Starboard hand buoys.**—Starboard hand buoys are conical in shape and are painted black or black and white in chequers. The topmark (if any) is a black cone or, for purposes of differentiation except at the entrance to a channel, a black diamond. If lit, a *white flashing* light, having *one, three or five* flashes, is exhibited. *Green* lights are not exhibited from starboard hand marks in the British Isles.

20 **Port hand buoys.**—Port hand buoys are can-shaped and are painted red or red and white in chequers. The topmark (if any) is a red can, or, for purposes of differentiation except at the entrance to a channel, a red T. If lit, a *red flashing* light, having *any number* of flashes *up to four*, or a *white flashing* light, having *two, four or six* flashes, is exhibited.

25 **Middle ground buoys.**—Middle ground buoys are spherical in shape; if the main channel lies to starboard, or if the channels are of equal importance, they are painted in red and white horizontal bands; if the main channel lies to port they are painted in black and white 35 bands. When topmarks are carried, if the main channel lies to starboard the outer end buoy is distinguished by a red can, and the inner end buoy by a red T; if the main channel lies to port the outer end buoy is distinguished by a black cone, and the inner end buoy by a black diamond; if the channels are of equal importance, the outer end buoy is distinguished by a red sphere, and the inner end buoy by a red cross. If lit, their lights are either *white* or *red* and are distinctive as far as possible; neither the colour nor the phase of the light are such as to lead to uncertainty as to the side on which the buoys must be passed.

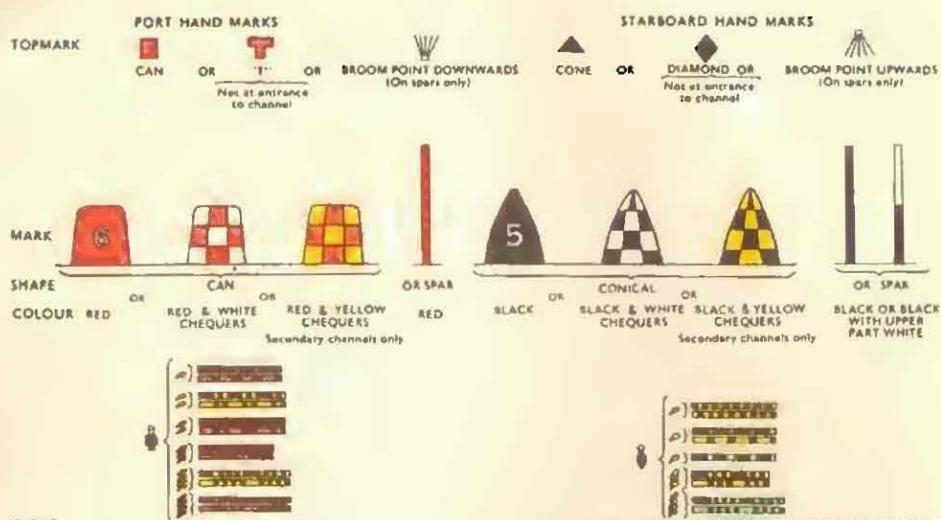
30 **Mid-channel buoys.**—Mid-channel buoys are where possible of distinctive shapes, being neither conical, can, nor spherical; they are painted in black and white, or red and white, vertical stripes. If a topmark is carried it is distinctive in shape, being neither cone, can nor sphere; if lit, their lights differ from other lights in the vicinity.

35 **Isolated danger buoys.**—Buoys marking isolated dangers are spherical in shape, and are painted in wide black and red horizontal bands which are separated by a narrow white band. If a topmark is carried it consists of a sphere painted black or red, or half black and half red horizontally; if lit, they exhibit *white* or *red flashing* lights.

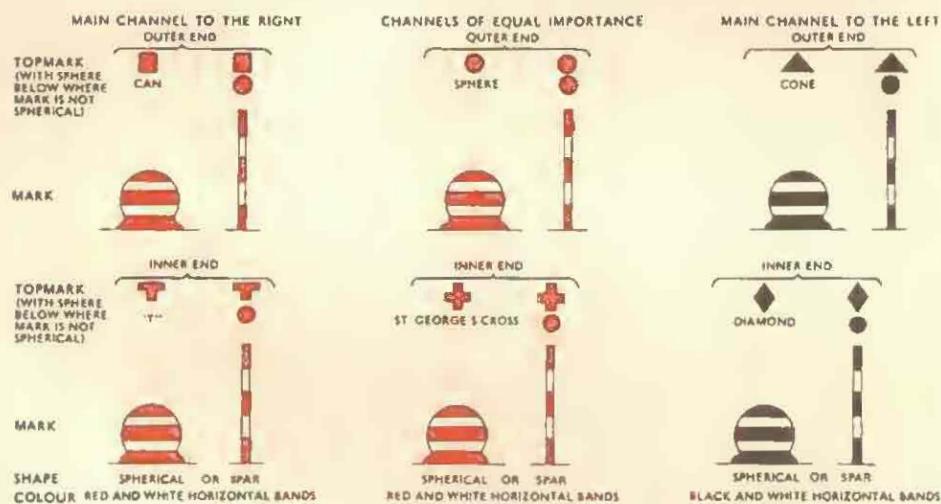
40 **Landfall buoys.**—(Fairway marks in the diagram). These buoys, which serve to indicate the seaward approach to a harbour, river or

DIAGRAMS ILLUSTRATING THE UNIFORM SYSTEM OF BUOYAGE

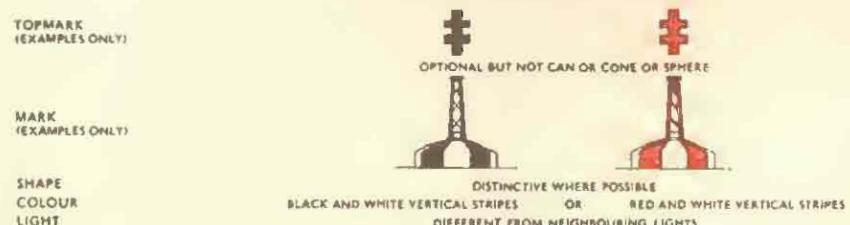
LATERAL SYSTEM



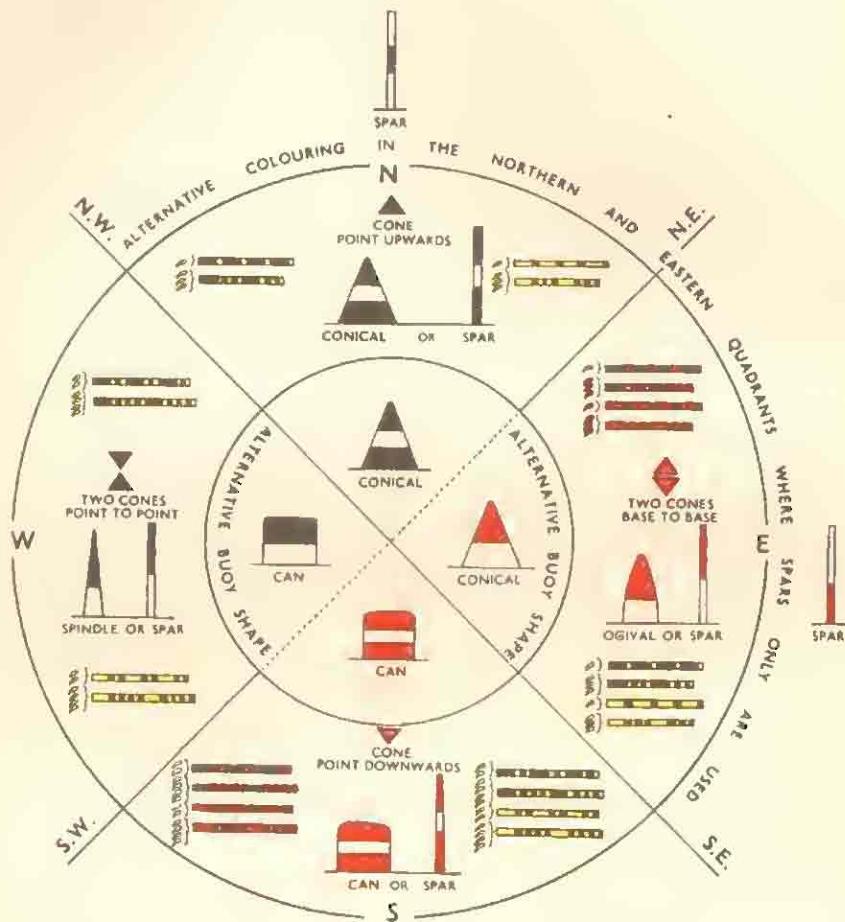
MIDDLE-GROUND OR BIFURCATION OR JUNCTION MARKS



MID-CHANNEL MARKS



DIAGRAMS ILLUSTRATING THE UNIFORM SYSTEM OF BUOYAGE
CARDINAL SYSTEM



NOTE SLIGHT MODIFICATIONS IN MINOR DETAILS TO THE ABOVE
 HAVE BEEN INTRODUCED BY CERTAIN COUNTRIES

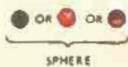
DIAGRAMS ILLUSTRATING THE UNIFORM SYSTEM OF BUOYAGE

MARKS COMMON TO BOTH SYSTEMS

AND OTHER MARKS

ISOLATED DANGER MARKS

TOPMARK



MARK



SHAPE

SPHERICAL OR SPAR

COLOUR

WIDE BLACK AND RED HORIZONTAL BANDS
SEPARATED IF DESIRABLE BY A NARROW WHITE BAND

LIGHT

FLASHING (WHITE OR RED)

FAIRWAY MARKS



OPTIONAL (SEE FOOTNOTE)



BLACK AND WHITE VERTICAL STRIPES OR RED AND WHITE VERTICAL STRIPES

FLASHING

TRANSITION MARKS

TOPMARK



MARK

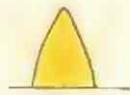


SHAPE

RED AND WHITE DIAGONAL STRIPES OR BLACK AND WHITE DIAGONAL STRIPES

COLOUR

QUARANTINE-GROUND MARKS



YELLOW

OUTFALL AND SPOIL-GROUND MARKS

MARK



SHAPE

OPTIONAL (SEE FOOTNOTE)

COLOUR

YELLOW ABOVE AND BLACK BELOW

AREAS USED FOR NAVAL MILITARY, OR AIR FORCE PRACTICE PURPOSES



WHITE WITH BLUE CROSS

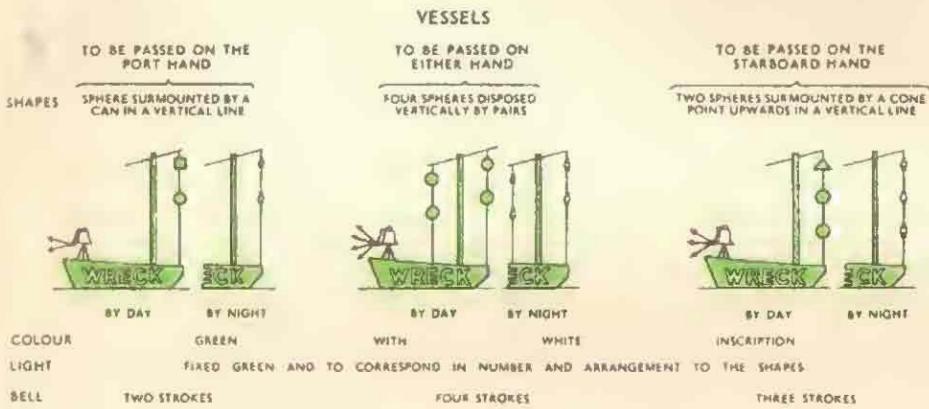
FOOTNOTE: SHAPE IS OPTIONAL AND THE ILLUSTRATIONS ARE TO BE REGARDED AS EXAMPLES ONLY
THE ONLY DEFINITE REQUIREMENT IS THAT THE SHAPE ADOPTED SHALL NOT BE MISLEADING

DIAGRAMS ILLUSTRATING THE UNIFORM SYSTEM OF BUOYAGE MARKING OF WRECKS

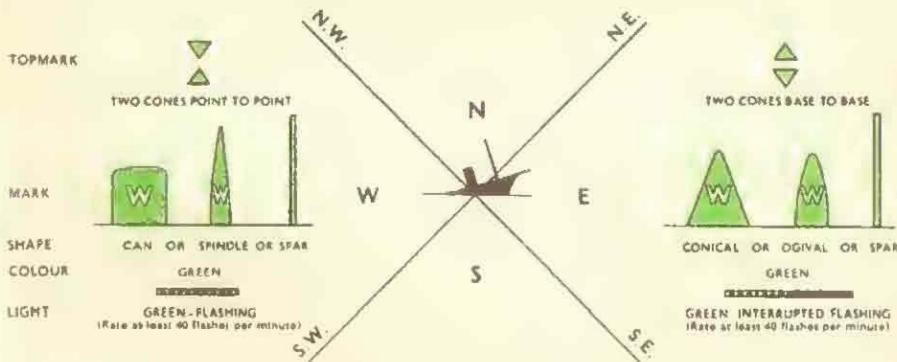
LATERAL SYSTEM BUOYS



LIGHT GREEN - DOUBLE FLASHING GREEN - SINGLE OCCULTING GREEN - TRIPLE FLASHING



CARDINAL SYSTEM



estuary, are similar in shape and colour to those which may be used for marking mid-channels (*see above*); if lit, they will exhibit *flashing* lights.

Miscellaneous buoys.—Buoys marking spoil grounds or sewer outfalls, are not considered as navigational buoys but are generally ⁵ of the appropriate shape as for channel marking; they are generally painted horizontally, the upper half yellow and the lower black.

Buoys intended for moorings or other purposes not included above, may be of any shape or colour other than green, according to the discretion of the authority within whose jurisdiction they are laid, ¹⁰ but not such as might lead to confusion with buoys whose purpose is defined above.

Quarantine-ground and Transition marks are not used in these waters.

Buoys marking submarine telegraph cables are usually black with ¹⁵ the word "Telegraph" painted on them in white letters.

Sound buoys.—Buoys fitted with sound signal devices will have, if practicable, the characteristics appropriate to their position in accordance with the foregoing rules.

Spar buoys.—Spar buoys are rarely used but may be found in ²⁰ some ports; their colour generally conforms to the rules for channel marking, *see diagrams*.

Caution.—In certain cases slight modification to the above rules may be found where local circumstances make it desirable. Full particulars will be found in the appropriate place in the body of this ²⁵ hook which should invariably be consulted.

Marking of wrecks.—Green is the colour used for all purposes connected with wreck-marking, *viz.*:—For vessels, buoys, daymarks, lights, &c.; vessels and buoys have the word "Wreck" painted on them in white letters on a green ground.

The characteristics of vessels and buoys given hereafter apply to ³⁰ wreck-marking in the open sea; the system is followed in estuaries, rivers, harbours, &c., unless the authority having jurisdiction in the locality, in their discretion, determine otherwise.

Wreck-marking buoys:—

35

- (a) To be passed on the mariner's port hand—
A can-shaped buoy, and, if lighted, a *green* light exhibiting *two flashes*.
- (b) To be passed on the mariner's starboard hand—
A conical buoy, and, if lighted, a *green* light exhibiting *three 40 flashes*.
- (c) To be passed on either side—
A spherical buoy, and, if lighted, a *green* light exhibiting *one flash*.

Wreck-marking vessels:—

45

- I. Lights, exhibited between sunset and sunrise:—
(a) To be passed on the mariner's port hand—
Two *green* lights, disposed vertically, not less than 15 feet ($4^m 6$) above the hull.
- (b) To be passed on the mariner's starboard hand—
Three *green* lights, disposed vertically, not less than 9 feet ($2^m 7$) above the hull.
- (c) To be passed on either side—
Four *green* lights, placed in pairs on each end of a crossyard not less than 15 feet ($4^m 6$) or more than 25 feet ($7^m 6$) ⁵⁵ apart horizontally; the lights of each pair to be disposed

vertically, the lower light of each pair being not less than 15 feet (4^m6) above the bell.

Note. The ordinary riding light for a vessel at anchor is not exhibited.

- 5 II. Shapes:—Between sunrise and sunset green balls or shapes are displayed corresponding in number and arrangement to the *green* lights.
- III. Fog signals, rung on a deep-toned bell at intervals of not more than 30 seconds—
- 10 (a) To be passed on the mariner's port hand—2 strokes in succession.
- (b) To be passed on the mariner's starboard hand—3 strokes in succession.
- (c) To be passed on either side—4 strokes in succession.

Marking of danger areas.—Danger areas are marked by conical 15 buoys, which should be left on the starboard hand, or can buoys, which should be left on the port hand, when proceeding with the main flood tidal stream.

Such buoys are painted yellow with two red vertical stripes intersecting at the top of the buoy, thus representing a cross when seen 20 from above; and are marked "D.Z." in black letters.

If lighted, the starboard hand conical buoys will generally exhibit white and the port hand can buoys red lights.

MEASURED DISTANCES.—Measured distances are established at:—Skelmorlie, Gareloch, Loch Long, Holy loch, Ardmaleish, Island 25 of Bute, Loch Riddon, Island of Arran and Loch Fyne.

COMMUNICATIONS.—Railway.—Southward of, and including, Glasgow, all the towns and the majority of the villages along the coast in the area covered by this volume are connected with the general railway system.

30 The only places northward of Glasgow, on the western coast of Scotland, which possess railway communication are Oban, Port Appin, Duror, Kentallen, Ballachulish, Fort William, Corpach, Arisaig, Mallaig, Kyle of Lochalsh, Plockton, and Stromefererry.

There are motor coach routes in many of those parts of the country 35 which are not served by the railway.

Sea.—Communication is well maintained by vessels with all places of the slightest importance on the western coast of Scotland, as well as with the outlying islands. The principal starting points are Glasgow, Greenock, and Ardrossan, on the Clyde; West Loch Tarbert, Oban, 40 Mallaig, and Kyle of Lochalsh, on the western coast; and Portree in Skye. More detailed information is given of the various places served, in the body of this work.

There is communication by sea between Oban and Tobermory, Kilchoan, Coll, Tiree, Castle bay, and Loch Boisdale; between Loch 45 Boisdale, Loch Maddy, Tarbert in Harris, Kyle of Lochalsh, and Mallaig; and between Mallaig, Kyle of Lochalsh, and Stornoway.

Post, telegraph and telephone.—All the towns and the majority of the villages, mentioned in this work have post offices, and are connected with the general telegraph and telephone systems.

50 **Radio stations.**—The only radio stations in the area covered by this volume, which are open to public correspondence, are established at Oban and Portpatrick. For details see List published by the General Secretariat of the International Telecommunication Union.

For radio stations which transmit weather bulletins, storm signals,

navigational warnings, time signals, &c., see Admiralty List of Radio Signals.

STANDARD AND SUMMER TIMES.—All information regarding Standard and Summer times will be found in the Admiralty List of Radio Signals, Volume V. 5

FUEL.—Coal can be obtained at most of the ports in Firth of Clyde, also at Oban, Tarbert in Harris, Stornoway and Mallaig. Full details are given in the appropriate places in the body of this work.

Fuel oil may be obtained at Ardrossan, Greenock, Glasgow, and Mallaig. 10

QUARANTINE.—Foreign-going vessels approaching the port of Glasgow must inform the Sanitary Authority of that port by radio if any person on board has symptoms which may be indicative of infectious disease, other than tuberculosis, or if there are any circumstances requiring the attention of the Port Medical Officer. 15

For details see The Admiralty List of Radio Signals.

DERATISATION.—In accordance with Article 17 of the International Sanitary Regulations, deratatisation can be carried out and Deratisation and Deratisation Exemption certificates can be issued to vessels at the following ports covered by this volume :—Ayr, Greenock, 20 and Glasgow.

FISHERIES.- Fishing grounds.—Trawlers do not fish in fleets on the western coast of Scotland, but singly, or in groups of twos or threes. The vicinities of the western coasts of Islay and Skye are their favourite grounds ; they are also found in the areas given 25 below.

Both steam and sailing trawlers are employed on this form of fishing, and in addition a modified form of trawling is prosecuted by motor boats in certain inshore areas.

Herring fishermen follow the movements of the herring shoals, 30 which are uncertain, but they will generally be found in the areas given below.

Herring fishing is prosecuted in Firth of Clyde, chiefly by motor seine-net boats, practically throughout the year, the slack season being usually during the spring months. 35

Kilbrannan sound and Kyles of Bute are, as a rule, the most productive of this fishery. Ballantrae bank is also fished during the herring spawning season about the middle of February and beginning of March, but it is often interfered with by bad weather.

During the spring months long-line fishing and cod net fishing are 40 prosecuted to a limited extent off the Ayrshire and Renfrewshire coasts, and off Campbeltown, and long-line fishing in the Sea of the Hebrides. During the spring and summer months white fish seining is prosecuted off the Ayrshire and Renfrewshire coasts.

Long-line fishers are seldom in fleets. 45

The fisheries are the principal industry of Outer Hebrides, Castle bay and Stornoway being the chief stations for the herring fishery, though at Loch Maddy, and at Scalpay, in the entrance to East Loch Tarbert, as well as at other places on the eastern side of Outer Hebrides, there are smaller stations, which vary in importance according to the 50 results of the fishing.

Great line fishing is engaged in by drifter liners from Stornoway from February to April on grounds all over the Minch, the principal kinds of fish caught being cod, ling, skate, conger eel, and halibut.

Small line fishing for haddock is conducted inshore by sailing and 5 rowing boats from all the creeks on the eastern coast of Lewis, especially from Broad Bay and Callicvol.

There are long-line fishing stations at Barra and Eriskay. Good fishing banks lie near Eriskay, but the most abundant for cod and ling is Sgriobh bhan, $8\frac{1}{2}$ miles south-south-westward of Barra head, with 10 depths of from 27 to 56 fathoms (49^m4 to 102^m4).

The best places for salmon are the rivers in South Uist and Lewis.

Lobsters are plentiful along the rocky parts of the coast in all the islands, oysters are found in many of the lochs, and there is also a trade in the common periwinkle. Small shellfish are found in the sandy 15 bays along the eastern coast, and they are very plentiful in Sound of Barra.

Whales sometimes come in upon the coast, and are driven into shoal water and killed; they are often caught in Lochs Maddy and Seaforth, and in Sound of Harris.

20 Seals herd, and are easily taken in October, at Hascir and Gasker islands; small seals are to be found in the unfrequented lochs.

In January drift-net fishing is carried on in the Sea of the Hebrides between Tiree and Coll and Barra islands; to the eastward of Lewis northward of Eye peninsula; and in the approaches to Loch Broom.

25 Trawlers will be found in an area about 12 miles in length from 6 to 12 miles eastward of Eye peninsula, and in a small area about 12 miles northward of Butt of Lewis. There are long-line fishermen on the western coast of Scotland, in the Sea of the Hebrides, from Colonsay to Skerryvore, and off Rockall and South Rona.

30 In February drift-net fishing is mainly carried on in the Minch, but sometimes a section of the steam drifter fleet work in an area from 8 to 20 miles westward to northward of Butt of Lewis. Trawling is carried on in this month in an area south-westward of Dubh Artach; in an area from about 4 to 14 miles northward of Butt of Lewis; in an 35 area about 13 miles in extent, about 12 miles eastward of Eye peninsula; and also for about 5 to 10 miles north-eastward and south-eastward of Rona. There is a large number of long-line fishers on the western coast of Scotland; also from Colonsay to Skerryvore; in the Sea of the Hebrides; round Butt of Lewis; and there are a few off Rockall, 40 South Rona, and Eddrachillis bay.

In March trawling is carried on around Dubh Artach and Skerryvore; in an area south-westward of Stanton banks; within about 15 miles north-eastward from Butt of Lewis; off Eddrachillis bay and Loch Inchard; and in an area of about 8 miles in extent about 6 miles 45 south-eastward from Rona. Drift-net fishing is carried on in this month in the same area as that described above for February. There are many long-line fishers from Colonsay to Skerryvore; in the Sea of the Hebrides; northward of Butt of Lewis; off South Rona; and off the western coast of Scotland from Eddrachillis bay to some distance 50 northward of Cape Wrath.

In April drift-net fishing is carried on south-westward of Rhum from Oigh sgeir to Coll bank, and in the Sea of the Hebrides. Trawling is carried on in this month around Dubh Artach and Skerryvore; off Eddrachillis bay; in an area about 9 miles in extent about 10 miles 55 north-north-eastward from Butt of Lewis; and south-eastward of Rona. There are a few long-line fishers on the western coast of Scotland;

from 5 to 7 miles off the eastern coast of Outer Hebrides, from Barra head to Muldoanich; in the vicinity of St. Kilda; a few long-line fishers also work north-westward of the Flannan isles, and thence east-north-eastward towards Nun rock.

In May trawling is carried on in the same areas as in March, but extending a little farther westward; around Dubh Artach and Skerryvore lighthouses; in the Sea of the Hebrides; in an area 12 miles in extent east and west about 10 miles northward from Butt of Lewis; and in large areas eastward of Sula sgeir and Rona. Herring seine-net fishing is carried on in the same month in Kilbrannan sound and Loch Fyne. Drift-net fishing is carried on in the Sea of the Hebrides; for about 10 miles off the eastern coast of Lewis from Scalpay to Callicvol and thence across to Cape Wrath, and northward to the parallel of 59° N. latitude. There are a few long-line fishers on the western coast of Scotland, and along the 100-fathom (182^m9) line from St. Kilda to 15 miles north-north-eastward of Rona.

In June trawling is carried on around Dubh Artach and Skerryvore, and south-westward of Stanton banks; in an area 10 miles in extent 5 miles westward from Aird Brenish in Lewis; and in an area about 20 miles in extent north-west and south-east immediately north-eastward 20 of Rona. Herring seine-net fishing is carried on in the same month southward of Ailsa Craig, in Kilbrannan sound, and in Loch Fyne. Drift-net fishing is carried on for about 7 miles north-westward of Skerryvore, Tiree, and Coll, and the same distance westward of Canna; off the north-western coast of Skye; for about 7 miles off the eastern 25 coast of the Hebrides northward to Shiant islands, and thence about 22 miles off the coast of Lewis northward to Butt of Lewis; off the western coast of the Hebrides northward approximately to a line from Griminish point to about 10 miles from St. Kilda. There are a few long-line fishers near and north-westward of St. Kilda, and off Rockall. 30

In July trawling is carried on around Dubh Artach and Skerryvore lighthouses, and up to 40 miles westward of the former; in an area about 30 miles in extent southward and south-westward of Stanton banks; in the Sea of the Hebrides; westward of St. Kilda; westward of Aird Brenish in Lewis; and eastward of Sula sgeir and Rona. Herring 35 seine-net fishing is carried on in the same month off the southern Ayrshire coast; in Kilbrannan sound and its approach from the southward; and in Loch Fyne. Drift-net fishing is carried on this month in the Sea of the Hebrides; from off Eilean Trodday, at the northern end of Skye, to off Handa island, on the mainland side of the Minch, and 40 in the area of North Minch from the vicinity of Scalpay bank to off Tolsta on the eastern coast of Lewis. Long-line fishers work along and near the 100-fathom (182^m9) line, and off Rockall.

In August trawling is carried on around Dubh Artach and Skerryvore lighthouses and up to 40 miles westward of the former; in the 45 Sea of the Hebrides; in an area 30 miles in extent southward and south-westward of Stanton banks; in an area about 12 miles in extent about 15 miles westward from St. Kilda; and southward of Sula sgeir. Herring seine-net fishing, drift-net fishing, and long-line fishing are carried on in this month in the same areas as in July. 50

In September trawling is carried on in the same areas as in August, and in addition in the vicinity of Sula sgeir and Rona. Herring seine-net fishing is carried on this month in the same areas as in July and August. Drift-net fishing is carried on in the same month over Stanton banks, and in the Sea of the Hebrides, and for about 17 miles off the eastern 55 coast of Lewis from Loch Shell to 15 miles north-eastward from Butt

of Lewis. There are more long-line fishers this month off Tiree, Òigh sgeir, and Rockall, and north-westward of St. Kilda and Flannan isles.

In October trawling is carried on around Dubh Artach and Skerry-
 5 vore lighthouses and up to 40 miles westward of the former; in an area about 30 miles in extent southward and south-westward of Stanton banks; and in an area around Rona. Herring seine-net fishing is carried on this month in the same areas as in July, August, and September. Drift-net fishing is carried on this month over Stanton
 10 banks; in the Sea of the Hebrides; between the Small isles and Skye; in Inner sound and Sound of Raasay; off Island of Rona; off the western coast of Scotland northward of Loch Torridon; and from Rubh' Ré to Point of Stoer; off the eastern coast off South Uist; and off the eastern coast of Lewis to 10 miles southward of Eye peninsula.
 15 There are a few long-line fishers this month off Tiree, Òigh sgeir, and Rockall; also within about 30 miles southward from St. Kilda, and between that group and the Flannan isles.

From October to April cod-net fishing is carried on in Inner sound and the Sound of Raasay.

20 In November trawlers work in an area extending about 10 miles both northward and southward from Rona. Herring seine-net fishing is carried on this month off the Ayrshire and Renfrewshire coasts; in Kilbraiman sound; and in Kyles of Bute, and adjoining lochs. Drift-net fishing is carried on in the same month between Small isles
 25 and Skye; in Inner sound and Sound of Raasay; for about 10 miles off the western coast of Scotland between Rubh' Ré and Point of Stoer; along the shores and in the lochs of South and North Uist; and for about 12 miles off the eastern coast of Lewis, from eastward of Eye peninsula to about 14 miles north-eastward of Butt of Lewis.
 30 A few long-line fishers will be found this month on the western coast of Scotland, and off Rockall.

In December trawlers are found in an area 5 miles in extent midway between Handa island, on the mainland coast, and Cellar head, in Lewis; in an area from 3 to 8 miles northward of Cape Wrath;
 35 in an area about 14 miles in extent south-eastward of Rona; and in the vicinity of and 5 miles southward of Sula sgeir. Herring seine-net fishing is carried on in this month in the same areas as in November. Drift-net fishing is carried on in December between Small isles and Skye; in Inner sound and the Sound of Raasay; off the
 40 western coast of Scotland from Rubh' Ré to Rhu Coigach; in the approaches to Loch Broom; and along the shores and in the lochs of South and North Uist. A large number of long-line fishers will be found this month off the western coast of Scotland, and some off Rockall.

Fishing vessels.—Methods of avoiding damage to their gear. A vessel
 45 should, if possible, avoid passing through a fleet of drifters. Even a single vessel may have considerable difficulty in doing so without damage to nets, because the nets of one boat lie so close to those of another that in manoeuvring to pass the end of one line a vessel is very apt to find herself in the middle of another. If forced by circumstances to cross a line of drift-nets the least damage will be done by crossing them at right angles, midway between two of their buoys, at a fair speed. If possible, propellers should be stopped while passing over the nets. The mere parting of a net does no great harm, but the revolving propeller may draw up the headline and net, thereby doing
 55 considerable damage. Cases have been reported of large steamers having to be towed into port helpless after fouling drift-nets.

Mackerel and pilchard nets are on the surface, and there is no means of avoiding them except by keeping clear of them.

At night, it should be remembered that the nets lie in the direction of the wind, with the drifter at their lee end, so if the latter is passed to leeward the vessel is bound to clear the nets. When nets are being hauled at night powerful acetylene lamps are used on deck. 5

Drifters carry very bright lights at night, usually visible 5 miles in clear weather.

The Rules of the Road should be strictly adhered to with regard to lights carried by fishing vessels. 10

A drifter usually lies stem on to her nets. In this case she always has her mizen set; if stern on she has no mizen set.

The nets of British drifters are fished in fleets of from fifty to one hundred and twenty nets (usually about eighty) extending from one to $2\frac{1}{2}$ miles in length. The nets are suspended by "strops" from buoys, 15 usually known as "buffs", "bowls", or "pallets", the distance from the surface varying according to the type of fishing. In the case of herring drifting it is from $1\frac{1}{2}$ to 2 fathoms (2^m7 to 3^m7). The bottom of the nets are made fast by "seizings" or "stoppers" to a stout manila warp which underruns the whole fleet. The extremity of the fleet is marked 20 by a buoy known as the "pole end" or "end" buoy, and there are intermediate buoys, one to each net, painted in the particular colour favoured by the owner. These are at intervals of 35 or 40 yards (32^m0 or 36^m6), the quarter and half and three quarters of the fleet being marked by buoys appropriately quartered in their painting. 25

Foreign drifters now mostly employ the same type of gear but generally shoot a larger number of nets extending sometimes to 4 or 5 miles. In some cases nets of a heavier type are used. These are usually hung from a warp suspended from buoys at a depth of about 3 fathoms (5^m5) from the surface. 30

It should be noted that when shooting drift-nets large foreign drifters are frequently navigated stern first; British drifters shoot before the wind with the mizen sheet slackened out.

In places where drift-net fishing is being carried on, if two white lights are seen at night they probably belong to a drifter. 35

If a steam or sailing vessel is seen by day with the foremast down and mizen set and not under way, that vessel is a drifter riding to her nets.

The ends of the nets may or may not be specially marked with a staff and flag, or a white float. 40

If a fleet of drifters is passed through at night it is impossible to avoid the nets.

If a vessel has to pass close to a drifter she should pass to leeward of her; by night, the higher light shows the clear side, and the lower light shows the direction in which the nets extend. 45

It is best to avoid drifters altogether.

Herring seine boats work in pairs, operating a large net with which they encircle the shoals. They are frequently found in fleets, mostly in the Clyde area.

Charts 2635, 2.

GENERAL DIRECTIONS.—Approaching the western coast of Scotland.—A vessel approaching from westward, bound to the Clyde or any port in the Irish sea, usually makes Tory island, which is steep-to and has a good light and fog signal (see Irish Coast Pilot) If bound to the eastern coast of Scotland or to any of the northern 55

Chart 2635, 2.

ports in Europe they usually pass northward of Outer Hebrides, and if possible, sight Butt of Lewis, and then proceed either through Pentland firth or between the Orkney and Shetland islands (*see North Sea Pilot, Parts I and II*).

The route northward of Scotland, when bound to British ports northward of Firth of Forth, is for vessels from Arquipélago dos Açores (Azores) or ports in the United States or Canada, as short, or shorter, than the route up the English channel and the North sea, the 10 southern part of which is encumbered with shoals.

Chart 2635.

Inshore route.—The route along the coast, in which there is shelter and many anchorages, is through Sound of Islay, Firth of Lorne, Sound of Mull to Point of Ardnamurchan, through Sound of Sleat, 15 Kyle Rhea, Kyle Akin, Inner sound, and the Minch.

Charts 5301, 5302.

CLIMATE AND WEATHER.—General remarks.—The climate of the general area of this pilot, shown in the accompanying maps (Figures 1-6) is largely controlled by a series of depressions or lows, 20 described in the section on General Meteorology (page xxx), approaching from the Atlantic in a general easterly or north-easterly direction. The airstream affecting the area therefore frequently comes from lower latitudes and is stable giving dull and wet weather. Usually in the rear of depressions, or when an anticyclone is situated in the region 25 of Greenland, air from higher latitudes invades the area. Such a "polar maritime" airstream is unstable and brings colder showery weather with fair intervals.

The climate of the western coast of Scotland and its associated islands is very greatly affected by the high degree of exposure westward 30 and by the proximity of the mountain groups lying eastward. The southern part of the area is to some extent sheltered by the northern part of Ireland and in the northern part the mainland itself is less exposed than the western coasts of Outer Hebrides. On a smaller scale many modifications in local detail result from the very broken nature 35 of the coastline and from irregularities in the distribution of high ground. Some of these variations will be indicated; the broad general characteristics shown by the region as a whole are:—

1. The area is very stormy. The more exposed situations are probably the stormiest in the British Isles; comparatively sheltered 40 places are found among the islands and lochs, but even so a specially marked feature is that in rough weather the lee of high ground is in many cases subject to violent squalls.

2. Rainfall is abundant; it increases towards the higher ground and is therefore very heavy at the heads of some of the mainland 45 lochs. Cloud amount and humidity are in general high.

3. The climate is very equable and in particular the stormy winters are mild; snow is infrequent considering the latitude. Thunderstorms are not common, especially the summer heat type. Fog is also rare, though high ground which could otherwise be seen from the sea may 50 be obscured by low cloud.

4. Weather is usually very variable; the regular monthly changes shown by the average figures in the climatic tables (*see pages 35-38*) are often hidden by irregular variations from day to day.

Neglecting local variations and the more pronounced day to day 55 fluctuations, the normal seasonal cycle may be summarised as follows:

Charts 5301, 5302.

Winter half-year (October to March).—The most frequent wind directions are south-westerly, southerly and westerly in that order; winds from north-eastward are fairly frequent towards the end of the season. 5

From 80 to 90% of gales occur in this period.

Fog and poor visibility are not very frequent except in the neighbourhood of the Clyde; this district is affected by industrial smoke and most fog is there experienced in winter. 10

Rain: October to January are the wettest months.

Temperature: February is the coldest month and autumn is warmer than spring; unusually cold weather may accompany an interruption of the westerlies. 15

Summer half-year (April to September).—The preponderance of winds from south-westward is still felt but is less marked than in winter; westerly winds are next in order of frequency and those from between north-east and east are fairly frequent at the beginning of the season. 15

Gales are infrequent.

Fog and poor visibility are infrequent though in most places there is a slight maximum in summer (sea fog). 20

Rain: April to June are the driest months.

Temperature: July and August are the warmest months; unusually warm weather may accompany interruptions of the westerlies.

Pressure and winds.—The changeable weather types are linked with very variable pressures and readings may differ by as much as 40 mb. in the course of 24 hours. The regular daily cycle of less than one mb. is therefore almost always masked. The following seasonal averages, taken over a long period, may be considered as a background to the irregular fluctuations which are always taking place: 30

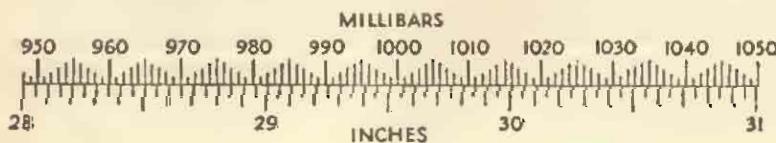
Winter half-year. Pressure is high over the continent and in a belt about latitude 35° N.; it is lowest westward of Iceland. Approximate mean values for the western coast of Scotland are given below, showing a minimum for the year in December, while the subsidiary maximum which occurs in January farther southward is only just noticeable in the southern part of this area:— 35

	December	January	March
Southern part . . .	1,007 mb.	1,011 mb.	1,010 mb.
Northern part . . .	1,003 mb.	1,006 mb.	1,007 mb.

Summer half-year. The main high-pressure belt is farther northward in about latitude 38° N.; the low near Iceland is weaker and the high pressure over the continent is replaced by a region of relatively low pressure. Approximate mean values for the western coast, given below, show a maximum for the year in June, with a subsidiary minimum in August, which is apparent over the whole area: 40

	June	August	September
Southern part . . .	1,015 mb.	1,012 mb.	1,015 mb.
Northern part . . .	1,014 mb.	1,010 mb.	1,012 mb.

For converting millibars to inches of mercury or vice versa, the following diagram may be used:—



Charts 5301, 5302.

Depression or storm tracks.—Depressions occur at all times of the year. With regard to the number of disturbances which pass over or very near to the area, the summer as a whole is not very different from winter. The important difference is that depressions in winter are usually much larger and more intense than in summer; those which may seriously affect the region include the larger depressions centred at greater distances and the winter half-year is therefore much the stormier.

10 The sequence of weather associated with depressions is fully described under the heading "Lows" on page xxx. The sequence of a particular disturbance may be repeated after only a brief interval if another member of a series follows; there may be a prolonged succession, giving a period of wet and stormy weather which is likely 15 to be very mild in winter or cool in summer. Most gales occur with the depressions of winter and the changes of wind experienced in different cases can often be classed with one of three types:—

1. A large intense disturbance passing far northward; bad weather prolonged but veering of the wind and other sudden changes not very 20 marked; winds often strong, but not usually of gale force, except possibly in very exposed localities.

2. A depression passing close northward; bad weather relatively brief; sudden changes occur at the fronts of the depression and severe squalls not unlikely; gales often to be expected.

25 3. A depression passing southward; sudden changes not usual; a freshening wind backs gradually from an easterly point through north and may reach gale force from this quarter; colder conditions, possibly snow showers in winter.

Certain distinct weather types, which can occur as transitory phases 30 in the neighbourhood of a depression, may be experienced in more persistent form when the influence of active disturbances is remote. The nature of these types is largely determined by the source and history of the airstream and in approximate terms may therefore be linked with the general direction of the wind, where this is not 35 modified by any purely local effects. It is useful to list some of these common types, though it must be emphasised that along such a broken coastline the degree of shelter and other factors may greatly affect local weather. In particular where a pronounced veer of a 40 strong wind takes place, the severest results will be felt along a previously sheltered coast which is suddenly exposed.

1. *Westerly and south-westerly.*—This is the predominant type which gives the area its mainly "oceanic" climate: mild, wet and often stormy, especially in winter. Weather is very changeable and sudden variations are not uncommon; a veer north-westward bringing clearer 45 weather is often a striking feature with the passage of a depression. Over much of this coastal area the wind appears to blow frequently from a more southerly point during typical "south-westerly" conditions. Sea fog is most likely with south-westerly winds in summer.

2. *Easterly.*—Drier air of continental origin is most common from 50 February to May and usually reaches this coast from an easterly point, though sometimes from a more southerly point. Easterly winds are often very cold in winter and early spring, but the sheltering high land moderates their severity. They are sometimes persistent. Industrial smoke from the Clyde may give poor visibility in the outer estuary 55 especially with light easterly winds.

3. *Northerly.*—Winds from a northerly point are often cool, squally

Charts 5301, 5302.

and stormy. In the rear of a depression they are often strong and very showery, with snow in winter, but are usually shortlived. A backing northerly wind may indicate the approach of another depression, while with greater persistence the weather often becomes ⁵ more settled.

4. *Quiet, settled weather.*—With the calms or light winds of quiet, settled weather, which may occur for brief spells at any time of the year, local effects will be predominant but usually of little importance. Over most of this coast land and sea breezes are uncommon, even in ¹⁰ summer, and there are few situations outside the Clyde area which favour the development and persistence of radiation fog.

5. *South-easterly.*—When south-easterly winds occur which do not belong to a persistent "easterly" type, they are often the result of the freshening and backing in advance of a depression. A sudden veer to a ¹⁵ westerly point is then usually to be expected as the weather worsens; a gale may result.

Predominant winds.—Winds are very variable at all seasons and the term "predominant wind" has little significance in this area. An average of all winds would give a direction southward of south-west in winter ²⁰ with a lighter and rather more westerly resultant in summer. But such an average is of limited practical value and the most prominent trends which can be discerned are of greater interest. Over the open sea westward of Scotland the most frequent direction is south-westerly almost throughout the year; taking percentage frequencies (for eight ²⁵ points of the compass and calms) the results in round figures are:—

Month	South-westerly quadrant (S., S.W., W.)	Easterly quadrant (N.E., E., S.E.)	Moderate to strong winds (force 4 or more)
October .	50%	N.E. and E. least frequent directions	60% increasing
November to January	50%, mainly S. to S.W. and from S. especially in December	N.E. and E. least frequent directions	70 to 75% (calms, 1% or less)
February .	50%, mainly S.W. to W.	N.E. and E. least frequent directions	70% decreasing
March to May	40%, from S.W. to W. rather than S. to S.W. but not regular	More than 30%; persistence and frequency most marked in these months; from N.E. most frequently early in the period	80 to 45% decreasing
June and July	40%, also increasing tendency for winds from N.W. and N.	Easterlies rapidly declining	35 to 40% (calms, 5 to 10% summer half-year)
August and September	Nearly 50%, with S.W. to W. especially in August; decrease from N.W. to W.	N.E. and E. least frequent directions	35 to 50%, increasing

Local winds.—Local effects on the coasts are too numerous and complex to be described in detail; with reference mainly to the prevalence of squalls in various localities, some important warnings

Charts 5301, 5302.

are given in the appropriate places in the body of this volume. A few of the chief characteristics may be mentioned:—

1. Well-developed land and sea breezes are not very common; they sometimes occur near the Clyde where (at Renfrew) the land breeze is easterly, the sea breeze south-westerly.

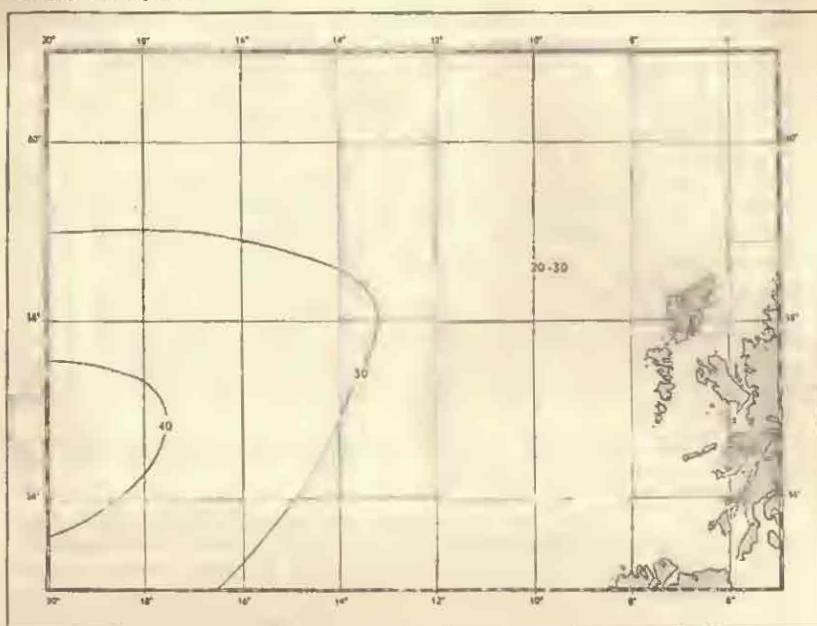
2. Along or near a well-marked valley or in an arm of the sea bordered by high lands, the wind may be deflected and at times its force increased. Examples: at Castle bay the result of winds blowing through Vatersay sound is a great prevalence of winds from west and north-west or in less degree from east and south-east; strong south-westerly winds blow with great force up Kerrera sound, and similar results may be expected in other narrow channels when the general wind is roughly in their direction. There seems to be a widespread tendency for south-westerly winds to be deflected southward near Kintyre, Islay, Jura and Mull, probably also to some extent in the Minch; the high frequencies of southerly winds which are especially to be observed at Tiree and are also apparent at Stornoway are probably not entirely due to strictly local effects; the north-easterlies in spring seem to be similarly deflected northward.

3. Irregular high ground is not to be relied on for shelter from strong winds blowing across it; conditions produced may be equally, perhaps dangerously so, in the lochs and in narrow channels between the islands. Again, wind speeds may vary greatly within short distances owing to different degrees of shelter; perhaps the most noteworthy example is that a gale may be blowing at the north-western entrance to Sound of Mull, while at Tobermory, only five miles away, the wind is light; farther along the sound, south-eastwards, the force of a wind blowing across the channel may depend greatly on distance from the leeward shore. Dangerous squalls in rough weather, baffling or failing winds in quieter conditions, are probably to be expected in almost all the narrow waters, and in some other positions where the wind comes from high or irregular ground.

35. **Gales.**—The period from May to August is likely to be free from gales even in the most exposed places. During the worst months, in winter, there is some evidence that there may be a slight decrease in frequency occurring in November or December, but this is not always definite; October to March show the highest frequencies with a definite peak in mid-season, usually in January. The number of gales experienced at any place depends very much on its exposure. Over the open sea they occur probably on more than 50 days a year and on 10 days or more a month in mid-winter; a similar frequency was found to occur during a short period (6 years) when observations were made in a very exposed position at Butt of Lewis. Observations from light-vessels and lighthouses (some of which are comparatively sheltered) give an average of gales on only about 30 days a year and on about 5 days a month in mid-winter. In still more sheltered positions the number of days a year may average even less than 10. Figures 1 and 2 on page 25 show the distribution of gale frequency during January and July, respectively.

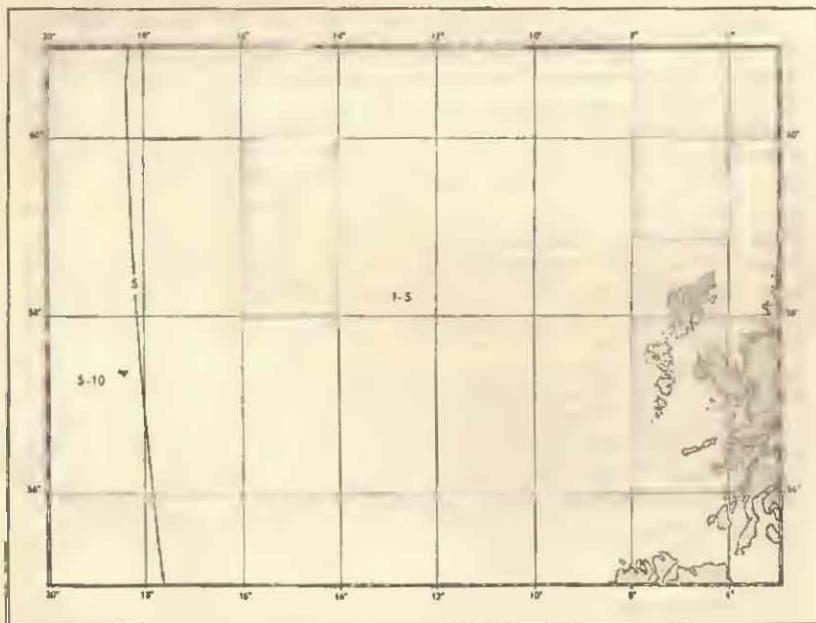
Severe gales, when force 10 or more is recorded by at least one station in the district affected, occur almost exclusively in winter. The proportion of severe gales in the frequencies given above (which apply to force 8 or more) may be as high as one third in the most exposed places, but is usually about one fifth or in sheltered places

Charts 5301, 5302



January.

Fig. 1.

Percentage frequency of gales (Beaufort scale 7 or higher)

July.

Fig. 2.

Percentage frequency of gales (Beaufort scale 7 or higher)

Charts 5301, 5302

even less. The average duration of gales also depends on exposure ; from 5 to 7 hours is not unusual at exposed places in winter, but the interval is likely to be less in sheltered positions and very much reduced in the summer months. Continuous gale for nearly 48 hours has been experienced at Butt of Lewis, where gales on as many as 8 successive days have also been recorded.

The most frequent directions for gales are south-westerly and westerly, but particularly off the southern half of this coast southerly and even south-easterly gales are also not unusual. Gales are almost always associated with depressions and then often veer sharply without decreasing in force. The infrequent gales from the north-easterly quadrant are most likely to occur in spring ; but strong winds from this quarter usually back slowly through north before attaining gale force, or when from between east and south-east very often suddenly veer, and a gale from these directions is usually shortlived.

For details concerning weather forecasts, gale warnings, &c., see Admiralty List of Radio Signals.

For the area covered by the chart, the table gives the average number of gale days per month corresponding to any given percentage frequency. For example, along the 20 contour, 12 gale days a month, on an average, may be expected.

Percentage frequency of gales	1	3	5	10	15	20
Average number of gale days per month	1	2	3½	6½	9	12
Percentage frequency of gales	25	30	35	40	45	50
Average number of gale days per month	14	16	18	20	21	23

20 **Cloud.**—Mean cloud amounts are high at all seasons and the annual variation is small and rather erratic. March to June is on the whole the least cloudy period, but even so the average amounts exceed 5 oktas (eighths) and in most places 6 eighths. An average of 6 eighths is approached and in some places surpassed during several 25 winter months and also in July and August. These figures included all forms of cloud but three quarters or more of the average is made up of low cloud with base below 8,000 ft. (2438^m4) and usually below 5,000 ft. (1524^m0). Regular diurnal variation is not marked and may often be completely suppressed by the cloud sequence of a depression; 30 local variations are likely to be complex owing to the irregularities of the coastline, high ground and exposure. Great variability is in fact to be expected ; with some weather types even during the same day at any particular place, and from place to place over short distances. It is therefore difficult to give exact information for clear 35 or overcast days. The former are rare and days retaining completely cloudless skies nowhere average more than one a month at any time of the year. Days with overcast skies for a large part of the day number about from 6 to 10 a month even in the most favoured places and during the clearest months, March to June ; there are often more 40 than 10 a month at other places and especially during the cloudier months.

Precipitation.—*Rainfall.*—Observations of rainfall at sea provide for an estimate to be made of the average number of days on which precipitation occurs, but give no information about the amounts 45 and duration. With the inclusion of occasions on which falls are slight and brief, there are well over 20 days a month in winter, averag-

Charts 5301, 5302

ing perhaps up to from 25 to 26, and 20 days a month or rather less in summer.

For coastal districts much fuller information may be given ; there are considerable variations from year to year and the summary below 5 refers mainly to averages over a long period. October to December, taken together, are everywhere the wettest months and receive about one third of the total rainfall for the year. Of individual months December is the wettest, while January approaches the preceding three and August is exceptionally wet for summer. April to June 10 is the driest period, with only about one sixth of the annual total; there is little difference between the three months, but June is the most likely to be the driest. September is relatively dry, especially in comparison with August ; the difference is very marked at Renfrew where it is probably connected with a decline in summer showers of a 15 thundery type ; it is hardly perceptible at Stornoway.

Rainfall amounts are greatly influenced by proximity to high ground and irregular changes over short distances are therefore observed. Confining attention to the coastline and neglecting for the moment the narrow lochs, the broad features of the distribution 20 of average annual totals are as follows :

1. Less than 40 inches in only a few small areas—the coast of Wigtownshire including Mull of Galloway and a large part of the coast of Ayrshire ; also some parts of Outer Hebrides, mainly Barra and the small islands near by.

25

2. From 40 to 60 inches—Bute including Arran, Kintyre, Islay, Jura, Colonsay, Tiree, Coll, most of Outer Hebrides, and the mainland coast northward of Skye.

3. From 50 to 80 inches (and in most places above 60 inches)—the coasts of Renfrew, Argyll, Inverness, Mull, Skye, and the mainland 30 eastward of Skye.

The high ground backing the coast is, however, the largest area of heavy rainfall in the British Isles, and greatly increased totals are experienced on proceeding up some of the mainland lochs ; this is also true, though not so striking, in the larger, more mountainous 35 islands. The following annual averages illustrate the point :

	<i>Entrance to the loch</i>	<i>Head of the loch</i>
Lochs Fyne, Torridon	40 to 60 inches	70 to 90 inches
Lochs Etive, Nevis	50 to 70 "	80 to 100 "
Loch Hourn	50 to 70 "	100 to 120 "
Loch Broom	40 to 50 "	50 to 60 "

When days on which precipitation occurs are classified according to the amounts recorded, three useful definitions may be employed : a " rain day " is defined as one with 0·01 inches or more and the data will include any occasion of measurable rain (the observations made at 40 sea referred to above may include a few additional occasions of very slight precipitation, but are roughly comparable) ; a " wet day " is given by 0·04 inches of rain or more ; and a " day of considerable rain " has 0·40 inches or more. The figures for the last of these quoted below are very approximate and may be much exceeded in 45 the localities which record the heaviest totals ; but they give a general indication for coastal areas having more moderate falls. The averages per month are given for the wettest and driest periods, other months being intermediate :

Charts 5301, 5302

		Rain days	Wet days	Days of considerable rain
October to January		21 to 27	16 to 23	4 to 6
March to June		14 to 20	10 to 16	1 to 3

Rainfall is mostly associated with depressions and may be prolonged with those that move slowly. The average duration is longest in winter and in the wetter districts may then exceed 8 hours on about one occasion out of 3 or 4 ; falls exceeding 12 hours are unusual and from 2 to 6 hours' duration is more to be expected. Intense falls may be due to the cold front of a depression and may occur at any time of the year, sometimes accompanied by squalls and thunder. The heat thunderstorms of summer are in most places rare, but Renfrew, near the Clyde, averages about 2 a month in July and August and may then experience brief periods of heavy rain.

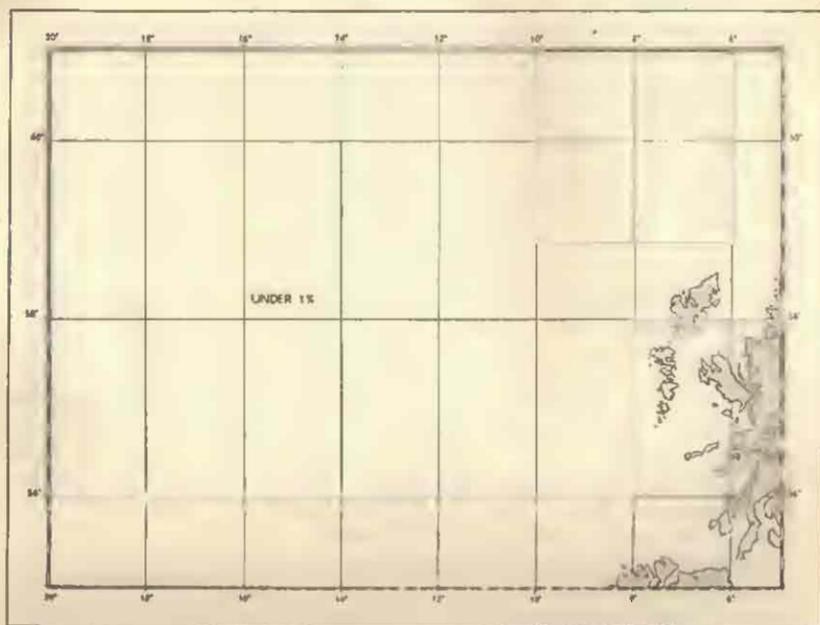
Snow.—Snow is reported every winter and is most frequent from December to March. Falls are usually light and often in the form of showers, with squally winds from a northerly point : but sometimes, when a general spell of cold weather affects the whole country, the approach of a depression causes heavier and more prolonged storms. Snow may lie for long periods on the higher ground and greatly change the appearance of mountains as viewed from the sea. The number of days of snowfall varies more according to situation than to latitude, so that while both Renfrew and Stornoway average from 4 to 5 days a month in winter, Tiree has only from 2 to 3. The highest frequency tends to be in March, while June to September is everywhere free.

Fog and poor visibility.—Except where high ground is obscured by low cloud, or when precipitation seriously affects the visual range, the western coast of Scotland mostly experiences good visibility (greater than 5 miles) ; in many places, especially in summer, visibility is often very good (greater than 10 miles). Figures 7 and 8 on page 29 show the percentage frequency of fog in January and July, respectively.

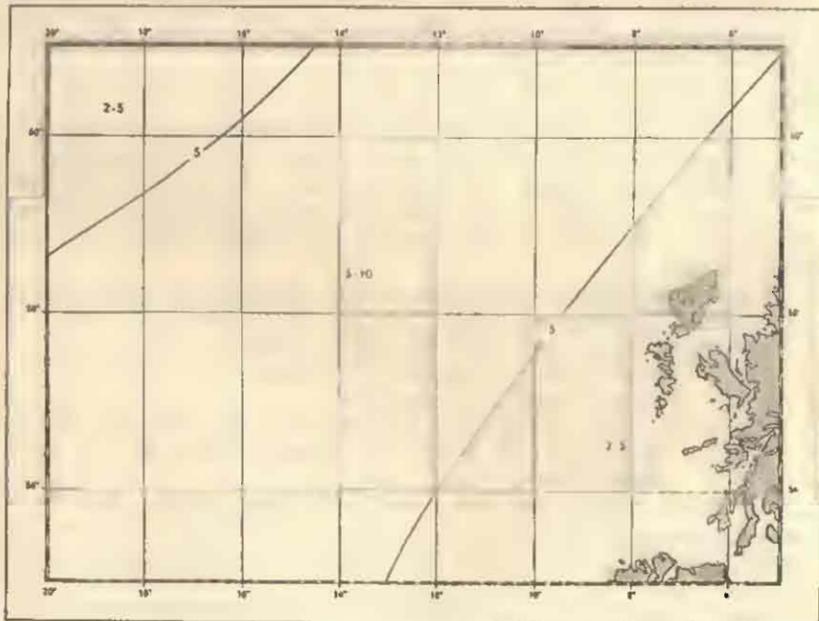
Sea fog.—Sea fog is appreciably less frequent than in coastal and sea areas farther southward. When present it shows no regular diurnal variation and may occasionally be persistent ; the most likely conditions are in summer with south-westerly winds and it may occur even with gales. But visibilities less than half a mile due to this cause are nowhere to be expected on more than 10 days a year ; the average may reach from 2 to 3 days a month in a few places in midsummer, though it is usually very much less. Even the number of days of poor visibility (less than 2 miles, including occasions of fog) does not average more than 3 days a month during the worst summer period at Stornoway and Tiree.

Radiation fog.—Radiation fog is of negligible importance except near the Clyde, though it may occur on isolated occasions in sheltered positions elsewhere ; it is then unlikely to be persistent. Fog of this type is at its worst during quiet clear spells in winter and the effects are much increased by industrial smoke pollution. The poorest visibility is usually shortly after sunrise, but at least in the winter months there will be a few occasions when the fog will persist and even remain dense during the day. Renfrew has visibilities less than half a mile on from 40 to 50 days a year with a well-marked winter maximum averaging from 5 to 6 days a month, and less than one day a month in midsummer ; occasions of poor visibility (less than 2 miles

Charts 5301, 5302.



January,
Fig. 7.
Percentage frequency of fog.



July
Fig. 8.
Percentage frequency of fog.

Charts 5301, 5302.

and including fog) are more irregularly distributed, with averages varying from 6 to 12 days a month at different times of the year. Greenock averages about 80 days of fog a year with from 10 to 12 a month in winter; these winter fogs are sometimes dense on 2 to 3 days a month and may be persistent; poor visibility may occur on a further 2 to 4 days a month throughout the year. Farther out in the Firth, fog and poor visibility are on the whole much rarer and probably more erratic in their occurrence owing to the importance of favourable winds in bringing smoke from the industrial centres. Winds from between north-east and east, especially when fairly light, are most likely to bring the effects to the outer estuary.

Air temperature.—Winter.—The colder half-year is very mild for the latitude and mean temperatures in February, the coldest month, 15 are in most places a little above 40° rather than below. There is no great difference between northern and southern parts, situations more subject to land influences have slightly lower mean temperatures and a daily range averaging about 10° ; but where the effects of the sea are dominant a mean temperature as high as 42° and a daily range 20 of only from 6 to 7° may be expected. Westward over the open sea, February and March are the coldest months; temperatures then average 45° with a very small daily range.

Except on the smaller islands, temperatures below 32° are likely to be recorded during most of the colder months, usually during interruptions of the mild westerly winds. From December to March, these low minimum temperatures occur on about 10 days a month at Renfrew, on from 4 to 6 days a month at Stornoway, but only on one day a month or less at Castle bay. Over the sea such readings are infrequent.

Summer.—July and August are the warmest months with mean 25 temperatures of from 58 to 59° in the southern and about 56° in the northern part. Where sea influences prevail the mean daily range remains small, from about 7 to 8° , but otherwise it is rather larger than in winter and may be from 14 to 16° . Mean temperatures are slightly less over the open sea and the daily range is very small.

35 In the southern part and where land influences are marked temperatures may sometimes be expected to surpass 70° from mid-May to September, but readings above 80° are rare. Northward and westward, with the effect of the cooler sea, these maximum values are reduced by about 5° , or even more on the smaller islands and over 40 the sea.

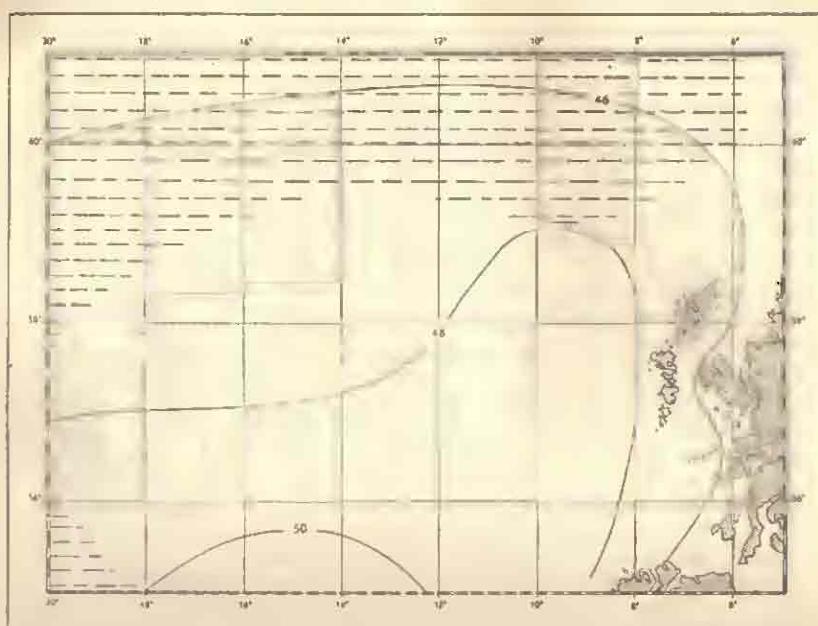
Ice accumulation.—In certain weather conditions ice accumulating on the hulls and superstructures can be a serious danger to ships.

Ice accumulation may occur from three causes.

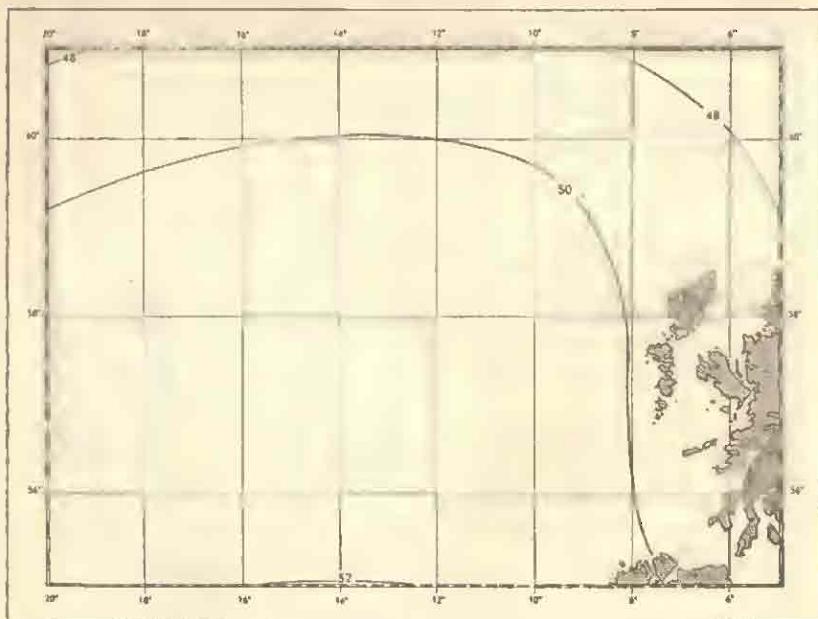
- 45 (i) Fog with freezing conditions, including "frost smoke".
- (ii) Freezing drizzle or freezing rain.
- (iii) Sea spray or sea water breaking over the ship when the air temperature is below the freezing point of sea water (about 28.6°).

Cause (iii) is the only real threat to shipping in the area under 50 consideration, and even then only to a limited extent along the northern part of the area covered by this volume when winds are between north-west and north-east. When the air temperature is below the freezing point of sea water, and the ship is in heavy seas, considerable amounts of water will freeze on the superstructure and on those parts 55 of the hull which are sufficiently above the water line to escape being frequently washed by the sea, especially when gale-force winds last

Charts 5301, 5302.

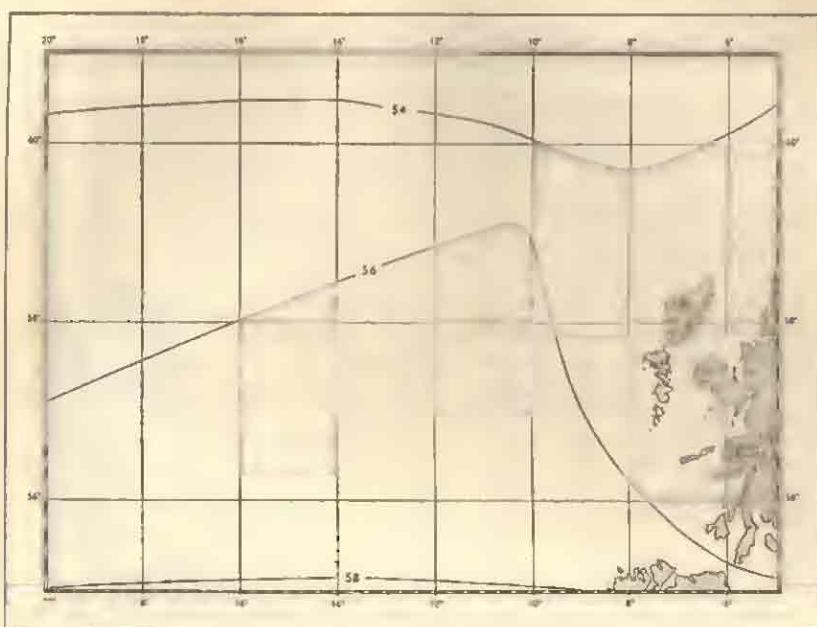


February
Fig. 3.
Mean Sea Surface Temperatures.

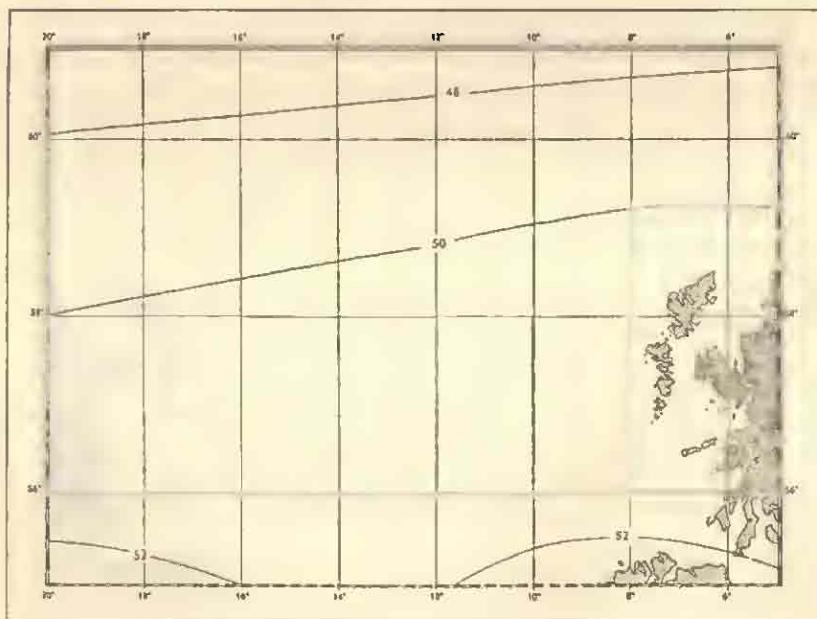


May
Fig. 4.
Mean Sea Surface Temperatures.

Charts 5301, 5302.



August
Fig. 5.
Mean Sea Surface Temperatures.



November.
Fig. 6.
Mean Sea Surface Temperatures.

Charts 5301, 5302.

for 24 hours or more with air temperature of 29° or lower. The prudent course, in these circumstances, is to steer towards warmer water or to seek shelter as soon as possible after the gale begins. Observations of air and sea temperature provide some indication of 5 the likely occurrence of these conditions.

Sea temperature.—Average sea surface temperatures for February, May, August and November are shown in Figures 3 to 6.

Areas in which the difference between sea and air temperature exceeds 3° are shown by shading. Horizontal shading denotes that 10 the sea temperature is greater than the air temperature.

Winter and spring.—The sea temperature is lowest in March but is only slightly below the level for February during this month; changes from January to April are very slow, while the rise from May to June is from about 3 to 4° and almost as much from June to July. 15

Summer and autumn.—The warmest month for sea temperature is August and there is little change from July to September; southward of Skye the change from August to September is barely perceptible. From September to December there is a fairly steady fall of from 2 to 3° per month. 20

Range and deviations.—The mean annual range of sea temperature is about 11° , from 44 to 46° at its coolest to from 55 to 57° in the warmest month. In winter especially there is a trend to warmer waters westward rather than southward, though this may not be apparent during summer in narrow or shallow reaches near the coast. 25 Deviations from the mean values are not likely to be greater than from 5 to 6° in the southern part or from 3 to 4° in the northern, unless disturbed by shallow water effects.

Difference between air temperature and sea temperature.—On the average the air over the sea is slightly warmer than the sea surface 30 from May to August, with a mean difference not exceeding 2° . The air then becomes cooler than the sea, though with only a small difference in September, and the mean deficiency reaches 3 or 4° in December. In the early months of the year the difference declines again until it averages only one or 2° in March; the changeover to 35 relatively warmer air then begins to take place, first near Firth of Clyde early in April but with a lag farther northward and westward, even well into May beyond Outer Hebrides.

Relative humidity.—Average relative humidity is high. The maximum for the day most frequently occurs in the early morning 40 when mean values are in or very near the range from 85 to 90% at all times of the year. The lower values at this time of day occur in spring with a similar but much smaller tendency in late autumn; summer values slightly exceed those of winter and 100% may sometimes be reached in any month. 45

The minimum, occurring usually in the afternoon, shows greater variation with both season and locality. Mean values are still high in winter, reaching at least from 80 to 85% in most places, with an occasional from 95 to 100% in moist winds. Even in midsummer an average over 80% is experienced with open exposures to the sea, 50 but less than 75% on the Clyde. The low values of spring are well marked, averaging from 4 to 6% less than in summer, and the autumn minimum is also usually discernible.

Very low readings are uncommon and values below 50% are probably not to be expected unless close to the shelter of high ground with a flow 55 of dry air from the continent. Diurnal variation is affected by general

Charts 5301, 5302.

weather conditions and may be insignificant in cloudy, windy weather.

Climatic tables.—The tables that follow give statistics for certain places at which there is or has been a regular reporting weather station.
⁵ The figures given are averages, percentage frequencies or extremes as stated. It must be realised that the figures refer to the actual positions in which the weather has been observed and not necessarily to the open sea or to the approaches to ports in the vicinity. These tables for land stations should therefore be consulted with caution with
¹⁰ regard to any element which may be greatly affected by local conditions.

The following notes suggest ways in which conditions over the sea may be different from those at the nearest reporting station for which a table is given:—

1. Pressure is not affected by the transition from land to sea.
- ¹⁵ 2. Temperatures over the sea are less extreme ; they show smaller departures from the mean than those over the land. In winter the air temperature over the sea is usually higher than that at a land station, especially with offshore winds or during the night and early part of the day. In summer the air temperature over the sea is usually lower than that at a land station, especially during the afternoon and when the wind is blowing offshore. In narrow waters conditions will be intermediate between those over the land and the open sea.
- ²⁰ 3. Rainfall at sea is not well represented by conditions at land stations on this coast. In general the rain-bearing winds blow towards the mountainous area behind the coast and rainfall increases rapidly on approaching the higher ground. It is to be expected that rainfall amounts at sea will be less than at coastal stations.
- ²⁵ 4. Mean cloud amounts over the sea are on the average a little less than at most of the land stations for which data are given. The difference is not great and may not be apparent from a small number of observations owing to the larger variability both from day to day and in some weather conditions from place to place along the coast.
- ³⁰ 5. Wind speed is usually greater over the sea than over the land. Effects on wind direction at the coast and the importance of irregularities of coastline are referred to on page 24.
- ³⁵ 6. Fog can be very local. Headlands exposed to south-westward get most sea fog while sheltered localities not far away may get much less. For radiation fog, Renfrew (page 36) gives a very fair idea of conditions in the Clyde, but much clearer weather is likely in the approaches in the Firth.

PLACE—COLMONELL. LAT. $55^{\circ} 08' N.$ LONG. $4^{\circ} 53' W.$ Height above Mean Sea Level, 170 feet.

CLIMATIC TABLE COMPILED FROM 10-40 YEARS' OBSERVATIONS, 1901 TO 1950.

Month	Pressure at M.S.L. Mean in mb.	Air temperature		Relative humidity 0060	Rain	Wind direction																					
		Open G.M.T.				Percentage of observations from																					
		Mean highest in each month	Mean daily max.			No. of days with average cloud cover	No. of days with 1-0-4 in. or more	Avg. fall (1) (2)	N	NE	E	SE	S	SW	W	NW	Calm	N	NE	E	SE	S	SW	W	NW	Calm	
January	1010	45	52	%F.	%F.	0	0	0	20	6	7	8	16	23	14	10	0	—	—	—	—	—	—	—	27	—	
February	1012	45	53	22	90	—	—	—	15	2-9	16	6	7	20	17	19	11	11	1	—	—	—	—	—	20	—	
March	1013	49	58	23	89	—	—	—	16	2-6	17	8	11	15	17	11	13	1	—	—	—	—	—	21	0-9		
April	1013	53	63	25	85	—	—	—	13	2-3	16	8	12	17	16	13	9	16	2	—	—	—	—	—	22	0-8	
May	1014	58	71	30	79	—	—	—	12	2-5	13	9	13	17	16	13	9	17	0	—	—	—	—	—	3-0	—	
June	1014	62	48	75	37	80	—	—	12	2-6	14	8	12	7	11	17	13	9	19	4	—	—	—	—	—	1-9	—
July	1013	65	72	74	42	53	—	—	15	3-2	17	7	7	9	17	19	10	23	4	—	—	—	—	—	1-8	—	
August	1013	64	71	73	41	85	—	—	16	3-1	19	7	4	11	18	12	20	2	—	—	—	—	—	0-1	—		
September	1013	61	48	65	35	86	—	—	15	4-1	16	8	5	18	17	12	13	2	—	—	—	—	—	1-8	—		
October	1013	55	43	63	29	87	—	—	17	5-0	20	9	11	10	16	14	16	11	12	1	—	—	—	—	—	2-3	—
November	1009	49	38	57	25	88	—	—	15	4-7	19	10	8	10	16	14	19	14	11	—	—	—	—	—	9-1	—	
December	1010	46	38	53	23	89	—	—	15	5-2	21	5	6	8	10	16	22	13	11	0	—	—	—	—	—	2-2	—
Means	1011	54	42	79*	18**	85	—	—	177	43-7	309	7	9	7	15	16	17	11	16	2	—	—	—	—	—	2-1	—
Totals	—	—	—	—	—	86†	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Extreme values, No. of years, observations	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	

Meteorological Office, Air Ministry.

Highest recorded temperature.

Lowest recorded temperature.

No. of days with gale, 1918-1935.

No. of days with gale, 1934-1943.

Wind force 1900-1938.

Wind force 1939-1948.

Mean of 24 hours.

Mean of lowest each year.

Mean of highest each year.

Temperature: (Mean daily max. and min.) 1921-50.

(Highest and lowest) 1921-50.

Pressure: 1921-50. Rain: Average fall 1918-50.

Wind force 1918-50.

Wind force 1939-1948.

Mean of 24 hours.

Mean of lowest each year.

Mean of highest each year.

Relative humidity, 25 years.

Wind direction, 25 years.

No. of overcast days 1934-1943.

Wind force 1900-1938.

Mean of 24 hours.

Mean of lowest each year.

Mean of highest each year.

PLACE—RENFREW. LAT. $55^{\circ} 52' N.$ LONG. $4^{\circ} 26' W.$ Height above Mean Sea Level, 19 feet.

CLIMATIC TABLE COMPILED FROM 9-35 YEARS' OBSERVATIONS, 1916 TO 1950.

Month	Pressure at M.S.L. Mean $\frac{q}{4}$	Air temperature	Relative humidity	Cloud	Rain		Wind direction		Percentage of observations from										
					No. of days with average cloud cover		No. of days with rain or more		0700 G.M.T.		1200 G.M.T.		Percentage of observations from						
					(1) under 20% (2) over 60%	Cost	(1) in (2) in.	in.	N	E	S	W	N	E	S	W	SW	NW	
January	10609	43	%F.	%F.	0.9	18	4.0	22	3	5	6	12	28	6	16	2	14	27	12
February	10112	44	°F.	°F.	0.5	17	3.2	16	2	3	5	17	22	6	18	3	16	26	7
March	10113	48	35	38	2.3	20	0.5	15	3	19	17	16	17	5	20	2	12	22	7
April	10111	53	38	63	0.6	16	2.3	13	5	13	17	6	3	10	10	1	15	17	3
May	10114	59	42	71	0.6	14	2.6	15	3	17	24	3	6	10	18	5	17	5	11
June	10114	64	47	76	0.5	67	1	13	2	17	18	4	4	11	21	5	14	2	13
July	10112	66	52	76	42	88	71	17	3	1	18	2	8	12	6	10	3	10	32
August	10112	65	51	74	39	91	73	0.1	18	1	8	14	6	6	22	20	6	10	10
September	10119	61	47	70	33	92	0.2	16	3	19	1	9	18	5	18	3	11	25	2
October	10110	54	43	63	26	91	0.7	18	5	0	6	5	3	23	20	5	14	22	2
November	10108	47	37	57	23	91	0.6	17	2	1	11	6	5	19	3	8	23	31	3
December	10099	43	36	53	20	90	0.1	18	2	1	17	6	7	13	22	4	16	16	6
Means		54	41	60*	15*	89	74	—	40.7	—	3	10	14	5	6	19	22	6	11
Totals		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Extreme values		30	39	30	30	30	15	15	10	35	17	—	—	—	—	—	—	—	—
No. of years' observations		30	30	30	30	30	29	15	15	10	35	17	—	—	—	—	—	—	—

Meteorological Office, Air Ministry.

No. of overcast days, 1934-1942.

Wind force, 1920-1938.

*Mean of 24 hours.

**Mean of highest each year.

***Mean of lowest each year.

†Highest recorded temperature.

‡Lowest recorded temperature.

Temperature (Mean daily max. and min.) 1921-50.

(Highest and lowest) 1921-50.

Pressure: 1921-50. Rain (Average fall) 1916-50.

Wind force, 1920-1938.

Relative Humidity, 25 years.

Wind direction, 25 years.

Wind direction, 35 years.

PLACE—THREE. LAT. 56° 32' N. LONG. 6° 55' W. Height above Mean Sea Level, 22 feet.

CLIMATIC TABLE COMPILED FROM 9-35 YEARS' OBSERVATIONS, 1916 TO 1950.

Month	Pressure at M.S.L. Mean %	Air temperature			Cloud			Rain			Wind direction			1300 G.M.T.			Percentage of observations from No. of days with log > 6700 No. of days with gale force No. of days with wind speed 1300												
		Relative humidity	No. of days with average cloud cover	No. of days with 2 oktas cover	No. of days with 6 oktas cover	No. of days with 1 under	Average fall	No. of days with 0-1 in. or more	N	NE	E	SE	S	SW	W	NW	Calm												
January	100.7	45°	80	8.4	14	4.7	25	10	3	8	27	17	19	2	10	3	7	37	10	20	12	1	4.6	4.7	9	0.0			
February	101.1	45	51	50	8.1	9.9	3.1	18	10	5	9	12	21	14	11	3	12	22	14	18	11	0.4	4.4	4.5	5	0.0			
March	101.2	47	53	54	7.9	1.3	2.6	17	10	8	10	22	21	9	5	4	11	9	23	21	11	8	0.3	3.9	4.2	2	0.3		
April	101.2	57	57	52	7.7	2	10	2.6	17	24	10	19	9	14	7	3	14	13	19	12	11	0	3.9	4.3	3	0.0			
May	101.5	55	64	44	7.7	3	9	3.5	15	20	11	9	20	15	8	6	7	25	9	4	17	12	11	10	12	0.5	3.5		
June	101.4	58	67	41	7.6	5	12	2.8	16	16	9	6	29	14	10	11	11	22	6	18	17	16	12	13	0.7	2.5	0.1		
July	101.1	52	67	43	7.6	13	3.4	20	17	6	11	18	14	14	2	15	4	12	16	16	20	14	3.2	3.6	0.7	0.0			
August	101.2	61	53	6.8	4.5	90	82	0.8	13	3.6	20	11	6	13	20	14	3	13	18	12	16	12	0.6	3.3	3.7	0.4	0.0		
September	101.3	59	61	4.1	87	7.0	0.3	12	4.1	19	6	17	16	15	4	15	7	3	13	17	16	15	17	3.6	3.9	0.2	0.0		
October	100.9	54	47	59	2.7	64	80	0.9	15	5.1	14	6	7	16	16	5	3	14	5	2	18	23	13	1	4.5	5	1.1	0.0	
November	100.8	49	44	63	3.3	64	81	0.4	13	4.7	22	11	5	8	15	19	12	3	12	4	6	18	19	16	8	2.4	4.5	5	0.0
December	100.8	46	40	4.2	3.1	82	1	13	4.7	23	8	4	9	16	21	16	13	11	2	6	11	14	23	10	1	4.4	4.5	5	0.0
Means	101.1	53	46	7.2*	25**	8.6	8.0	13	1.50	44.0	237	14	12	13	1.1	3	16	6	14	18	15	11	1	3.9	4.1	—	—		
Totals	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
Extreme values	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
No. of years' observations	30	30	314	30	30	30	10	10	35	11	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—			

Metereological Office, Air Ministry.

Wind force, 1027-1035.

Mean of 31 hours.

Mean of highest each year.

Mean of lowest each year.

Highest recorded temperature

†Lowest recorded temperature

Temperature (Mean daily max. and min.) 1921-50

(Highest and lowest) 1931-50,

Pressure: 1921-30 Rain (Average fall) 1916-50,

Temperature (Mean daily max. and min.) 1921-50

Relative humidity, 1921-1936,

No. of days clear and overcast sky, 1934-1943,

Wind direction, 1927-1936.

Wind direction, 1927-1936.

PLACE—STORNOWAY. LAT. $58^{\circ} 11' N.$ LONG. $6^{\circ} 21' W.$ Height above Mean Sea Level, 34 feet.
CLIMATIC TABLE COMPILED FROM 8-35 YEARS' OBSERVATIONS, 1916 TO 1930.

Month	Pressure at M.S.L. Mean mb	Air temperature			Rain			Wind direction															
											1300 G.M.T.												
											9780 G.M.T.												
		Relative humidity	No. of days with average cloud cover	Relative humidity	No. of days with average rain fall	Average no. of days with 0.64 in. or more	Cloud	N	NE	E	S	SW	W	NW	Gale	N	NE	E	SE	S	SW	W	NW
		(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	
January	1006	97.5	96.0	97.5	96.0	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	
February	1008	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	
March	1010	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	
April	1010	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	
May	1014	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	
June	1013	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	97.5	
July	1010	61	61	69	43	89	81	97.3	23	3.1	14	5	18	18	11	8	20	7	12	4	8	20	18
August	1010	61	51	67	43	91	80	0.8	23	3.3	17	6	14	20	13	7	18	6	11	5	8	10	12
September	1010	57	48	64	38	91	70	0.6	19	3.7	19	11	7	16	20	13	9	14	3	8	17	16	
October	1093	63	44	60	32	80	82	0.2	21	4.4	22	14	5	2	5	12	15	13	19	8	10	16	12
November	1068	48	40	55	30	89	85	0.3	17	4.5	23	10	3	8	15	21	19	10	24	7	11	24	12
December	1006	45	38	52	27	89	87	0.9	17	4.1	21	6	3	5	12	21	19	14	9	11	6	13	19
Means	1009	63	43	71*	22**	89	81	—	—	9	8	5	8	16	18	12	9	11	6	10	18	18	10
Totals	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Extreme values, No. of years, observations	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	30	80	20	39	15	15	15	10	19	3.5	20	—	—	—	—	—	—	—	—	—	—	—	—

Meteorological Office, Air Ministry.

No. of days with gale, 1931-1935.
No. of days of fog, 1934-43.
Relative humidity, 1921-1935.
No. of days clear and overcast sky, 1924-1935.
Wind direction, 1926-1935.
Wind force, 1926-1935.

* Mean of 24 hours.
** Mean of highest each year.
† Mean of lowest each year.
‡ Highest recorded temperature.
† Lowest recorded temperature.

No. of days with gale, 1931-1935.
No. of days of fog, 1934-43.
Relative humidity, 1921-1935.
No. of days clear and overcast sky, 1924-1935.
Wind direction, 1926-1935.
Wind force, 1926-1935.

CHAPTER II

MULL OF GALLOWAY TO LOCH FYNE.

Chart 2198.

COAST.—Mull of Galloway is the promontory forming the southern part of The Rhins of Galloway and is the southernmost point of Scotland; it is a bold precipitous headland steep-to on its southern and western sides.

The south-eastern extremity of Mull of Galloway (*Lat. 54° 38' N., Long. 4° 51' W.*), on which stands the lighthouse, is connected with the main promontory by a narrow isthmus, on either side of which are East and West Tarbet bays; it attains an elevation of 273 feet (83^m2).

Mull of Galloway, as regards depth of water, may be confidently approached, but the race off it, described below, is dangerous, and it is prudent, in ordinary circumstances, to preserve an offing of 3 miles.

Light. Fog signal.—A light is exhibited, at an elevation of 325 feet (98^m1), from a white tower, 86 feet (26^m2) in height, situated on the south-eastern extremity of Mull of Galloway.

This light, owing to its great altitude, is frequently obscured by haze or by low-lying clouds, and cases have occurred of vessels, supposed to be westward of the light, having run eastward of it into Luce bay.

A fog signal is sounded, at an elevation of 165 feet (50^m3), from a position near this lighthouse.

Storm signals.—Storm signals are displayed from Mull of Galloway lighthouse. See page 6.

Off-lying deep.—Dumping ground.—Beauforts dyke, a long narrow trough, with depths of more than 100 fathoms (182^m9), lies roughly parallel with and from 6 to 8 miles westward of The Rhins of Galloway. A dumping ground for explosives the limits of which are indicated by pecked lines on the chart, is situated in Beauforts dyke.

Tidal streams.—The streams change direction round Mull of Galloway and run about eastward and westward between Isle of Man and the coast of Scotland. At a position 2·7 miles 167° from Mull of Galloway lighthouse, the east-going stream, spring rate 4·5 knots, neap rate 2·5 knots, mean direction 085°, begins — 0530 Belfast (— 0545 Dover); the west-going stream, spring rate 3·7 knots, neap rate 2·1 knots, mean direction 245°, begins + 0035 Belfast (+ 0020 Dover).

Off the Mull, at the position given above, the streams begin nearly as in mid-channel in North channel, or nearly 2 hours later than along the coast northward of the Mull; in consequence of this time difference, and of the change in directions of the streams, a heavy race forms off the Mull, and extends nearly out to the above position. During the east-going stream the race extends north-north-eastward towards

Chart 2198.

Mull of Sinniness in Luce bay; during the west-going stream it extends south-westward and westward. The race is violent and may be dangerous to small vessels, especially with a strong wind blowing 5 against the stream.

Coast. — Lights. — Fog signal. — The Rhins of Galloway, a remarkable peninsula extending about 25 miles north-north-westward from the south-eastern extremity of Mull of Galloway to Milleur point, the western entrance point of Loch Ryan, is hilly, Cairn Pat, the 10 highest part, 15½ miles north-north-westward of Mull of Galloway lighthouse, being 588 feet (179^m2) high. There are many indentations, but no natural harbours along the western coast of this peninsula, which is generally clear of dangers except in the vicinity of Craig Laggan, 4 miles south-westward of Milleur point. This coast should 15 be given a wide berth. *See view facing this page.*

Crammag head lies about 4½ miles west-north-westward of Mull of Galloway.

A light is exhibited, at an elevation of 100 feet (30^m5), from a white tower, 24 feet (7^m3) in height, situated on Crammag head.

20 A fog signal is sounded from this lighthouse.

Portpatrick is entered about 11¾ miles north-north-westward of Crammag head (*Lat. 54° 40' N., Long. 4° 58' IV.*); it is a small natural indentation. Caution is necessary when entering Portpatrick, on account of the tidal streams, which may set across the entrance at a 25 considerable rate (*see page 41*).

The village, with a population of 1063 in 1951, is situated on the shores of the harbour.

Leading lights are occasionally exhibited, the front light, at an elevation of 20 feet (6^m1) and the rear light, at an elevation of 26 feet 30 (7^m9), from a bracket on the corner of a house at Portpatrick. These lights are exhibited when the lifeboat is on service.

A disused lighthouse stands about one cable south-eastward, and the ruins of a castle about 5 cables south-eastward of these leading lights.

35 Black head lies about 1¼ miles north-north-westward of Portpatrick.

Killantringan light is exhibited, at an elevation of 160 feet (48^m8), from a white tower, 72 feet (21^m9) in height, situated on Black head. (*See view facing this page.*) A fog signal is sounded from this lighthouse.

Distress signals are exhibited from Killantringan lighthouse; *see* 40 page 6.

Kinsale tower, situated about 3½ miles northward of Black head and about 1½ miles inland, stands at an elevation of 479 feet (146^m0), but it is almost hidden by trees.

There is a prominent monument on Wierston hill, standing at an 45 elevation of 404 feet (123^m1), about 1½ miles north-north-eastward of Kinsale tower, which is liable to be mistaken for the tower.

Corsewall point lies 8¾ miles northward of Black head.

A light is exhibited, at an elevation of 112 feet (34^m1), from a white tower, 110 feet (33^m5) in height, on Corsewall point. *See view facing* 50 *this page.*

A fog signal is sounded from the lighthouse.

A tower is situated about 1½ miles south-eastward of Corsewall point. Two radio masts, the tops of which have an elevation of 370 feet (112^m8), stand near the coast about 1½ miles south-south-

To face page 10.



Killantringan lighthouse from southward
(Original dated 1884.)



Craig Laggan
beacon
(Original dated 1884.)



Cousewall Point lighthouse
from north-eastward
(Original dated 1884.)



The Moat in line with Cairn Point lighthouse, bearing 154°.
(Original dated 1884.)

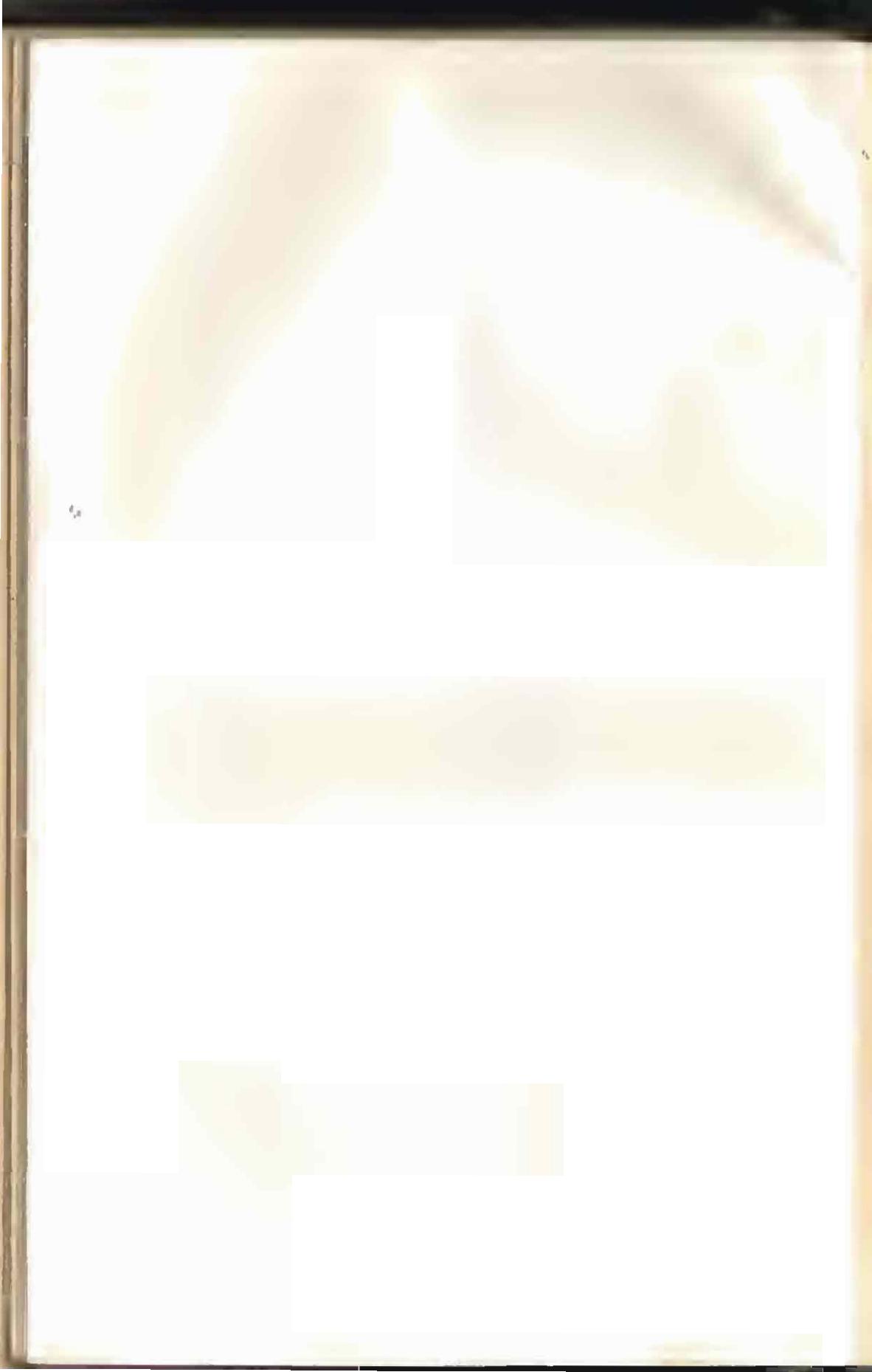


Chart 2198.

westward of Corsewall point. Milleur point lies $2\frac{1}{4}$ miles east-north-eastward of Corsewall point.

Dangers.—Beacon.—Craig Laggan, about $2\frac{1}{4}$ miles south-south-westward of Corsewall Point lighthouse and about 2 cables offshore, is 5 a rock which dries, and lies at the south-western end of a rocky ledge, which fringes the coast between Craig Laggan and Corsewall point; Craig Laggan is marked by a beacon, painted red, and surmounted by a cross over a circular cage. (See view facing page 40). There are some above-water rocks on this rocky ledge; the westernmost of these 10 rocks, known as Oust rocks, are situated about $7\frac{1}{2}$ cables south-westward of Corsewall lighthouse and about 2 cables offshore.

Coastguard.—Life-saving.—There is a coastguard station at Portpatrick; (see page 10).

A motor lifeboat is stationed, and a line-throwing apparatus is 15 maintained, at Portpatrick.

Radio D.F. station.—There is a radio D.F. station at Portpatrick.

Storm signals.—Storm signals are displayed at Portpatrick and Corsewall Point lighthouse. See page 6.

Tidal streams.—Between Mull of Galloway and Corsewall point 20 the streams run in about the direction of the coast; the south-going stream begins + 0445 Belfast (+ 0430 Dover), the north-going stream begins — 0115 Belfast (— 0130 Dover); the spring rate in each direction from 2 to 3 knots off Corsewall point, increasing to about 4 knots off Craig Laggan, and to about 5 knots off Black head and 25 along the coast southward; races occur off Morroch bay, Money head, Mull of Logan, situated about 14, $11\frac{1}{2}$ and $7\frac{1}{2}$ miles north-westward, respectively of Mull of Galloway, and the coast south-eastward of Crammag head. In mid-channel in North channel the streams begin about $1\frac{1}{2}$ hours later than near the coast. 30

Chart 1403.

LOCH RYAN.—Loch Ryan is entered between Milleur point and Finnarts point (*Lat. $55^{\circ} 02' N.$, Long. $5^{\circ} 03' W.$*), $1\frac{1}{2}$ miles east-north-eastward. The western side of the entrance, forming the northern part of The Rhins of Galloway (page 39), is comparatively low, as is also 35 the head of the loch, but the eastern side of the entrance is high and bounded by precipitous cliffs.

In the fairway of Loch Ryan a least depth of 21 feet (6^m4) could, in 1952, be carried to abreast Cairn point, which is situated on the eastern side of the loch, $3\frac{1}{4}$ miles within its entrance. There was a depth of 18 40 feet (5^m5) on the western edge of the prohibited anchorage, indicated by pecked lines on the chart, about one mile north-westward of Cairn point.

For about one mile south-south-eastward of Cairn point there were, in 1952, depths of from 25 to 48 feet (7^m6 to 14^m6) in the fairway and thence the depths gradually decrease to 13 feet (4^m0) about one cable 45 north-north-westward of the East pier at Stranraer, which is situated at the head of the loch.

Lights.—A light is exhibited, at an elevation of 46 feet (14^m0), from a white tower, 50 feet (15^m2) in height, situated on Cairn point. *Chart 1403, plan of Stranraer harbour.* 50

A light is exhibited, at an elevation of 39 feet (11^m9), from a white framework column, 32 feet (9^m8) in height, situated near the head of East pier.

A light is exhibited, at an elevation of 20 feet (6^m1), from a red

Chart 1403, plan of Stranraer harbour.

column, 14 feet ($4^{\text{m}}3$) in height, situated on the head of West pier.

A light is exhibited, at an elevation of 18 feet ($5^{\text{m}}5$), from a red column, 12 feet ($3^{\text{m}}7$) in height, situated on the inner head of West pier.

5 Additional lights are exhibited from East pier when a vessel from Ireland is expected.

Buoyage.—A conical light-and-bell-buoy, painted black, fitted with a radar reflector, and exhibiting a *white interrupted quick flashing light*, showing *quick flashes for seven seconds every fifteen seconds*, is moored 10 2 cables north-eastward of Milleur point.

A can light-buoy, painted red, numbered "2" and exhibiting a *red flashing light every six seconds*, is moored on the eastern side of the channel about $1\frac{1}{2}$ miles north-westward of Cairn point.

15 A conical light-buoy, painted black, numbered "7" and exhibiting a *white flashing light every three seconds*, is moored on the western side of the channel about $2\frac{1}{2}$ cables north-westward of Cairn point.

A conical light-buoy, painted black, marked "Spit", fitted with a radar reflector, and exhibiting a *white flashing light every six seconds*, is moored off the south-eastern extremity of The Spit about $1\frac{1}{2}$ miles 20 southward of Cairn point.

A red conical buoy marks the north-western side of a patch, with a depth of 12 feet ($3^{\text{m}}7$) over it, about three-quarters of a mile west-north-westward of Cairn point (*Lat. $54^{\circ} 59' N.$, Long. $5^{\circ} 02' W.$*).

Tidal streams.—In the outer part of Loch Ryan, at a position 25 in mid-channel off Finnart bay, the in-going stream, spring rate 0·8 knot, begins + 0520 Greenock (− 0545 Dover); the out-going stream, spring rate 1·1 knots, begins H. W. Greenock (+ 0120 Dover); the stream is more or less rotatory, with the in-going stream changing gradually from about 130° to 170° and the out-going stream from 30 about 310° to 350° .

Farther in, at two positions, situated 1·6 cables 250° from Cairn Point lighthouse, and 6 cables south-south-eastward of Cairn point, the streams run in the direction of the channel; the in-going stream, spring rate from 1·2 to 1·3 knots, begins + 0530 Greenock 35 (− 0535 Dover), the out-going stream, spring rate 1·3 knots, begins H.W. Greenock (+ 0120 Dover). On the inshore side of Cairn Ryan south wharf an eddy is usually experienced during the in-going stream so that a set northward is found at the same time as both the in-going and out-going streams in the main channel.

40 There is little stream in the wide inner part of the loch after passing the Spit.

Dangers.—An area of foul ground, the limits of which are indicated on the chart, lies about $1\frac{1}{2}$ miles southward of Finnarts point; another small area of foul ground lies between the above foul area and 45 the coast north-eastward.

A patch, with a depth of 17 feet ($5^{\text{m}}2$) over it, lies about $1\frac{3}{4}$ miles north-north-westward of Cairn point, and about 2 cables off the eastern side of the loch; two patches, each with a depth of 19 feet ($5^{\text{m}}8$) over it, lie, respectively, about $2\frac{1}{2}$ and $3\frac{1}{2}$ cables south-south-westward of the 50 17-foot ($5^{\text{m}}2$) patch. Forbes shoal, with a depth of 18 feet ($5^{\text{m}}5$) over it, lies about $1\frac{1}{2}$ miles north-north-westward of Cairn point, and a shoal, with a depth of 18 feet ($5^{\text{m}}5$) over it, lies about midway between Forbes shoal and the point. Foul areas are situated close northward and about $7\frac{1}{2}$ cables south-eastward of Cairn point.

Chart 1403, plan of Stranraer harbour.

The Moat, a pyramidal grassy mound, about 3 miles south-eastward of Cairn point, in line with the lighthouse, bearing about 154° (see view facing page 40), leads eastward; and the high-water mark at Cairn point in line with Leffnoll farm, a group of buildings near the coast about $1\frac{1}{2}$ miles south-south-eastward of the point, bearing about 148° , leads westward of Forbes shoal; but the latter mark leads over the 18-foot (5^m5) shoal between Forbes shoal and Cairn point (*Lat. $54^{\circ} 59' N.$, Long. $5^{\circ} 02' W.$*).

Foul ground, on which is a rock which dries $2\frac{1}{2}$ feet (0^m8), extends 10 about one cable northward from the coast about one cable eastward of Milleur point. A rock, painted white, lies close offshore about 3 cables south-eastward of Milleur point. The Beef Barrel, a rock 3 feet (0^m9) high, lies close offshore about 6 cables south-south-eastward of Milleur point. 15

A bank, with depths of less than 18 feet (5^m5) over it, fringes the coast between Cairn point and Garry point, about $2\frac{1}{2}$ miles north-north-westward, extending in places $2\frac{1}{2}$ cables offshore.

From a point about 2 miles-south-eastward of Milleur point to Kirkcolm point, $1\frac{1}{2}$ miles southward, foul ground, which dries, extends 20 as much as 4 cables offshore; outside this foul ground a bank, with depths of less than 18 feet (5^m5) over it, extends as much as $8\frac{1}{2}$ cables offshore. Several rocks, with depths of less than 6 feet (1^m8) over them, lie on this bank; and two patches, each with a depth of 12 feet (3^m7) over it, lie 7 cables north-eastward and 6 cables east-north-eastward, 25 respectively, of Kirkcolm point; the former patch is marked on its north-western side by a red conical buoy, see page 42.

The Scar, which is partly above water, extends about $3\frac{1}{2}$ cables south-south-eastward from Kirkcolm point.

The Spit consists of some rocky patches, which dry from 2 to 4 feet 30 (0^m6 to 1^m2), lying on a shallow tongue extending from The Scar to a position about $1\frac{1}{2}$ miles south-eastward of Kirkcolm point.

Above Cairn point (*Lat. $54^{\circ} 59' N.$, Long. $5^{\circ} 02' W.$*) the navigable channel is contracted to a width of about $1\frac{1}{2}$ cables by the shore banks on either side. 35

Caution.—Vessels passing Cairn point should do so at a moderate speed, and if berthing alongside South wharf should proceed with caution, as the tidal streams in the vicinity set obliquely causing a set either towards or away from it.

Anchorage.—Prohibited anchorages.—There is anchorage for 40 small vessels, in a depth of about 14 feet (4^m3), about $4\frac{1}{2}$ cables northward of the head of East pier at Stranraer.

Anchorage is prohibited in an area the limits of which are indicated on the chart, situated north-westward and southward of Cairn point. 45

Cairn Ryan.—Wharf.—South wharf, extending south-south-eastward from Cairn point, is 1,850 feet (563^m9) long, and has depths of 33 feet (10^m1) alongside its western side, and 18 feet (5^m5) alongside its eastern side. About three-quarters of a mile south-south-eastward of Cairn point is a lighterage harbour. 50

Port facilities.—Jetty.—Water is laid on to the wharf, and minor repairs can be carried out to machinery by repair shops at Innernessan, situated about 3 miles southward of Cairn point, but these are normally employed on maintenance of the port and railways.

Chart 1403, plan of Stranraer harbour.

There are twelve 6-ton and four 3-ton cranes on South wharf.

There is a jetty and patent slip at Innermessan; the patent slip can take ships of up to 200 tons.

5 **Stranraer harbour.**—Stranraer harbour, situated at the head of Loch Ryan, is enclosed between two converging piers, the width of the entrance being 270 yards (246^m0). East pier, on which is a railway station, is 2,500 feet (762^m0) in length.

10 Special bye-laws are in force for vessels carrying petroleum and carbide of calcium.

The depths in the entrance between the piers are from 6 to 10 feet (1^m8 to 3^m0), but in 1933 less depths were reported than are shown on the chart, and the whole of the harbour is shallow with the exception of the dredged berthing; about three-quarters of the harbour 15 dries.

In 1944, an area, 750 feet (228^m6) long by 75 feet (22^m9) wide, had been dredged alongside the south-western side of East pier to a depth of 13 feet (4^m0); and an area 960 feet (292^m6) long by 120 feet (36^m6) wide had been dredged alongside the eastern side of West pier to a 20 depth of about 3 feet (0^m9).

There is additional berthing accommodation on the eastern side of East pier (*Lat. 54° 55' N., Long. 5° 02' W.*), where an area 320 feet (97^m5) long by 50 feet (15^m2) wide has been dredged to depths of from 7 to 11 feet (2^m1 to 3^m4).

25 *Chart 1403.*

Directions.—A vessel entering Loch Ryan during north-westerly gales will experience the heaviest sea just outside the entrance, especially during the ebb stream.

A moderate-sized vessel should pass about 1½ cables northward of 30 the light-and-bell-buoy off Milleur point and thence keep not less than 3 cables off the western shore of the loch and pass about half a cable westward of light-buoy, No. 2, off Jamiesons point; thence she should steer to pass close eastward of light-buoy, No. 7; thence one cable westward of the channel, indicated by pecked lines on the chart, as 35 far as Cairn point; thence she should steer to pass about one cable westward of Cairn Point lighthouse, and bring the high water line at the lighthouse in line with the western extremity of Garry point bearing about 340°, astern, which leads up the loch for about one mile, until the light-structure near the head of East pier at Stranraer bears 184°; she 40 should steer for the latter on that bearing, passing about one cable eastward of The Spit light-buoy, which leads through the fairway to within about 3½ cables of East pier at Stranraer.

At night a vessel should steer for Cairn Point light, bearing 147°, until about one mile within the entrance points when she should steer 45 to pass through the channel and thence about one cable westward of this lighthouse. After passing westward of the lighthouse she should steer with Cairn Point light bearing 343°, astern, until the light near the head of East pier at Stranraer bears 184°, when the latter should be steered for on that bearing, passing about one cable eastward of 50 The Spit light-buoy.

Chart 1403, plan of Stranraer harbour.

Stranraer.—Stranraer (*Lat. 54° 51' N., Long. 5° 01' W.*) is situated at the head of Loch Ryan. Conspicuous objects are Shenchan church tower on the western side of the town and the tall chimney at the rail-

Chart 1403, plan of Stranraer harbour.

way station close eastward of the town. In 1951, the population was 8,618.

Communication.—There is regular communication by sea with Larne, in Northern Ireland.

Port facilities.—A small stock of coal is maintained. There are two 5 cranes of 5-tons and 3½-tons capacity, respectively.

Water is laid on the piers. Small quantities of provisions are available.

There is a slipway.

Chart 2198.

Coast.—The Coast between Finnarts point (page 41) and Bennane head, about 7 miles north-north-eastward is clear of dangers outside a distance of 2 cables offshore.

The small village of Ballantrae, which may be identified by two old towers the higher one being round, and the southern one square, and by the bridge over Stinchar river at the back of the village, stands about 15 4½ miles north-north-eastward of Finnarts point. There is a small L-shaped pier protecting an area which dries, where fishing boats lie.

Charts 2164, 2198.

Bennane head is a salient rounded promontory, 320 feet (97^m5) high. There are depths of 5 fathoms (9^m1) close off this head, but during the 20 strength of the tidal streams, at spring tides, a considerable race extends about 9 cables offshore and should be avoided.

Light.—Fog signals.—**Off-lying island.**—Ailsa Craig, a rocky islet of columnar trap approaching in places to basalt, situated 7½ miles north-north-westward of Bennane head, rises abruptly from the sea to an 25 elevation of 1,110 feet (338^m3). It has a conical summit (*Lat. 55° 15' N., Long. 5° 07' W.*), and is very precipitous, except on the north-eastern side, where it slopes and is accessible. *See views facing page 46.*

There is a lighthouse pier at Ailsa Craig, with depths of from 2 to 3 feet (0^m6 to 0^m9) alongside.

A light is exhibited, at an elevation of 60 feet (18^m3), from a yellow brick tower, 35 feet (10^m7) in height, situated on a spit on the eastern side of Ailsa Craig.

There is a radio telephone at the lighthouse.

Two fog signals are sounded on Ailsa Craig, one from near the 35 southern, and the other from near the northern end.

Chart 2164.

Coast.—Dangers.—Between Bennane head and Girvan, about 8 miles north-eastward, the coast is foul in places for about 3 cables offshore; it should be given a good berth, unless bound for Girvan.

From 1½ to 1¾ miles south-westward of Girvan South Pierhead light-structure and about one mile offshore, there are depths of from 22 to 28 feet (6^m7 to 8^m5).

Girvan patch, about 4 cables south-westward of Girvan South Pier-head light-structure (page 47), has a depth of 8 feet (2^m4) over it.

Coastguard.—Life-saving.—There is a coastguard station at Ballantrae (see page 10). A line-throwing apparatus is maintained here; see page 9.

Climatic table.—*See table for Colmonell, situated about 3 miles eastward of Bennane head, on page 35.*

Chart 2159.

Tidal streams.—Near the coast southward of Corsewall point, and close off the point, the south-going stream begins + 0310 Greenock (+ 0430 Dover), the north-going stream begins — 0250 Greenock

30

40

50

Chart 2159.

(—0130 Dover); this stream is local, and a little way offshore the south-going stream begins + 0440 Greenock (+ 0600 Dover), and the north-going stream begins — 0120 Greenock (H.W. Dover). These 5 offshore streams run round the point and along the coast into and out of Firth of Clyde.

The south-east-going North channel stream runs east-south-eastward across the entrance to the Firth of Clyde towards Bennane head, divides off the head, and runs north-north-eastward and south-south-westward along the coast; these streams begin + 0425 Greenock (+ 0545 Dover). The south-south-west-going stream begins to run along the coast northward of Bennane head — 0150 Greenock (— 0030 Dover.)

Between about + 0430 and — 0140 Greenock (+ 0550 and — 0020 Dover) the stream runs south-south-westward along the coast between 15 Bennane head and Corsewall point; the rate of this stream is not known, but may be about 2 knots at springs between Bennane head and Loch Ryan; westward of the entrance to the loch it is weak; after + 0520 Greenock (— 0545 Dover) a branch of this stream runs round Finnarts point into Loch Ryan. Between about — 0140 and 20 + 0430 Greenock (— 0020 and + 0550 Dover) the stream runs north-north-eastward along the coast between Corsewall point (*Lat. 55° 00' N., Long. 5° 09' W.*) and Bennane head; after H.W. Greenock (+ 0120 Dover) this stream is joined, northward of Milleur point, by the out-going stream from Loch Ryan; off Bennane head the stream meets 25 the south-south-west-going stream from the coast northward of the head, and a race forms; the stream is weak between Corsewall point and the entrance to Loch Ryan, and may attain a rate of about 2 knots at springs between the entrance and Bennane head.

During the south-south-west-going stream along this coast, the 30 offshore stream runs south-eastward, towards the coast, and east of about a line from Bennane head to Mull of Kintyre, turns eastward and north-eastward into the Firth; west of the line the stream turns south-westward of the Firth and joins the North channel south-going stream. During the north-north-east-going stream along the coast, 35 the offshore stream runs north-eastward into the Firth, but, westward of the Bennane head to Mull of Kintyre line, it turns gradually northward, and runs towards Sanda island and Mull of Kintyre.

Between Bennane head and Farland head (page 54) the streams run in the direction of the coast to Heads of Ayr, and thence directly 40 across between the Heads and Farland head, and also round the bay between them. The in-going stream begins + 0425 Greenock (+ 0545 Dover), the out-going stream begins — 0150 Greenock (— 0030 Dover); these streams are not strong, but run with some strength off Lady isle and the salient points, and are barely perceptible in Ayr and 45 Irvine bays.

Chart 2164.

Girvan harbour.—Lights.—Beacon.—Girvan harbour and town are situated at the mouth of Girvan river. The harbour, which is used by coasting vessels, has depths of from 3 to 4 feet (0^m9 to 1^m2) and about 50 2,000 feet (609^m6) quayage. The southern pier is 480 feet (146^m3) long and the breakwater on the northern side is 775 feet (236^m2) long; both extend into depths of 2 feet (0^m6). There is also a pier, 410 feet (125^m0) long. In 1947, the breakwater was in ruins and the outer part, which is detached, was marked by a beacon.

To face page 46.



Ailsa Craig,
bearing about
 332° , 6 miles.
(Original dated 1840.)



Ailsa Craig, bearing about
 350° , 3 miles.
(Original dated 1840.)



Turnberry
point, bearing 90° .

Girvan



Green hill, bearing
 108° , $1\frac{1}{2}$ miles.



Knockdounie
hill,

Bessane head,
bearing 188° .

View, in three parts, of coast from Turnberry point to Bessane head.
(Originals dated 1840.)

To face page 6



Turnberry Point lighthouse from northward

Chart 2159.

The depths on the bar vary with freshets and changes of wind, the bar sometimes disappearing altogether, and at other times causing considerable obstruction.

A light is exhibited, at an elevation of 25 feet (7^m6), from a white tower, 20 feet (6^m1) in height, situated on the pier-head at Girvan. 5

A light is exhibited, at an elevation of 11 feet (3^m4), from a post, 11 feet (3^m4) in height, situated at the head of the groyne at Girvan, on the northern side of the harbour.

The town had a population of 5,900 in 1951. Small quantities of 10 provisions are obtainable.

Coastguard.—Life-saving.—There is a coastguard station at Girvan (see page 10). A motor lifeboat is stationed and a line-throwing apparatus is maintained at Girvan (see page 9).

Coast.—Dangers.—Beacon.—Light.—The coast between Girvan 15 and Turnberry point, about $4\frac{1}{2}$ miles northward, is fringed by foul ground extending a short distance offshore. Brest rocks extend about 6 cables offshore about one mile south-south-westward of Turnberry point; they are marked by a red iron pillar surmounted by a cage. Vessels should give this stretch of coast a good berth. See view facing 20 page 46.

Turnberry point (*Lat. $55^{\circ} 19' N.$, Long. $4^{\circ} 50' W.$*) though low, is a noticeable promontory. On its north-eastern side are the ruins of a castle near which stands the lighthouse; there is a cairn on the summit of the point. 25

A light is exhibited, at an elevation of 96 feet (29^m3), from a white tower, 80 feet (24^m4) in height, situated on Turnberry point. See view facing this page. There is a radio telephone at the lighthouse. Distress signals are exhibited from Turnberry lighthouse. See page 6.

FIRTH OF CLYDE.—Firth of Clyde is entered between Turnberry point and Pladda island, about $11\frac{1}{2}$ miles north-westward. v

Submarine exercise areas.—Submarines frequently exercise in the area between Kintyre and Ailsa Craig, in Kilbrannan sound, Inchmarnoch water, Bute sound and in Firth of Clyde. A good lookout is to be kept for them when passing through these waters. See Notice 3a to Mariners No. 8 of each year.

Tidal streams.—The streams are referred to according to the directions towards which they run; in estuaries and rivers, however, they may be called in-going and out-going.

The stream runs about north-eastward into Firth of Clyde whilst 40 it is running south-eastward in North channel, and about south-westward out of Firth of Clyde whilst it is running north-westward in North channel; the directions of the simultaneous streams differ about 120° . The streams are strong in North channel, but weak in the Firth, and though the North channel streams run partly into the Firth, especially during the in-going stream in the Firth, the streams of the Firth have no effect at all on the streams in North channel. 45

In this section, the division between North channel and Firth of Clyde is considered to be a line between Mull of Kintyre and Corsewall point; descriptions of the streams in the Firth, north-eastward of that 50 line, will be found below.

In mid-channel in North channel off the entrance to Firth of Clyde, the south-east-going stream, spring rate about 4 knots, begins — 0610

Chart 2159.

Belfast (+ 0600 Dover); the north-west-going stream, spring rate about 3·5 knots, begins + 0015 Belfast (H.W. Dover). The streams begin considerably earlier near the land; along the coast northward of 5 Mull of Kintyre and close westward of the Mull, the south-going stream begins + 0445 Belfast (+ 0430 Dover) and the north-going stream begins - 0115 Belfast (- 0130 Dover); the spring rate in each direction is about 5 knots. Along the coast southward of Corsewall point and off the point the streams begin at the same times as off Mull of Kintyre, 10 but the spring rate in both directions does not exceed from 2 to 3 knots off Corsewall point (*Lat. 55° 00' N., Long. 5° 09' W.*).

The streams described, off Mull of Kintyre and Corsewall point, are local (see pages 39, 41), and, outside them, the streams run across the entrance to Firth of Clyde about as in North channel; spring 15 rate about half way across is from 1·5 to 2 knots.

The main body of the stream from Mull of Kintyre, which runs during the in-going stream in Firth of Clyde, runs towards Corsewall point, but the stream also runs in an east-south-easterly direction towards Bennane head, and divides off the head and runs north-north-20 eastward and south-south-westward along the coast. The main body of the stream from Corsewall point, which runs during the out-going stream in the Firth, runs towards Mull of Kintyre, but stream also runs towards Sanda island. There are eddies and overfalls, or a race, near Sanda island, and between the island and Mull off Kintyre, during the 25 streams in both directions (see page 62).

The streams are usually referred to as in-going and out-going, but in certain cases their directions are also given.

In the fairway through the outer Firth the streams are very weak and more or less rotatory. At a position 6·9 miles 028° from Ailsa 30 Craig (*Lat. 55° 15' N., Long. 5° 06' W.*), the in-going stream, spring rate 0·4 knot, begins - 0545 Greenock (- 0425 Dover) and runs in variable directions between about 355° and 010° till about - 0100 Greenock (+ 0020 Dover); the direction then changes gradually through east, without a reduction in the rate, and the out-going stream, 35 spring rate 0·6 knot, runs between about + 0300 and + 0600 Greenock (+ 0420 and - 0505 Dover) in directions varying between about 220° and 235°; the direction then changes rapidly westward and northward, and the rate decreases till the in-going stream begins.

At a position 4·4 miles 066° from Holy Island lighthouse, the in-40 going stream, spring rate 0·3 knot, begins + 0500 Greenock (- 0605 Dover) and runs in variable directions between about 050° and 100°; the out-going stream, spring rate 0·3 knot, begins - 0100 Greenock (+ 0020 Dover), and runs in variable directions between about 220° and 280°.

45 In the northern part of the outer Firth the in-going stream divides into three parts, and runs through the channels east and west of the Cumbrae islands and the eastern part of Bute sound; the out-going streams from these channels meet in the Firth. A race forms off Garroch head when the out-going streams, from the coast of Bute and 50 the channel west of Cumbrae islands meet.

Currents.—The area drained by the rivers running into Firth of Clyde is large, and the rainfall considerable; the quantity of water transported by the out-going stream is therefore usually greater than that transported by the in-going stream, but, under normal circum-

Chart 2159.

tances, the excess is not sufficient to cause any appreciable difference in the rates of the in-going and out-going streams. After periods of heavy rain, however, and when the snow is melting, both the duration and the rate of the out-going stream are increased, and those of the in-going stream correspondingly reduced. The difference is noticeable everywhere in the Firth and is probably greatest in the inner part, northward of Garroch head and Farland head; no actual data are available, but it is possible that the stream may run continuously outwards in this part after long periods of very heavy rain, or in warm weather in spring when the snow is melting quickly, especially near neaps.

Land drainage water runs usually only on and just below the surface, and a few fathoms below the surface the in-going and out-going streams are probably not affected.

The streams of the Firth are also affected by wind-driven currents; with strong and long-continued southerly and westerly winds both the duration and the rate of the in-going stream are increased, and those of the out-going stream correspondingly reduced; strong northerly and easterly winds have the opposite effect. Southerly and westerly winds probably have their greatest effect in the inner Firth.

Sea level.—Strong southerly and westerly winds raise sea level in Firth of Clyde; northerly and easterly winds have the opposite effect. These changes are most noticeable, though not greatest, at Mull of Kintyre, where the range of the tide is very small, only about 3 feet (0^m9) at springs. The changes are probably greatest in the inner Firth and entrance to River Clyde, where south-westerly winds will have more effect than north-easterly winds. In Rothesay bay, sea level may be raised as much as 5 feet (1^m5) with strong and long-continued south-westerly winds, and depressed from one to 1½ feet (0^m3 to 0^m5) with strong and long-continued north-easterly winds; at Greenock, with similar winds, the sea level has been raised more than 4 feet (1^m2) and depressed nearly 3 feet (0^m9).

Sea level, especially in the inner Firth and river entrance, is also raised during periods of heavy rain and melting snow, and depressed during periods of very dry weather.

*Chart 2164.***EASTERN SIDE OF FIRTH OF CLYDE.—Coast.—Dangers.**

Between Turnberry point and Dunure harbour are two small bays separated by Barwhin point, about 2 miles north-eastward of Turnberry point (*Lat. 55° 19' N., Long. 4° 50' W.*), that on the south called Maidenhead bay and that on the north Culzean bay.

Culzean castle stands near the cliffs, at the southern end of Culzean bay, surrounded by woods and undulating grassy park-land.

Dunure harbour is protected northward and westward by two breakwaters; it is used by fishing boats and has depths of about 9 feet (2^m7) in it at high water. A small tower marks the south-western side of the entrance.

Charts 2494, 2164.

Maidenhead rocks, about one mile north-eastward of Turnberry point and 2 cables offshore, are above water; Kewn (Keown) rock, about 2 cables north-eastward of Maidenhead rocks and about 2 cables offshore, dries about 5 feet (1^m5).

Charts 2194, 2164.

Maidens harbour is formed south-eastward of Maidenhead rocks by a pier about 470 feet ($143^{\text{m}}3$) long, and two breakwaters on ledges, about 4 feet ($1^{\text{m}}2$) high, north-eastward of the pier. This harbour, 5 which is used by fishing craft, dries for the most part.

About 2 cables north-eastward of Maidens harbour a sewer outfall extends about 2 cables north-westward from the coast; its seaward end is marked by a beacon.

Heads of Ayr, about $2\frac{1}{2}$ miles north-eastward of Dunure harbour, is 10 a headland, 258 feet ($78^{\text{m}}6$) high, consisting of a vertical cliff terminating near its base in steep grassy slopes, with comparatively low land on either side. See view facing this page.

Chart 2494.

Ayr bay.—Ayr bay is entered between Heads of Ayr and Troon, 15 about $6\frac{1}{2}$ miles north-north-eastward. About $1\frac{1}{2}$ miles east-north-eastward of the Heads are the ruins of Greenan castle, standing on the edge of the cliff.

Both St. Nicholas church tower at Prestwick and Prestwick swimming pool building, situated about 4 and $3\frac{1}{2}$ miles south-eastward of 20 Troon harbour entrance, are conspicuous.

Chart 2494, plan of Ayr harbour.

Lights.—Fog signal.—A light is exhibited, at an elevation of 24 feet ($7^{\text{m}}3$), from a red tower with a white lantern, 20 feet ($6^{\text{m}}1$) in height, situated on the head of South pier about $3\frac{1}{4}$ miles north-25 eastward of Heads of Ayr. An auxiliary light is exhibited, at an elevation of 18 feet ($5^{\text{m}}5$), from the same tower.

A fog signal is sounded from this tower.

A light is exhibited, at an elevation of 29 feet ($8^{\text{m}}8$), from an iron framework tower, 29 feet ($8^{\text{m}}8$) in height, situated on the head of 30 North pier (*Lat. $55^{\circ} 28' N.$, Long. $4^{\circ} 39' W.$*).

Leading lights are exhibited, the front light, at an elevation of 33 feet ($10^{\text{m}}1$), from a red tower with a white lantern, 20 feet ($6^{\text{m}}1$) in height, situated close to the pilots' house on the northern side of Ayr harbour; and the rear light, at an elevation of 58 feet ($17^{\text{m}}7$), from 35 a red tower with a white lantern, situated about three-quarters of a cable eastward of the front light-tower.

These lights in line, bearing 098° , lead over the bar in a least depth of 15 feet ($4^{\text{m}}6$). See view facing page 51.

Chart 2494.

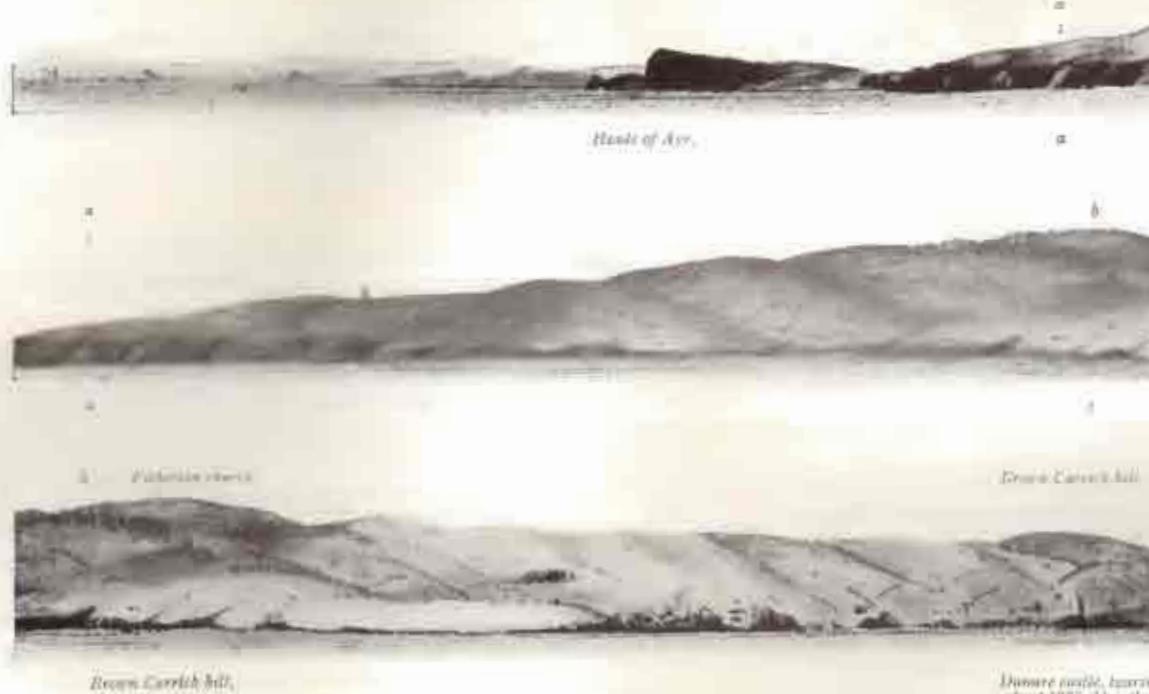
40 A light for the use of aircraft is situated about 3 miles north-eastward of Ayr.

A light is exhibited, at an elevation of 63 feet $19^{\text{m}}2$), from a white beacon situated on Lady isle, about $4\frac{1}{2}$ miles north-westward of South pier-head.

45 **Dangers.—Beacon.**—There are many shoals in Ayr bay and the utmost caution should be used in approaching Ayr harbour.

A rocky shoal, with a least depth of 25 feet ($7^{\text{m}}6$) over it, lies $6\frac{1}{2}$ cables northward of Heads of Ayr. A shoal, with a depth of 27 feet ($8^{\text{m}}2$) over it, lies about $2\frac{1}{2}$ miles north-eastward of Heads of Ayr and one mile offshore. Between these shoals and the coast are a number of sunken rocks, some with depths of less than 6 feet ($1^{\text{m}}8$) over them Blackburn rocks lie about 2 cables offshore about one mile southward of South pier-head. These dangers are covered by the red sector of the light on the head of South pier between the bearings of 012° and 066° .

To face page 40.



View, in three parts, of chart of Ayrshire.
(Original dated 1843.)

Dunure castle, towering
about 113°, 1½ miles.

To face page 54.



*Leading lights in line
Ayrshire 1880.*

View of Ayr harbour from a position
4 cables westward of Ayr High lighthouse.
(Original dated 1812.)



*Mill of Kintyre lighthouse
from southward.
*(Original dated 1813.)**



*Troon
West Pier.*

Troon harbour from westward
(Original dated 1840.)

*Lady Isabella
about 1800 - 1810.*

Chart 2494.

A shoal, with a depth of 5 fathoms ($9^{\text{m}}1$) over it, lies about $2\frac{1}{2}$ miles north-north-eastward of Heads of Ayr and $1\frac{1}{4}$ miles offshore, in the fairway of the approach to Ayr harbour.

Saltpan patches are a number of detached patches, with a least depth of 13 feet ($4^{\text{m}}0$) over them, which extend from one mile north-north-westward to $1\frac{1}{2}$ miles west-north-westward of South pier-head. The conspicuous spire, about $5\frac{1}{2}$ cables south-eastward of South pier-head, bearing about 118° and open south-westward of the light-tower on that pier-head, leads south-westward of Saltpan patches. 10

A shoal, with a depth of 17 feet ($5^{\text{m}}2$) over it, lies about $2\frac{1}{2}$ miles south-south-eastward of Lady isle (*Lat. $55^{\circ} 32' N.$, Long. $4^{\circ} 44' W.$*), and a patch, with a depth of 5 fathoms ($9^{\text{m}}1$) over it, lies 3 cables north-eastward of this shoal. There may be shoaler depths in this part of the bay than are shown on the chart, as the bottom is very irregular. 15

Bell rock is situated about $1\frac{1}{2}$ miles north-north-eastward of the entrance to Ayr harbour. From a point close south-eastward of Bell rock, Saltpan spit, with depths of less than 6 feet ($1^{\text{m}}8$) over it, in places, extends about $1\frac{1}{2}$ miles west-north-westward.

A shoal, with a depth of 28 feet ($8^{\text{m}}5$) over it, lies about $2\frac{3}{4}$ miles west-north-westward of Bell rock. 20

Black rocks, above-water and sunken, extend about 8 cables south-westward from the coast about $3\frac{1}{2}$ miles northward of the entrance to Ayr harbour; an iron beacon, 15 feet ($4^{\text{m}}6$) in height, stands on Black rocks about half a cable within their southern extremity. 25

Lady isle has two towers on it (see view facing this page) and is surrounded by foul ground; shoals with a least depth of 11 feet ($3^{\text{m}}4$) over them, lie about three-quarters of a mile eastward of Lady isle. Lady isle and the shoals in its vicinity, with the exception of the patch, with a least depth of 15 feet ($4^{\text{m}}6$) over it, about $7\frac{1}{2}$ cables eastward of the isle, are covered by the red sector of the light on West pier-head, Troon harbour (page 52), between the bearings of 036° and 090° . 30

The channel between Lady isle and the coast eastward should only be attempted by small vessels with local knowledge. 35

A bank, with depths of 16 to 20 fathoms ($29^{\text{m}}3$ to $36^{\text{m}}6$) over it, lies about 3 miles west-north-westward of Lady Isle light-structure.

Chart 2494, plan of Ayr harbour.

Ayr harbour.—Ayr harbour is formed at the mouth of River Ayr. The entrance, which is 200 feet ($61^{\text{m}}0$) wide, is between South pier on the southern side and a detached breakwater and North pier on the northern side. 40

After heavy rains strong freshets come down the river and tend to sheer vessels towards North pier. In winter, after the breaking up of hard frost, the ice on the ebb stream has swept small vessels out to sea. West-south-westerly winds cause a swell at the entrance. There is a least depth of 15 feet ($4^{\text{m}}6$) on the leading line in the entrance channel to the harbour. 45

On the northern side of the harbour close within the entrance is a tidal basin. The entrance is 60 feet ($18^{\text{m}}3$) wide, a depth of $11\frac{3}{4}$ feet ($3^{\text{m}}6$) over the sill. There are depths of about 14 feet ($4^{\text{m}}3$) in the middle of the basin. 50

Special bye-laws are in force for vessels carrying petroleum and carbide of calcium.

Chart 2494, plan of Ayr harbour.

Pilots.—Tug.—A tug is kept in readiness and a pilot will go out in her, or in a boat, to vessels making the usual signals, and board her off the Bar buoy. For signals to be made by vessels requiring a pilot 5 in thick or foggy weather see page 7.

Caution.—Two balls, disposed vertically, displayed by day, or two red lights, disposed vertically, exhibited at night from the pilot's flag-staff, on the northern side of the harbour, indicate that the channel is obstructed and vessels are prohibited from entering.

10 **Lights.**—See page 50.

Dangers.—Buoyage.—St. Nicholas rock, which dries 2 feet (0^m6), is situated about one cable south-south-westward of South pier-head; it is covered by the red sector of the light on South pier-head between the bearings of 012° and 066°. A shoal, with a depth of 11 feet 15 (3^m4) over it, lies about three-quarters of a cable westward of South pier-head and a similar shoal lies half a cable westward of the western extremity of the breakwater.

A black conical light-buoy, exhibiting a white flashing light every two seconds, known locally as the "Bar buoy", is moored about 3½ cables 20 west-south-westward of the breakwater.

A black conical buoy is moored about 1½ cables eastward of the light-buoy.

Town.—Ayr stands at the mouth of River Ayr. In 1951 it had a population of 44,037. The spire, about half a mile south-eastward of 25 South pier-head, is conspicuous.

Trade.—Large amounts of coal, minerals and fish are both exported and imported.

Communications.—There is, during the summer, communication by sea with Arran and other places in Firth of Clyde.

30 The tidal basin and the principal quays are connected with the railway system.

Port facilities.—Coal is supplied direct from the pit. Vessels can coal alongside the wharf, in depths of from 13 to 16 feet (4^m0 to 4^m9). There are several cranes.

35 Small quantities of provisions are procurable.

There is a patent slip; for details see Appendix I. Repairs to hull and slight repairs to machinery can be executed.

Coastguard. — Life-saving. — Storm signals. — An auxiliary watch is kept at Ayr (see page 10). A line-throwing apparatus is maintained (see page 9). Storm signals are displayed. See page 6.

Chart 2494, plan of Troon harbour.

Troon harbour.—Troon harbour (*Lat. 55° 33' N., Long. 4° 41' W.*) is more easy of access than any other harbour on the coast of Ayrshire; it is formed, on the eastern side of the projecting point dividing Irvine 45 and Ayr bays, by East pier, 3,000 feet (914^m4) long, which encloses a space between itself and the point. This space is divided into an outer and an inner harbour. The outer harbour has good quayage and is sheltered from north-westerly winds by West pier which overlaps East pier, and within which vessels of moderate draught lie in security.

50 See view facing page 51.

A large gas-holder near the shore south-eastward of the entrance to the harbour is conspicuous.

Vessels from infected ports must obtain pratique before entering the harbour.

Chart 2494, plan of Troon harbour.

Special bye-laws are in force for vessels carrying carbide of calcium and petroleum.

The least depth at the entrance to the harbour is 15 feet (4^m6), and the general depth in Outer harbour is from 8 to 14 feet (2^m4 to 4^m3).⁵ There are depths of from 15 to 19 feet (4^m6 to 5^m8) alongside in the tidal basin, and of 19 feet (5^m8) alongside West pier for a length of 300 feet (91^m4). There are also several berths alongside the quays available for working cargo, with depths of from 6 to 11 feet (1^m8 to 3^m4). The greater part of Inner harbour, which is mainly a timber ¹⁰ hasin, dries; it has an entrance 36 feet (11^m0) wide, crossed by a drawbridge.

The tidal basin, on the south-western side of the harbour, is 370 feet (112^m8) long, 260 feet (79^m2) wide, and the entrance is 39 feet (11^m9) wide, with a depth of 14 feet (4^m3) over the sill. There are 6,160 feet ¹⁵ (1877^m6) of quayage, with depths of from 15 to 20 feet (4^m6 to 6^m1) in the basin.

Lights.—Fog signal.—A light is exhibited, at an elevation of 35 feet (10^m7), from a white stone tower, 25 feet (7^m0) in height, situated on West pier-head. A fog signal is sounded from this light-²⁰ tower.

A light is exhibited, at an elevation of 22 feet (6^m7), from a post on a dolphin, 13 feet (4^m0) in height, situated close-east-south-eastward of the light-tower on West pier.

A light is exhibited, at an elevation of 19 feet (5^m8), from a red ²⁵ column, 14 feet (4^m3) in height, situated on East pier-head.

Caution.—Two black balls, disposed vertically, displayed by day, or two red lights, similarly disposed, exhibited at night, from the flagstaff at the pilot's house, about $1\frac{1}{2}$ cables south-south-westward of West pier-head (*Lat.* $55^{\circ} 33' N.$, *Long.* $4^{\circ} 41' W.$), indicate that the harbour ³⁰ is blocked and that entry or exit is prohibited.

Chart 2494.

Dangers in approaches.—Beacons.—Buoys.—Troon rock, about $1\frac{1}{2}$ miles westward of West pier-head, has a least depth of 17 feet (5^m2) over it; this rock lies with the West Pier light bearing 090° , the dividing ³⁵ line between the white and red sectors of that light.

A shoal, with a depth of 25 feet (7^m6) over it, lies about 8 cables westward of West pier-head.

Foul ground extends about 2 cables westward from West pier at Troon; the northern edge of this foul ground is marked by a black ⁴⁰ conical buoy.

Mill rock, which dries one foot (0^m3), lies about $4\frac{1}{2}$ cables north-eastward of West pier-head; it is marked on its western side by a red can buoy.

Lappock rock, which dries 2 feet (0^m6), lies about $1\frac{1}{2}$ miles north-⁴⁵ north-westward of West pier-head; it is marked by a red stone tower surmounted by a ball.

Between Mill and Lappock rocks the bottom is very uneven, with depths of from 16 to 36 feet (4^m9 to 11^m0); the westernmost danger is a patch, with a depth of 16 feet (4^m9) over it, situated half a mile ⁵⁰ south-south-westward of Lappock Rock beacon.

A beacon, consisting of a post surmounted by a globe, 9 feet (2^m3) high, marks a sewer outfall about 9 cables eastward of Lappock Rock beacon.

Chart 2494.

Directions.—A vessel with local knowledge approaching from southward can proceed through Ayr bay, passing eastward of Lady isle and the dangers in its vicinity. Thence she should steer to pass westward and northward of the black conical buoy marking the foul ground westward of West pier and between this buoy and Troon rock. Thence she should round West pier-head and proceed to the desired berth.

Chart 2494, plan of Troon harbour.

- 10 **Town.**—Troon (*Lat. 55° 33' N., Long. 4° 41' W.*) had a population of 10,063 in 1951. There is communication by sea with various British and foreign ports.

Life-saving.—A motor lifeboat is stationed at Troon; *see page 9.*

- 15 **Port facilities.**—There are two dry docks; for dimensions of the larger *see Appendix I.*

Coal can be obtained alongside the quays or in the basin; there are several cranes. Fresh provisions and stores can be procured. There is every facility for working cargo and the quays are connected with the 20 railway system.

There is a hospital for seamen.

Tugs are always in readiness and may be obtained by making the usual signal by day, or at night by exhibiting two *white* lights, disposed vertically.

- 25 **Trade.**—The principal exports are coal and road metal; the chief imports are timber and fish.

Chart 2494.

Coast.—Between Troon and Ardrossan, about 7 miles north-westward, the coast forms two bays, the southern and largest being 30 Irvine bay; the northern one is a small indentation called South bay, which is quite open and affords no anchorage.

Charts 2131, 2164.

The coast between Ardrossan and Farland head, $4\frac{1}{2}$ miles north-westward, is generally sandy, with occasional steep braes, farmhouses 35 and coppices. Farland head is steep-to on its western side.

Explosives dumping ground.—A dumping ground for explosives, now disused, the limits of which are indicated on the chart by a circular pecked line, with a radius of 2 miles, lies about 6 miles westward of the entrance to Ardrossan harbour.

Chart 1404.

Dangers.—Beacons.—**Light.**—Horse isle, the south-eastern extremity of which is situated about $5\frac{1}{2}$ cables west-north-westward of Ardrossan Lighthouse pier, is only a few feet high. It is partially covered with grass, and has on its southern point a conspicuous white 45 stone tower, with three windows on either side. Horse Isle shelves are rocky spurs, extending about $1\frac{1}{2}$ cables south-westward of the southern point of Horse isle; an iron beacon surmounted by a globe, 23 feet (7^m0) in height, stands near the south-western end of Horse Isle shelves. Southward of Horse Isle shelves the bottom is rocky and uneven, a 50 depth of 17 feet (5^m2) lying $3\frac{1}{2}$ cables southward of Horse Isle beacon-tower (*Lat. 55° 39' N., Long. 4° 50' W.*); a shoal, with a depth of 21 feet (6^m4) over it, is situated $3\frac{1}{2}$ cables westward of the same beacon. Horse isle is connected with the mainland north-eastward by a bar, with a depth of 6 feet (1^m8) over it.

Chart 1404.

A light is exhibited, at an elevation of 57 feet ($17^{\text{m}}4$), on the white stone tower on Horse isle.

A bank, with a depth of 4 fathoms ($7^{\text{m}}3$) over its outer end, extends one mile southward from Farland head. 5

Tidal streams.—See page 45.

Submarine cables.—**Beacons.**—Submarine cables, the positions of which are indicated on chart 2164, are laid across Firth of Clyde, from a position close eastward of Farland head to Island of Arran. See page 7. Both landing places are marked by beacons. 10

Chart 2494.

Irvine harbour.—Irvine harbour, $3\frac{1}{2}$ miles northward of Troon harbour entrance, at the confluence of Rivers Irvine and Garnock, is protected from all winds, and is suitable for vessels not exceeding $14\frac{1}{2}$ feet ($4^{\text{m}}4$) draught. Its quays and wharves, which are on the southern side about $3\frac{1}{2}$ cables from the entrance, are 1,935 feet ($589^{\text{m}}8$) long, are provided with cranes, with lifting capacities up to 30 tons, and are connected with the general railway system. 15

The depth on the bar is from 14 to 15 feet ($4^{\text{m}}3$ to $4^{\text{m}}6$) at high water springs, and 13 feet ($4^{\text{m}}0$) at neaps. The depth on the bar is affected 20 by the wind, fresh southerly winds increasing, and northerly winds decreasing, the depth; freshets from the river sometimes reduce the depth by one foot ($0^{\text{m}}3$) or more. Generally, a lee-going stream sets across the entrance during northerly or southerly winds, so it is not advisable for vessels to attempt to enter without local know- 25 ledge.

There are depths of from 10 to 14 feet ($3^{\text{m}}0$ to $4^{\text{m}}3$), mud and sand, alongside the wharf.

Lights.—**Beacons.**—A light is exhibited, at an elevation of 26 feet ($7^{\text{m}}9$), from an iron framework beacon, 27 feet ($8^{\text{m}}2$) in height, situated 30 on the south-eastern side of the entrance to Irvine harbour.

A light is exhibited, at an elevation of 30 feet ($9^{\text{m}}1$), from a wooden pile beacon, 31 feet ($9^{\text{m}}4$) in height, situated on the north-western side of the entrance.

Leading lights are exhibited, the front light, at an elevation of 35 33 feet ($10^{\text{m}}1$), from a white mast, 33 feet ($10^{\text{m}}1$) in height, situated on the south-eastern side of the harbour about $2\frac{1}{2}$ cables north-eastward of the light-structure on the south-eastern side of the entrance; and the rear light, at an elevation of 50 feet ($15^{\text{m}}2$), from a white mast, 50 feet ($15^{\text{m}}2$) in height, situated about $1\frac{1}{2}$ cables north-eastward of the 40 front light-mast. These lights in line, bearing 053° , lead to the entrance. Within the entrance the channel up to the wharves is marked by perches.

Caution.—Two black balls displayed by day or two red lights exhibited at night from a flagstaff at the pilots' house, indicate that 45 vessels must not enter or leave the harbour without permission.

Anchorage.—The best anchorage outside the bar is a little north-westward of the entrance, in depths of from 8 to 12 fathoms ($14^{\text{m}}6$ to $21^{\text{m}}9$), good holding ground. This anchorage is very open and should only be used in fine weather or with offshore winds. 50

Tidal signals.—The following signals, which indicate the depth in mid-channel at the entrance, are shown from a mast on a tower (*Lat. $55^{\circ} 36' N.$, Long. $4^{\circ} 41' W.$*), situated close southward of the front leading light-mast.

Chart 2494.

<i>By day.</i>	<i>At night.</i>	<i>Depth in feet.</i>
One ball.	One green light.	7 (2m1)
Two balls	One red light.	8 (2m4)
5 Three balls.	One white light.	9 (2m7)
Four balls.	One green under one white light	10 (3m0)
Five balls.	One red under one white light.	11 (3m4)
Six balls.	Two white lights.	12 (3m7)
Seven balls.	One green under two white lights	13 (4m0)
10 Eight balls.	One red under two white lights.	14 (4m3)
Nine balls.	Three white lights.	15 (4m6)
Ten balls.	One green under three white lights.	16 (4m9)
Eleven balls.	One red under three white lights.	17 (5m2)
Twelve balls.	Four white lights.	18 (5m5)

15 **Bye-laws.**—Bye-laws regulating the use and working of the harbour are in force.

Special bye-laws are in force with regard to explosives. Vessels not under the control of Nobel's Explosives Company must not anchor in the fairway of Garnock river off Nobel's wharf.

20 **Town.**—The town of Irvine is situated about $1\frac{1}{4}$ miles inland on River Irvine; the population in 1951 was 14,746. It has ship-building and engineering works, foundries, grain stores, etc.

There is communication by sea with Dublin, Belfast, Glasgow, Liverpool and Fleetwood.

25 **Pilots.**—Pilots are always available.

Port facilities.—There is a slipway; for details see Appendix I. A tug is available.

30 **Trade.**—The chief exports are coal, bricks, fireclay goods and chemicals; the imports are grain, salt, saltes, limestone, scrap metal and timber.

Saltcoats harbour.—Saltcoats harbour, $3\frac{1}{2}$ miles west-north-westward of Irvine, is formed by a pier extending west-south-westward from the coast, with a spur extending from it about 90 yards (82m3) from its head. A reef, which dries 4 feet (1m2), extends from the pier.

35 On the northern side of the harbour is a group of rocks, which dry.

The harbour dries out as far as the spur. There are depths of a few feet between the spur and the pier-head, but there is no protection outside the former, especially with winds between south-south-west and west, which cause considerable swell.

The Town Hall steeple in line with the extremity of the spur leads clear of the dangers on the north-western side of the harbour (*Lat. 55° 38' N., Long. 4° 47' W.*). The population, in 1951 was 13,108.

Chart 1404.

45 **Ardrossan harbour.**—Ardrossan harbour is situated on the northern side of a low projecting point, from the south-western side of which rocks and shoals extend a quarter of a mile offshore. The harbour entrance, 380 feet (115m8) wide, is between the head of Lighthouse pier, which extends northward from the low projecting point, and the southern extremity of the breakwater, which is situated on Crinan rock and from which the breakwater extends about $2\frac{1}{2}$ cables northward.

Special bye-laws are in force for vessels carrying petroleum and carbide of calcium.

Chart 1404.

There is a least depth of 20 feet ($6^{\text{m}}1$) in the entrance, and general depths of from 10 to 18 feet ($3^{\text{m}}0$ to $5^{\text{m}}5$) within the breakwater.

Pilots.—Pilotage is not compulsory, but licensed pilots are always available, and will board a vessel making the usual signal from the pilot launch. For the signal to be made in thick or foggy weather, see page 7.

Lights.—Fog signal.—A light is exhibited, at an elevation of 37 feet ($11^{\text{m}}3$), from a white tower, 29 feet ($8^{\text{m}}8$) in height, situated on the head of Lighthouse pier. A fog signal is sounded from this 10 lighthouse.

A light is exhibited, at an elevation of 41 feet ($12^{\text{m}}5$), from a red gantry, 21 feet ($6^{\text{m}}4$) in height, situated on the head of the breakwater.

Two green lights, disposed vertically, are exhibited, at elevations of 23 and 20 feet ($7^{\text{m}}0$ and $6^{\text{m}}1$), from a mast 13 feet ($4^{\text{m}}0$) in height, 15 situated on the northern extremity of Winton pier, about $1\frac{1}{2}$ cables east-north-eastward of the head of Lighthouse pier.

Caution.—Two balls, disposed vertically, are displayed by day, and two red lights, disposed vertically, are exhibited at night, from a flagstaff at the watch-house on Lighthouse pier, and also from a 20 flagstaff on Montgomerie pier, when vessels should not enter the harbour. (*Lat* $55^{\circ} 38' N.$, *Long.* $4^{\circ} 49' W.$).

Two red lights, disposed horizontally, exhibited on the outer end of the berth at Montgomerie pier, indicate that a tanker is berthed at the oil jetties on the northern side. 25

Two red lights, disposed horizontally, on the swing bridge indicate that it is closed; red lights on the sides of the entrance indicate that it is open.

Dangers in the approach.—**Buoy.**—**Beacon.**—Campbell rock, awash, lies about 5 cables south-south-eastward of Lighthouse Pier 30 lighthouse. Castle craigs are a ledge of rocks extending $1\frac{1}{2}$ cables south-south-westward from the point about $4\frac{1}{2}$ cables south-eastward of the head of Lighthouse pier, to within half a cable of Campbell rock. Eagle rock, above water, lies $2\frac{1}{2}$ cables southward of Lighthouse Pier light-house. Shoals, with a least depth of 16 feet ($4^{\text{m}}9$) over them, lie about 35 one cable southward of Eagle rock and between is a rock, awash; between Eagle rock and the coast eastward are ledges of rock.

The above dangers are covered by the red sector of Lighthouse Pier light between the bearings of 317° and 035° . The north-western extremity of Lighthouse pier in line with the tower of Seafield house, 40 $7\frac{1}{2}$ cables north-north-eastward, bearing $025\frac{1}{2}^{\circ}$, leads north-westward of these dangers.

There are several detached rocks between the eastern side of Horse isle (page 55) and the coast eastward; the channels between these rocks are only available for small vessels with local knowledge. 45

West Crinan rock, which dries 2 feet ($0^{\text{m}}6$), lies about $1\frac{1}{2}$ cables westward of the Breakwater light-structure; depths of 3 fathoms ($5^{\text{m}}5$), or less, extend about a quarter of a cable around this rock. All these dangers are covered by the red sector of Breakwater light, between the bearings of 041° and 126° . A red can buoy is moored southward 50 of West Crinan rock.

A beacon surmounted by a red cone, 6 feet ($1^{\text{m}}8$) high, marks the end of a sewer outfall laid across the sands northward of the harbour.

Submarine cable.—A submarine cable, which is indicated on the

Chart 1404.

chart, is laid across the harbour entrance between Lighthouse pier and the breakwater. A notice warning vessels not to anchor in its vicinity, is painted on the pier-head (*Lat. 55° 38' N., Long. 4° 49' W.*).

5 See page 7.

Quayage and wet docks.—Between Lighthouse pier and Winton pier is Old tidal basin leading into Old dock; the bright close westward of Winton pier is shallow and rocky. Old tidal basin has 838 feet (255^m4) of quayage and a least depth of 9 feet (2^m7).

10 Between Winton and Montgomerie piers, the head of the latter being situated about a quarter of a cable east-north-eastward of the light-mast on Winton pier, are Eglinton tidal basin and Eglinton dock. Eglinton tidal basin has 1,740 feet (530^m3) of quayage, and depths of 18 feet (5^m5). Eglinton dock has 2,590 feet (789^m4) of quayage, *15* and the depth maintained is in accordance with the requirements of vessels making use of this dock; vessels drawing 28 feet (8^m5) have been accommodated; the south-eastern wall of this dock is not vertical.

Alongside the heads of Lighthouse, Winton, and Montgomerie piers there are berths for vessels with depths of from 13 to 18 feet *20* (4^m0 to 5^m5) alongside; in the berth, on the northern side of Montgomerie pier, there is a depth of 28 feet (8^m5) alongside, and this berth will accommodate a vessel 580 feet (176^m8) in length and 70 feet (21^m3) in breadth.

All the piers and docks are furnished with cranes for working cargo, *25* and are connected with the railway system.

Anchorage.—Anchorage may be obtained, in depths of from 12 to 15 fathoms (21^m9 to 27^m4), with the lighthouse on the southern side of the entrance to the harbour bearing 034°, distant about one mile.

Directions.—A vessel approaching Ardrossan from southward *30* should give Campbell and Eagle rocks a berth of at least 2 cables.

A vessel approaching from south-westward should steer for the head of Lighthouse pier, bearing about 058°, until within about 2 cables of it. She should then proceed very slowly through the entrance of the harbour, between Lighthouse pier and the breakwater.

35 If proceeding into Old tidal basin a vessel may run a hawser from her starboard bow to Lighthouse pier. If a vessel is intending to enter Eglinton tidal basin she may run a hawser from her starboard bow to the northern extremity of Winton pier.

At night a vessel should approach with Lighthouse Pier light bearing 058° and showing *white*, or with the breakwater light, bearing not more than 041° and showing *white*. By keeping on these bearings a vessel will approach the entrance to the harbour clear of all dangers to within about three-quarters of a cable of Lighthouse pier; the pier-head should be rounded at the distance of about 20 yards (18^m3).

45 Only vessels with local knowledge can enter the harbour at night without a pilot.

Ardrossan.—The town of Ardrossan had a population in 1951 of 8,799.

There is regular communication by sea with Arran and Northern *50* Ireland; also, during the summer, with Isle of Man.

Coastguard.—**Life-saving.**—**Storm signals.**—A line-throwing apparatus is maintained at Ardrossan; *see page 9.*

Storm signals are displayed from a flagstaff at Montgomerie pier; (*Lat. 55° 38' N., Long. 4° 49' W.*); *see page 6.*

Chart 1404.

Port facilities.—Supplies of all kinds are available; water is laid on to the quays.

Coal is procurable from pits in the neighbourhood. Vessels can coal in Eglinton dock or Eglinton tidal basin.

Fuel oil can be supplied from Montgomerie pier or from the northern wall of Eglinton dock.

There is a dry dock, for dimensions of which see Appendix I. Repairs to hull and machinery can be executed.

Tugs are available.

There are a number of cranes up to 40-tons lifting capacity.

Trade.—The chief exports are coal, oil, petrol, asphalt and steel; the imports are iron ore, limestone, oil, petrol, timber and scrap metal.

Chart 2144.

WESTERN SIDE OF FIRTH OF CLYDE.—Mull of Kintyre 15 to Campbeltown.—Peninsula of Kintyre is situated between Firth of Clyde and the Atlantic ocean. It is connected with the mainland by a narrow isthmus, situated 36½ miles north-north-eastward of the southern extremity of the peninsula, which separates East Loch Tarbert from West Loch Tarbert.

Mull of Kintyre, the south-western extremity of the peninsula, lies about 11 miles north-eastward of Tor point (chart 2515), the nearest point on the coast of Northern Ireland; it is bold and steep-to. A strong tidal race is sometimes caused southward and south-westward of it by a southerly gale opposing a south-going stream; see page 61. 20 25

Light.—Fog signal.—Radiobeacon.—A light is exhibited, at an elevation of 297 feet (90^m5), from a white tower, 38 feet (11^m6) in height, situated about three-quarters of a mile northward of Mull of Kintyre. This light is often obscured by the haze over the high land. See view facing page 51.

A fog signal is sounded from the Mull of Kintyre and a radiobeacon transmits from the lighthouse (*Lat. 55° 19' N., Long. 5° 48' W.*).

Storm signals.—Storm signals are displayed from a flagstaff near the lighthouse. See page 6.

Coast.—Dangers.—Light-buoys.—The coast between Mull of 35 Kintyre and Sròn Uamha, the southern extremity of Peninsula of Kintyre 1½ miles east-south-eastward, is bold and rocky. There is a tidal race at times off Sròn Uamha. Between Sròn Uamha and Rubha McSbannuich, 5 miles eastward, there is an indentation, in about the middle of which is Carskey bay. Both entrance points of Carskey bay 40 are fringed with rocks; Carskey rocks extend 2 cables off the western entrance point; the ledge off Keil point, the eastern entrance point, extends about 2 cables offshore and is continuous as far as Dunaverty point, three-quarters of a mile eastward, where rocks dry 2 feet (0^m6) as much as 1½ cables offshore.

There are two noticeable dark mounds on Dunaverty point, and on the eastern side of the point are a small cove and Southend village.

A rock, about 3 cables east-south-eastward of Dunaverty point and 2 cables offshore, has a depth of one foot (0^m3) over it; there is a depth of 5 fathoms (9^m1) close southward of this rock, and of one fathom (1^m8) between the rock and the coast.

Barley ridges are rocky reefs, extending about 2 cables offshore, about one mile eastward of Rubha McShannuich; Macosh rocks, the

Chart 2144.

western part of these reefs, dry 2 feet (0^m6), and are marked on their southern side by a red can light-buoy, exhibiting a *red flashing light every six seconds*.

- 5 Dùn na h-Oighe, about $2\frac{1}{2}$ miles north-eastward of Rubha McShannich, is a small isolated mound, and there is a granite cross on the point about $3\frac{1}{2}$ cables south-westward of it.

Arranman Barrels, a rocky ledge extending $2\frac{1}{2}$ cables eastward from Dùn na h-Oighe, is marked at its south-eastern end by a red can light-
10 buoy, exhibiting a *white group flashing light showing two flashes every twelve seconds*; they consist of several large stones which dry several feet before the main part of the ledge shows, and bear some resemblance to barrels.

Ru Stafnish lies $3\frac{1}{2}$ miles north-eastward of Dun na h-Oighe. Three
15 radio masts stand about half a mile westward of Ru Stafnish.

Blindman rock, a reef fringing the coast, about $1\frac{1}{2}$ miles northward of Ru Stafnish, has depths of less than 6 feet (1^m8) over it, and extends about $1\frac{1}{2}$ cables offshore.

Anchorage.—Small vessels with local knowledge can obtain
20 anchorage in Carskey bay, with good shelter from north-westerly winds, in depths of from 4 to 5 fathoms (7^m3 to 9^m1). As this anchorage is free from dangers, and only slightly affected by the tidal streams, it is a good place to await the turn of the stream when rounding Mull of Kintyre.

- 25 Carskey house, a large two-storeyed house, about $3\frac{1}{2}$ miles eastward of Mull of Kintyre lighthouse, is conspicuous. An hotel, situated in Keil, on the eastern side of Keil point, about $1\frac{1}{2}$ miles eastward of Carskey house, is also conspicuous.

Off-lying island and dangers.—Buoy.—Light.—Fog signal.—
30 Sanda island (*Lat. $55^{\circ} 17' N.$, Long. $5^{\circ} 35' W.$*) is situated about $1\frac{1}{2}$ miles south-eastward of Rubha McShannich; it is the largest of a group of islets and rocks off that part of Peninsula of Kintyre locally known as Southend coast, and attains an elevation of 401 feet (122^m2). Sanda sound, the channel between Sanda island and the coast, has depths of
35 from 5 to 28 fathoms (9^m1 to 51^m2), but its navigable width is reduced to about one mile by Sheep island, 128 feet (39^m0) high, which is situated about $3\frac{1}{2}$ cables north-north-westward of the north-eastern end of Sanda island. See view facing page 66.

The Ship, a promontory near the middle of the southern side of
40 Sanda island, appears to be detached when viewed from seaward.

The Ship light is exhibited, at an elevation of 165 feet (50^m3), from a white tower, 48 feet (14^m6) in height, situated on The Ship; see view facing page 66. A fog signal is sounded from this light-tower.

Distress signals, details of which are given in the Admiralty List of
45 Lights, are made from this light-tower; see page 6; there is a radio telephone.

Sanda island is fringed by reefs and several islets and rocks lie within
6 cables northward and one mile eastward of its eastern extremity. Paterson's rock, the easternmost of these rocks, dries and is usually
50 marked by breakers; a red can bell-buoy, fitted with a radar reflector, marks the south-eastern side of Paterson's rock, but on account of its exposed position no reliance should be placed on its being in position. Paterson's rock is covered by the *red sector* of The Ship light, Sanda island, between the bearings of 245° and 267° .

Chart 2144.

The eastern extremity of Island Davarr, bearing about 348° and open eastward of Ru Stafnish, leads 2 miles eastward of Paterson's rock.

Coastguard.—Life-saving.—There is a coastguard station at Southend village (see page 10). A line-throwing apparatus is maintained here and also on Sanda island (see page 9).

Tidal streams.—Off the entrance to Firth of Clyde, in North channel, the south-east going stream begins +0440 Greenock (+0600 Dover), the north-west-going stream begins -0120 Greenock (H.W. Dover); the in-going and out-going streams in the entrance begin at 10 about these times, and the difference between the directions of the simultaneous streams in North channel and in the entrance is about 120° . The North channel streams are strong, and affect the streams in the entrance, but the streams in the Firth are weak and have no effect on the North channel streams outside a line joining Mull of Kintyre 15 and Corsewall point.

Local streams run near the southern coast of Peninsula of Kintyre and close off Corsewall point; in the entrance to the Firth; clear of these local streams, the south-east-going North channel stream runs in an east-south-easterly direction towards Bennane head; as this stream 20 crosses the Firth the in-going stream to the firth discharges from it and runs in a northerly direction; off Bennane head the stream divides, and runs north-north-eastward and south-south-westward along the coast. The north-west-going North channel stream runs, from outside the local Corsewall point stream, towards Sanda island and the southern 25 coast of Peninsula of Kintyre; as this stream crosses the Firth it is joined by the out-going stream from the Firth. In the middle of the entrance, about where the North channel and Firth streams meet and separate, the spring rate in both directions is not more than about one knot, but the rate increases nearer the main North channel stream and towards 30 the land on both sides. Along the coast northward of Mull of Kintyre and close off it, the south-going stream begins + 0310 Greenock (+ 0430 Dover), the north-going stream begins - 0250 Greenock (- 0130 Dover); the spring rate in both directions is about 5 knots; this stream runs close round the Mull and eastward to Sanda sound. 35 Outside this inner stream the North channel, or outer stream, which begins to run south-eastward + 0440 Greenock (+ 0600 Dover), and north-westward - 0120 Greenock (H.W. Dover), bends round and runs in directions to and from southward of Sanda island.

At a position about 2 miles 220° from The Ship lighthouse (*Lat. $55^{\circ} 40' 16'' N.$, Long. $5^{\circ} 35' W.$*), in the outer stream, the east-going stream, spring rate 3·4 knots, neap rate 2·1 knots, mean direction 090° , begins + 0450 Greenock (+ 0610 Dover); the west-going stream, spring rate 3·3 knots, neap rate 2 knots, mean direction 270° , begins - 0140 Greenock (- 0020 Dover).

In mid-channel in Sanda sound, the east-going inner stream begins + 0340 Greenock (+ 0500 Dover), the west-going inner stream begins - 0230 Greenock (- 0110 Dover); spring rate in both directions is about 5 knots. Close inshore on the northern side of the sound the streams begin later; the east-going stream begins at + 0455 Greenock 50 (- 0610 Dover), and the west-going stream at - 0120 Greenock (H.W. Dover).

The inner stream runs strongly along the southern coast of the Peninsula of Kintyre but there is little stream in Carskey bay; the

Chart 2144.

Sanda sound stream runs round Ru Stafnish to and from Kilbrannan sound. The outer stream forms part of the stream which runs across the entrance to the Firth; the east-going stream runs, from southward of Sanda island, across the entrance to Kilbrannan sound, towards the southern coast of Island of Arran and Pladda; this stream is called locally the Black tide; the west-going stream southward of Sanda island is part of the stream which has crossed the entrance to the Firth, and is joined, whilst crossing, by the out-going stream from the Firth; from 10 southward of Sanda island this stream runs in a direction towards Sròn Uamha.

Races and eddies which occur in this locality, are caused by the strong streams running past the salient points and over inequalities in the bottom, and by differences in the times at which the streams begin 15 and in their directions. During about the first 1½ hours of the east-going inner stream it meets the west-going outer stream off Sròn Uamha and a race forms which is especially violent, and dangerous to small vessels, in south-westerly gales; whilst the race exists the water eastward of it remains fairly smooth, but when it ceases, at the 20 beginning of the east-going outer stream at about + 0450 Greenock (+ 0610 Dover), the change is accompanied by rollers, which break on the beach and cause a heavy surf lasting from 5 to 10 minutes.

A beavy race, called locally Tum ba nach, extends northward from Sheep island to about half-way across Sanda sound; races also form 25 westward of Sheep island and off the north-western coast of Sanda island. During the west-going stream an eddy sets eastward, from westward of Sanda island towards the anchorage northward of the island; there appears to be no eddy eastward of the island during the east-going stream but the streams run strongly between the islets and 30 rocks northward and eastward of it.

Anchorages.—Beacon.—Fluachach, a small bight in the southern side of Sanda island, affords good temporary anchorage for small vessels, about 3 cables east-north-eastward of The Ship light-tower.

Small vessels can anchor in Sanda roads, on the northern side of 35 Sanda island (*Lat. 55° 17' N., Long. 5° 35' W.*), with good shelter from south-westerly gales, about 1½ cables north-eastward of Beinn a Theine, the northern extremity of the island, in depths of from 3½ to 5 fathoms (6m9 to 9m1), sand. On account of the restricted anchorage and the strong tidal stream, no vessel without local knowledge should use this 40 anchorage.

On the western side of Sanda roads a rocky spur extends about three-quarters of a cable northward from Beinn a Theine; its extremity is marked by a red pillar beacon surmounted by a ball.

Chart 1864.

45. **CAMPBELTOWN LOCH AND APPROACHES.**—Campbeltown loch is entered between the north-western side of Island Davarr (Davaar) and Macringan's point, 4½ cables north-westward. It affords convenient landlocked anchorage for vessels bound through North channel between Ireland and Scotland.

50 Point house, about 4 cables southward of Millmore light-beacon, (page 63) is a low whitewashed cottage with a slate roof.

A stone war memorial, with a white cross on its seaward face, stands on the shore at the head of the loch.

Chart 1864.

A flagstaff stands near Eagle lodge, 4 cables north-eastward of the head of Old quay. Lochead church spire lies about $1\frac{1}{2}$ cables north-westward; Longrow church tower, with an arched top and a pinnacle at each corner, stands 2 cables south-westward; and the Gaelic church tower, surmounted by four pinnacles, lies $3\frac{1}{2}$ cables southward of the war memorial. 5

The land within the southern shore of the loch rises to Beinn Ghuilean (chart 2144), 1,150 feet ($350^{\text{m}} 5$) high, about $1\frac{1}{2}$ miles southward of New quay head. 10

Lights.—**Fog signals.**—Davarr light is exhibited, at an elevation of 120 feet ($36^{\text{m}} 6$), from a white tower, 65 feet ($19^{\text{m}} 8$) in height, situated at the northern end of Island Davarr. 15

A fog signal is sounded from near Davarr light-tower.

Distress signals, details of which are given in the Admiralty List of Lights, are made from this lighthouse; *see* page 6. 20

Millmore light is exhibited, at an elevation of 23 feet ($7^{\text{m}} 0$), from a black tank on a white beacon, 26 feet ($7^{\text{m}} 9$) in height, situated near the western extremity of The Dhorlin (page 64), on the southern side of Campbeltown loch. 25

A light is exhibited, at an elevation of 15 feet ($4^{\text{m}} 0$), from a mast, 10 feet ($3^{\text{m}} 0$) in height, situated on the head of New quay at Campbeltown. 30

A light is exhibited, at an elevation of 28 feet ($8^{\text{m}} 5$), from a column, 18 feet ($5^{\text{m}} 5$) in height, situated on the head of Old quay. 35

A light is exhibited, at an elevation of 15 feet ($4^{\text{m}} 6$), from a post situated on the head of Dalintober pier. 40

Tidal streams.—The streams run strongly eastward of Island Davarr (*Lat. 55° 26' N., Long. 5° 32' W.*), about 4 knots at springs in both directions, and there are overfalls during the out-going stream.

In the entrance to the loch the streams are weak and irregular; observations obtained in November 1941 at a position 2·2 cables 000° from Davarr light-tower, about in mid-channel in the entrance, show no appreciable regular stream, but an east-going current of about 0·5 knot (*see "Currents,"* page 48). In the loch the streams are imperceptible. 55

Charts 1864, 2144.

Dangers in approach.—Buoyage.—Otterard rock, with a least depth of 10 feet ($3^{\text{m}} 0$) over it, lies $1\frac{1}{2}$ miles north-north-eastward of Davarr light-tower; it is marked on its southern side by a spherical light and bell buoy, painted red and white in horizontal bands and exhibiting a *white flashing* light *every six seconds*. 45

Macringan's point in line with French beacon, bearing 235° , leads south-eastward of Otterard rock; and Island Ross, situated about $3\frac{1}{2}$ miles north-north-eastward of Davarr light-tower in line with Saddell house, $2\frac{1}{2}$ miles northward of Island Ross, bearing about 004° , leads eastward of it. 50

Long rock, which dries 5 feet ($1^{\text{m}} 5$), lies about $1\frac{1}{2}$ miles northward of Davarr light-tower and $2\frac{1}{2}$ cables offshore; a bank, with depths of less than 18 feet ($5^{\text{m}} 5$) over it, extends $1\frac{1}{2}$ cables southward from the eastern part of this rock. A red can buoy is moored off the south-eastern side of this danger. 55

There is a channel, 3 cables wide between the 5-fathom ($9^{\text{m}} 1$) lines, between Otterard rock and Long rock. Pluck point, about 5 miles north-north-eastward of Long rock, bearing about 015° and seen in

Charts 1864, 2144.

the centre of the channel between Island Ross and Kildonald point, leads through this channel.

Chart 1864.

- 5 Smerby rocks extend about $1\frac{1}{2}$ cables from the coast about one mile northward of Macringan's point. Between Smerby rocks and Macringan's point the coast is bordered by a bank, with depths of less than 18 feet (5^m5) over it, extending as much as $2\frac{1}{2}$ cables offshore. Foul ground extends three-quarters of a cable south-eastward from Macringan's point and a detached shoal, with a depth of 13 feet (4^m0) over it, lies about $1\frac{1}{2}$ cables eastward of the point. Yellow rocks, which dry one foot (0^m3), lie on the coastal bank $1\frac{1}{2}$ cables north-eastward of Macringan's point.

- Island Davarr.**—Island Davarr attains an elevation of 374 feet (114 $m0$) on its southern side. Its northern and eastern coasts are rocky. The Dhorlin (Dorlinn), a sandy bank which dries from one to 7 feet (0^m3 to 2^m1), connects Island Davarr with the coast south-westward; Millmore light-beacon stands on the north-western extremity of this bank. The Dhorlin is fairly steep-to on its northern side; 20 its northern and western sides are bordered by a gravel ridge impassable for boats even at high water. Close southward of Millmore light-beacon (*Lat. 55° 25' N., Long. 5° 34' W.*) is a narrow ridge one foot (0^m3) high.

- Dangers in the loch.**—**Beacon.**—**Buoys.**—Between Macringan's point and Trench point, about $1\frac{1}{4}$ miles west-south-westward, the shore of the loch is bordered by a bank, which, with depths of less than 18 feet (5^m5) over it, extends as much as $1\frac{1}{2}$ cables offshore. Trench flat, a sandy bank, which dries from one to 6 feet (0^m3 to 1^m8), extends about one cable from the shore eastward of Trench point; its southern extremity is marked by a black beacon, 25 feet (7^m6) high.

- Metha bank, with a least depth of 34 feet (10^m4) over it, lies 2 cables south-south-eastward of Trench beacon. A shoal, with a least depth of 31 feet (9^m4) over it, lies $4\frac{1}{2}$ cables southward of Trench beacon and $1\frac{1}{2}$ cables from the southern shore of the loch.

- 35 The southern shore of the loch is bordered by a bank which, with depths of less than 18 feet (5^m5) over it, extends as much as $1\frac{1}{2}$ cables offshore; the northern shore, westward of Trench point, is bordered by a similar bank extending as much as $1\frac{1}{2}$ cables offshore.

- A black conical buoy, named Millbeg Bank buoy, is moored 24 cables northward of Millmore light-beacon and marks the north-western side of the channel.

A red barrel buoy marks the edge of the shore bank about three-quarters of a cable east-south-eastward of the head of New quay.

Two mooring buoys are laid in the inner part of the loch.

- 45 Anchorages.**—Kildalloig bay, which is entered close southward of Island Davarr, is protected from north-westerly gales by The Dhorlin.

- Good anchorage out of the tidal streams may be obtained, in a depth of about 5 fathoms (9^m1), with the eastern extremity of Island Davarr bearing 014° , and with Millmore light-beacon, bearing about 301° and 50 open north-eastward of Ottercharach point, the southern entrance point of Kildalloig bay.

There is good holding ground in the eastern part of the loch southward and eastward of Trench point; westward of this point the holding ground is bad.

(Chart 1864.

Vessels should not anchor at the head of the loch so as to obstruct the passage of other vessels to and from the quays.

Submarine cable.—A submarine cable, indicated on the chart, is laid in Kildalloig bay. See page 7. 5

Harbour.—The harbour is formed between New and Old quays in front of the town at the head of the loch. The inner part dries, but in the outer part there were, in 1942, depths of from 8 to 15 feet ($2^m 4$ to $4^m 6$).

Directions.—The entrance is easily identified by Island Davarr. A vessel approaching from southward should give the eastern and northern sides of that island a berth of 2 cables. From a position 2 cables northward of Davarr light-tower (*Lat. 55° 26' N., Long. 5° 32' W.*) she should steer to pass about one cable north-westward of Millmore light-beacon, and thence to the desired anchorage. 10 15

The war memorial in line with the spire of Lochead church, bearing 291° , leads up the inner part of the loch. In 1930, it was reported that this mark was not conspicuous.

A vessel approaching from north-eastward, should pass south-eastward of Otterard rock; thence she should steer for the entrance and proceed as directed above. 20

Campbeltown.—This town is situated at the head of the loch and contains several churches and a town hall; numerous villas fringe the shores of the loch. It is a fishing centre and had a population, in 1951, of 7,172. 25

Communications.—There is regular communication by sea with Glasgow; and regular communication by air with Islay and Glasgow.

Port facilities.—A small stock of coal is usually available. A limited quantity of fresh meat can be obtained; frozen meat is supplied from Glasgow. Supplies of bread can be procured but vegetables are scarce. Water is supplied by hose at Old quay. 30

There is a cottage hospital and an isolation hospital.

Trade.—The principal exports are whisky and coal; the chief imports are cattle fodder, hicks and whisky.

Life-saving.—Storm signals.—A motor lifeboat is stationed and a line-throwing apparatus is maintained at Campbeltown. See page 9. 35

Storm signals are displayed from a flagstaff on the head of Old quay.

Charts 2144, 2164.

ISLAND OF ARRAN.—Island of Arran lies in Firth of Clyde between the Peninsula of Kintyre and the coast of Ayrshire. The northern portion rises into mountains of conical form, connected by sharp serrated ridges, and intersected by deep gullies and ravines. Goat Fell (*Lat. 55° 37' N., Long. 5° 11' W.*), the highest peak, situated about $6\frac{1}{2}$ miles from the northern end of Island of Arran, and about 2 miles from its eastern coast, is 2,863 feet ($872^m 6$) high. 40 45

The southern portion of the island is undulating hilly ground sloping gently towards the sea, and presents in its cultivated fields and bright patches of verdure a contrast to the rugged and sterile character of the northern part. The coasts are generally low and indented with several bays, one of which, Lamlash harbour, affords spacious and well-protected anchorage. See view facing page 66. 50

South coast.—Bennan head lies about $2\frac{1}{2}$ miles eastward of Cleiteadh

Charts 2144, 2164.

Mór, the south-western extremity of the island; thence to Kildonan point, the south-eastern extremity, about 2 miles farther eastward, the coast forms a bay; on this point stands the square keep of an ancient ⁵ castle.

Rocky spurs extend about 2 cables offshore between Cleiteadh Mór and Kildonan point.

The eastern and western coasts of the Island of Arran are described on pages 67 and 103, respectively.

- 10 Coastguard.** — **Life-saving.** — **Storm signals.** — An auxiliary watch is kept near Cleiteadh Mór. A line-throwing apparatus is maintained at the coastguard station on Kildonan point; *see page 9.*

Storm signals are displayed from the coastguard station at Kildonan; *see page 6.*

Off-lying island.—Light. **Fog signal.** — Pladda, an island situated about three-quarters of a mile south-south-westward of Kildonan point, attains an elevation of 61 feet ($18^m 6$). *See views facing this page and page 67.*

- 20** From the northern extremity of Pladda a reef extends about $3\frac{1}{2}$ cables north-north-eastward; there is no navigable channel between Pladda and Kildonan point.

A light is exhibited, at an elevation of 130 feet ($39^m 6$), from a white tower, 95 feet ($29^m 0$) in height, situated near the southern end of ²⁵ Pladda. *See view facing page 68.*

A fog signal is sounded from Pladda lighthouse (*Lat. $55^{\circ} 26' N.$, Long. $5^{\circ} 07' W.$*).

- Distress signals, details of which are given in the Admiralty List of Lights, are shown from this lighthouse. *See page 6.* There is a radio ³⁰ telephone.

Tidal streams. — The east-going stream runs across the entrance to Kilbrannan sound, towards the southern coast of Arran and Pladda; information regarding the streams off the southern coast of Island of Arran is lacking but it seems likely that the stream from southward ³⁵ of Sanda island divides off Cleiteadh Mór and runs eastward towards Pladda to rejoin the stream from southward of Sanda island, and north-westward towards Iron Rock ledges; the out-going stream from Kilbrannan sound probably runs eastward along the coast from Iron Rock ledges to Pladda, so that, between Cleiteadh Mór and Pladda ⁴⁰ the stream runs continuously eastward.

Between Pladda and Kildonan point the in (east)-going stream begins + 0340 Greenock (+ 0500 Dover) and the out(west)-going stream begins — 0220 Greenock (— 0100 Dover); spring rate in both directions is about 3·5 knots. Southward and eastward of Pladda the in-going stream begins + 0550 Greenock (— 0515 Dover) and the out-going stream begins — 0020 Greenock (+ 0100 Dover); overfalls or a race occur southward of Pladda during the out-going stream. The race is probably caused by the east-going stream from westward of Pladda meeting the out(south-west)-going stream from the eastern coast of ⁴⁵ Island of Arran; the supposed continuous east-going stream along the southern coast of Island of Arran probably also causes the early beginning of the streams between Pladda and Kildonan point.

The in-going stream runs northward in the direction of the coast between Pladda and the eastern side of Holy island, and thence

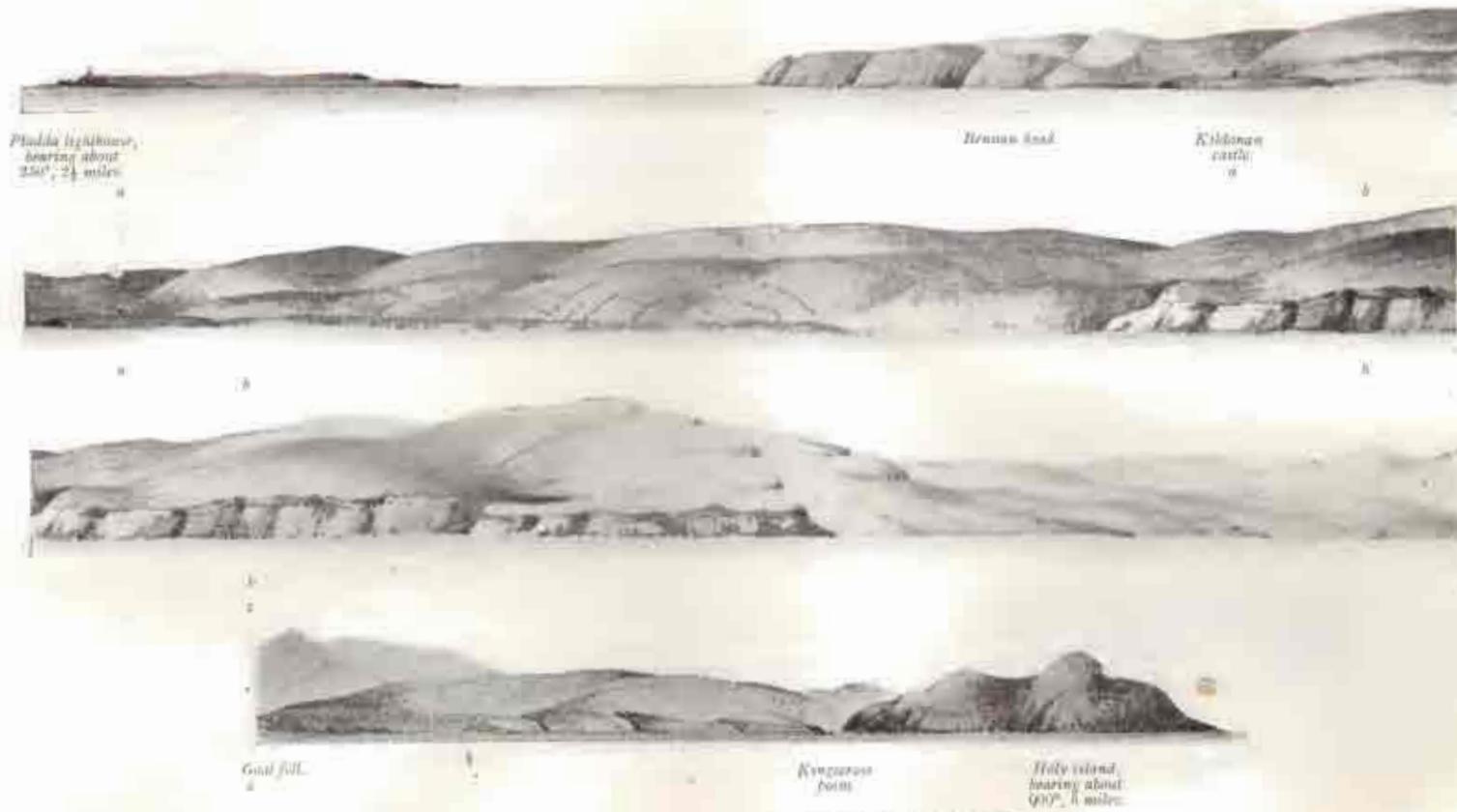
To face page 66.



Kildonan
castle.

Pladda lighthouse
bearing about
SSE, 2 miles.

To face page 47.



View in four parts, of south-eastern part of Island of Arran.
(Original dated 1890.)

Charts 2144, 2164.

towards the Bute coast between Garroch head and Inchmarnock; the out-going stream runs in the opposite direction; these streams are weak, (except in the entrance to Lamlash harbour, (*see below*). The in-going stream begins + 0605 Greenock (- 0500 Dover) and the 5 out-going stream begins - 0020 Greenock (+ 0100 Dover). A weak stream probably also runs northward and southward along the coast of Island of Arran between Birch point and Millstone point, off which there are ripples or overfalls (*see page 109*).

Chart 2164.

10

WESTERN SIDE OF FIRTH OF CLYDE.—Coast.—Light.—
Anchorage.—Largybeg point lies about $1\frac{1}{4}$ miles north-eastward of Kildonan point, and Kingscross point, the southern entrance point of Lamlash harbour, about $2\frac{1}{4}$ miles farther northward. *See view facing this page.*

15

Two masts, each 30 feet (9 m 1) in height, stand on the bills, at elevations of 913 and 1,250 feet (278 m 3 and 381 m 0), respectively, about one mile west-north-westward and 6 miles north-westward of Largybeg point.

Whiting bay, which is entered between Largybeg and Kingscross 20 points, affords good anchorage, sheltered from westerly winds, in depths of from 5 to 10 fathoms (9 m 1 to 18 m 3), sand. The shores of this bay are wooded and fringed with white cottages.

Rosebank (*Lat. 55° 29' N., Long. 5° 05' W.*), a village about $1\frac{1}{2}$ miles north-north-westward of Largybeg point, has a boat harbour formed 25 by a gap in the rocks; the channel into the harbour is marked by small perches. There is a pier at Rosebank. Special bye-laws are in force.

A light is exhibited, at an elevation of 22 feet (6 m 7), from a bracket on the storehouse, on the head of the pier.

30

Chart 1864, plan of Lamlash harbour.

Lamlash harbour.—This harbour affords anchorage for large vessels and, from its position, has great advantages as a harbour of refuge. Holy island, which fronts the harbour dividing the entrance into South channel and North channel, is 1,025 feet (312 m 4) high; its 35 lower slopes are grassy and heath-clad; higher up are rugged columnar masses. There are depths of 15 fathoms (27 m 4) in the fairway of South channel, and of 6 fathoms (11 m 0) in the fairway of North channel.

Lights.—Fog signal.—A light is exhibited, at an elevation of 40 124 feet (37 m 8), from a white square tower, 77 feet (23 m 5) in height, situated on Pillar Rock point, near the eastern extremity of Holy island. A fog signal is sounded from this light-tower. *See view facing page 68.*

A light is exhibited, at an elevation of 46 feet (14 m 0), from a white 45 tower, 56 feet (17 m 1) in height, situated near the south-western extremity of Holy island. *See view facing page 68.*

Dangers.—Light-buoys.—Pascoe bank, about 2 cables south-south-eastward of the lighthouse on Pillar Rock point, has a least depth of 29 feet (8 m 8) over it.

50

South bank, with depths of less than 10 fathoms (18 m 3) over it, extends about 4 cables south-south-eastward from the southern extremity of Holy island. South rock, lying on this bank, about $2\frac{1}{2}$

Chart 1864, plan of Lamlash harbour.

cables south-eastward of the lighthouse on the south-western extremity of Holy island, has a depth of 27 feet ($8^{\text{m}}2$) over it.

Fullarton rock, about three-quarters of a cable east-north-eastward of Kingscross point, has a depth of 8 feet ($2^{\text{m}}4$) over it, and is marked on its eastern side by a can light-buoy, painted red and exhibiting a *white group flashing light*, showing *two flashes every twelve seconds*.

Jamieson knoll, about one mile north-north-westward of the lighthouse on Pillar Rock point (*Lat. $55^{\circ} 31' N.$, Long. $5^{\circ} 03' W.$*) and about 10 $2\frac{1}{2}$ cables offshore, has a least depth of 57 feet ($17^{\text{m}}4$) over it.

Hamilton rock, about three-quarters of a cable east-south-eastward of Clauchlands point, the northern entrance point of North channel, is above water.

A narrow gravel bar connects the northern end of Holy island with Clauchland's point; this bar has depths of from 8 to 43 feet ($2^{\text{m}}4$ to $13^{\text{m}}1$), and depths of 30 feet ($9^{\text{m}}1$) and less extend $2\frac{1}{2}$ cables northward from Holy island and $3\frac{1}{2}$ cables southward from Clauchlands point. A can light-buoy, painted red and exhibiting a *red flashing light every six seconds*, marks the southern extremity of the shoal water extending 20 southward from Clauchlands point.

The north-western shore of the harbour is bordered by a bank, with depths of less than 18 feet ($5^{\text{m}}5$) over it, extending as much as $2\frac{1}{2}$ cables offshore.

Deacon rock, with a least depth of 34 feet ($10^{\text{m}}4$) over it, lies 4 cables west-south-westward of the north-western extremity of Holy island.

Tidal-streams.—At a position 3.9 cables 183° from the light-tower on the south-western extremity of Holy island, the in-going stream, spring rate 0.4 knot, direction 000° , begins + 0450 Greenock (+ 0610 Dover); the out-going stream, spring rate 0.6 knot, direction 180° , 30 begins - 0030 Greenock (+ 0050 Dover).

Firth of Clyde in-going stream runs in at South channel along the western coast of Holy island, and out at North channel; the out-going stream runs in the reverse direction; spring rate of the stream in both directions is about 1.5 knots in South channel and one knot in 35 North channel.

The streams are very weak in the harbour, except near the western coast of Holy island.

Anchorages.—The best anchorage is south-eastward of the head of New pier, in depths of from 15 to 17 fathoms ($27^{\text{m}}4$ to $31^{\text{m}}1$), sand 40 and mud. Vessels should not anchor in depths of less than 10 fathoms ($18^{\text{m}}3$), as the depths at the head of the harbour shoal suddenly.

During easterly or south-easterly gales better shelter will be found off the western side of Holy island avoiding Deacon rock.

Submarine cable.—A submarine cable, the position of which is indicated on the chart, crosses South channel from Kingscross point (*Lat. $55^{\circ} 31' N.$, Long. $5^{\circ} 05' W.$*) to the south-western end of Holy island.

Directions.—South channel has a navigable width of $1\frac{1}{2}$ cables. A vessel approaching from southward should pass not less than 2 cables eastward of Kingscross point and eastward of Fullarton rock.

50 North channel has a width of $1\frac{1}{2}$ cables, with depths of not less than 5 fathoms ($9^{\text{m}}1$). A vessel approaching from northward should give the coast northward of Clauchlands point a berth of not less than $1\frac{1}{2}$ cables and steer to pass eastward and southward of the light-buoy marking the northern side of the fairway. After crossing the bar the depths

To face page 68.



Fladda lighthouse from south-westward.



Pillar Rock Point lighthouse.
(Original dated 1890.)



Holy Island inner lighthouse.
(Original dated 1880.)

Chart 1864, plan of Lamlash harbour.

increase and the vessel may steer for any desired anchorage, avoiding Deacon rock.

Lamlash.—Lamlash village is situated at the head of the harbour. Close to the shore, about $3\frac{1}{2}$ cables northward of the head of Old quay, ⁵ is a grey church with a spire. A red church with a spire is situated $2\frac{1}{2}$ cables south-south-westward of the head of Old quay. There is a flagstaff about $5\frac{1}{2}$ cables north-north-eastward of the head of Old quay.

There is a flagstaff about $5\frac{1}{2}$ cables north-north-eastward of the head of Old quay. ¹⁰

The population in 1951 was 900.

There is regular communication by sea with Ardrossan.

Old quay extends about half a cable from abreast Lamlash village.

Chart 838.

Brodick bay.—Brodick bay is entered between Corrygills point ¹⁵ (*Lat. 55° 34' N., Long. 5° 06' W.*), situated about $1\frac{1}{2}$ miles north-westward of Clauchlands point, and Merkland point, 2 miles north-north-westward; it affords good anchorage during westerly winds to large vessels, in depths of from 11 to 17 fathoms (20^m1 to 31^m1), sand.

The tidal streams in the bay are weak. ²⁰

Brodick old quay, about $8\frac{1}{2}$ cables south-westward of Merkland point, is a boat camber, and has a slipway for boats. Special bye-laws are in force governing the use of the quay.

Aspect.—Beacons.—Numerous mountain streams, the principal being Glen Rosa water, the mouth of which is situated about $1\frac{1}{2}$ miles west-north-westward of Corrygills point, flow into the bay; the beach of the bay is of pulverised granite. ²⁵

The Public hall, situated at the south-western corner of the bay, about $1\frac{1}{2}$ miles west-north-westward of Corrygills point (*Lat. 55° 34' N., Long. 5° 06' W.*) is a grey building, and is visible from the bay but is not conspicuous. Strabane house, about $5\frac{1}{2}$ cables north-north-westward of the Public hall, is a dark red building, with a gabled roof, standing amongst trees, and is conspicuous; about $2\frac{1}{4}$ cables north-north-eastward of Strabane house and close to the foreshore, is a small conspicuous white hut. Brodick castle, $2\frac{1}{2}$ cables north-north-eastward of the white hut, is surrounded by trees, and has a large tower at its south-western corner. ³⁵

A beacon painted white and surmounted by a St. Andrew's cross stands on the coast about $1\frac{1}{2}$ cables north-westward of Corrygills point; a similar beacon stands near the coast about one mile north- ⁴⁰ eastward of Brodick castle.

Charts 2131, 2164, 2144.

Coast.—Dangers.—Buoy.—Sannox river discharges about 4 miles northward of Merkland point. Sannox rock, about a quarter of a mile off a sandy bay at the entrance to the river, has a depth of 8 feet (2^m4) over it. ⁴⁵

Birch point, (*Lat. 55° 37' N., Long. 5° 08' W.*), about three-quarters of a mile northward of Merkland point, bearing about 172° and open eastward of Corrie point, about $1\frac{1}{2}$ miles northward of Birch point, leads eastward of Sannox rock.

A barrel buoy is moored about one cable southward of Sannox rock. ⁵⁰

The Cock of Arran, a large block of red sandstone, lies about $4\frac{1}{2}$ miles north-westward of the entrance to Sannox river; about $3\frac{1}{2}$ cables farther north-westward is An Scridan, a rounded headland, the northern extremity of Arran.

Charts 2131, 2164, 2144.

Submarine cables.—**Beacons.**—Submarine cables, the positions of which are indicated on charts 2164, are laid across Firth of Clyde from a position about $1\frac{1}{4}$ miles northward of Merkland point to a position on the mainland close eastward of Farland head. (See page 7). A beacon marks each landing place.

Measured distance.—Measured distance beacons stand on the north-eastern side of Island of Arran; the north-western and south-eastern limits are marked by three and two beacons, respectively, and 10 two beacons mark the centre line.

The south-eastern beacons are situated about $3\frac{1}{2}$ miles north-north-westward of Merkland point.

The total distance on a course of 322° or 142° is 12,160 feet (3706^m4), which is divided by the centre line of beacons into two equal parts of 15 6080 feet (1853^m2).

Vessels wishing to use the Arran measured distance are requested to contact the Resident Naval Officer, Clyde, who if given ten days notice, can usually make arrangements for submarines to keep clear of the measured distance.

20 Charts 1907, 2131.

UPPER PART OF FIRTH OF CLYDE.—**Coast.**—The upper part of Firth of Clyde is entered between Farland head (page 54) and Garroch head, the southern extremity of Island of Bute, $4\frac{1}{2}$ miles west-north-westward.

25 Farland head (*Lat. $55^{\circ} 42' N.$, Long. $4^{\circ} 54' W.$*) is fairly steep-to on its western side; close northward of it are the ruins of Portencross castle, which stands on a shelving point with a well-wooded background rising somewhat abruptly behind it.

There is a pier about 4 cables northward of Farland head, and about 30 3 cables farther northward a spit, with depths of less than 3 fathoms (5^m5) over it, extends about $2\frac{1}{2}$ cables offshore.

Tidal streams.—The in-going stream of the outer Firth divides southward of Cumbrae islands and runs through the channels eastward and westward of the islands and along the coast of Island of Bute 35 north-westward of Garroch head. The out-going streams from the channels and the coast of Island of Bute meet in the outer Firth and a race forms off Garroch head, where the streams from the channel west of Cumbrae islands and the coast of Island of Bute meet.

In Largs channel, at a position 0·48 miles 265° from Hunterston 40 perch, the streams run in about the direction of the channel. The in-going stream, spring rate 1·1 knots, neap rate 0·7 knot, begins + 0540 Greenock (-0525 Dover); the out-going stream, spring rate 1·4 knots neap rate 0·9 knot, begins + 0010 Greenock (+ 0130 Dover). The stream changes from out-going to in-going through east without 45 slack water and, during the change, it runs south-eastward towards the land at a rate of 0·6 knot at springs; the change from in-going to out-going is rapid with a very brief slack water period.

In the channels westward of Cumbrae islands, and in Cumbrae pass the streams begin about as in Largs channel; in Cumbrae pass the 50 in-going stream runs eastward and the out-going stream runs westward. It is unlikely that a spring rate of from one to 1·5 knots is exceeded in mid-channel in these channels, but a greater rate may be attained off the salient points.

Charts 2159, 1577, 2635, 1824a.

Charts 1907, 2131.

The streams in these channels may be affected by an out-going current after heavy rain or when the snow is melting quickly (see "Currents," page 48).

The streams are weak and rather uncertain in the wide inner Firth between Cumbrae islands and Toward point; at a position 2·8 miles 5 172° from Toward point the in-going stream, spring rate 0·3 knot, begins, in a northerly direction, about + 0600 Greenock (- 0505 Dover), and runs in variable directions between about north and east; the out-going stream, spring rate 0·4 knot, begins, in a south-westerly 10 direction, about H.W. Greenock (+ 0120 Dover) and runs in variable directions between about south-west and west. The streams probably run more regularly on the eastern side of this part of the Firth but it is unlikely that the spring rate exceeds about from 0·5 to 0·8 knots.

The streams are weak in Rothesay sound, East Kyle of Bute (see 15 page 109) and Loch Striven, and are barely perceptible in Rothesay bay (see "Sea level," page 49) and Kames bay.

Between Toward point and Cloch point the streams are more regular; the in-going stream begins + 0605 Greenock (- 0500 Dover) and the out-going stream begins - 0020 Greenock (+ 0100 Dover), spring rate 20 in both directions about one knot, but more over Skelmorlie bank and the banks on the eastern side of the channel between Wemyss point and Cloch point (*Lat. 55° 57' N., Long. 4° 53' W.*).

The in-going stream divides, westward of Cloch point, and runs northward and southward towards Loch Long and eastward towards 25 the entrance to River Clyde. The out-going stream runs in the opposite direction.

Charts 1907, 1906.

Island of Bute.—**Buoy.**—Island of Bute attains an elevation of 907 feet (276^m4) at Windy hill, in the northern part of the island about 30 3½ miles south-eastward of its northern extremity. The northern part of the island is separated from the mainland by the Kyles of Bute. The coasts of this island are indented, forming natural harbours, the most important of which is Rothesay bay on the north-eastern coast, *see page 112.*

35

Chart 1907.

Garroch head is steep-to, but there is a tidal race, caused by the meeting of the tidal streams (page 48), off the point, which should be avoided.

Rubh'an Eun (Runnaneum point) on which stands a lighthouse, is 40 situated about one mile east-north-eastward of Garroch head.

Kilchattan bay is entered between White point, about one mile north-north-westward of Rubh'an Eun lighthouse and Kerrytonlia point, about one mile northward; the head of this bay dries out about 3 cables.

45

There is a small village with a pier, which, in 1949, was in ruins, on the south-western shore of this bay, and there are a few scattered cottages in the neighbourhood.

A red can buoy, marked "No. 37" is moored 7 cables north-north-eastward of Kerrytonlia point and about 1½ cables offshore; this buoy 50 marks the eastern edge of the coastal bank in this vicinity.

Life-saving.—There is a life-saving station at Kilchattan bay. *See page 9.*

Submarine cables.—**Beacons.**—From Kerrytonlia point, and from

Chart 1907.

a position about 7 cables northward of it, submarine power cables are laid in a south-easterly direction to Great Cumbrae island; about 2 miles farther northward other cables cross the Firth in an easterly direction to the mainland. Each landing is marked by a beacon. See page 7.

Chart 2131.

Largs channel.—Dangers.—Buoyage.—From a position about one mile northward of Farland head (page 54) to Fairlie, $3\frac{1}{2}$ miles north-north-eastward, the eastern side of Firth of Clyde is bordered by 10 Hunterston, Southannan and Fairlie sands, (*Lat.* $55^{\circ} 45' N.$, *Long.* $4^{\circ} 52' W.$), which dry, and extend from one to 7 cables offshore.

Chart 1907.

Little Brigurd point is situated about $1\frac{1}{2}$ miles northward of Farland head; a shoal bank extends about $3\frac{1}{2}$ cables west-north-westward from 15 this point and its western edge is marked by a black buoy.

Brigurd spit, the western extremity of Hunterston sands, is marked at its western extremity by a conical light-buoy, painted black, marked "No. 39" and exhibiting a *white flashing light every fifteen seconds*.

The most projecting point of Southannan sands, lying about $1\frac{1}{2}$ miles 20 north-north-eastward of Little Brigurd point, is marked by Hunterston perch, 25 feet (7^m6) high, and painted black; one cable westward of the perch is a black conical buoy, marked *Hunterston*.

Fairlie patch, about 9 cables north-eastward of Hunterston perch and about $4\frac{1}{2}$ cables offshore, has a depth of one foot (0^m3) over it, and 25 its north-western end is marked by a black conical light-buoy, marked No. 40, exhibiting a *white occulting light every six seconds*. Kelburn bank, about $1\frac{1}{2}$ miles north-north-eastward of Hunterston perch and about 4 cables offshore, lies on the eastern side of Largs channel abreast Kelburn glen, has a least depth of 20 feet (6^m1) over it.

30 Two mooring buoys are situated about $1\frac{1}{2}$ and 3 cables, respectively, northward of the shoalest part of Kelburn bank, and a mooring buoy, on which a *white flashing light every two and a half seconds* is exhibited, is situated about 2 cables farther northward.

Largs pier in line with The Knock, a 704-foot (214^m6) hill, $1\frac{1}{2}$ miles 35 northward, bearing about 002° , leads close westward of Kelburn bank.

There are two mooring buoys within 4 cables south-south-eastward of Downcraig ferry, situated about $7\frac{1}{2}$ cables southward of Tomont End, the northern extremity of Great Cumbrae island.

Cumbrae islands.—Buoys.—Little Cumbrae island, the southern 40 extremity of which is Gull point, situated about $1\frac{1}{2}$ miles west-north-westward of Farland head (chart 2131), attains an elevation of 401 feet (122^m2), and on its summit are the ruins of an old tower, which are conspicuous. The middle of the eastern side of this island is foul for about 2 cables offshore, and Twelve Foot spit, lying about 3 cables 45 south-eastward of Sheanawally point, the northern extremity of the island and about $1\frac{1}{2}$ cables offshore, has a least depth of 4 feet (1^m2) over it.

The channel between the 10-fathom (18^m3) lines between the mainland and the eastern side of Little Cumbrae island has a least width of about $6\frac{1}{2}$ cables.

50 Great Cumbrae island, the southern extremity of which is Portachur point, lies about $4\frac{1}{2}$ cables north-north-westward of Little Cumbrae island, and is 412 feet (125^m6) high; its coasts are free from dangers, except in Millport bay on its southern side, and at Portachur point, at its south-western end; Portachur spit extends about 2 cables south-

Chart 1907.

westward from Portachur point (*Lat. 55° 45' N., Long. 4° 57' W.*); it has depths of less than 6 feet (1 $\frac{1}{8}$) over it, and is marked at its south-western end by a black conical buoy, marked "No. 38."

There is a monument on Tomont End, (see below), and a grey house stands about three-quarters of a mile southward of it.

Chart 2472, plan of Millport.

Keppel pier, with a T-head, projects from the south-eastern coast of Great Cumbrae island, about 4 cables north-eastward of Farland point, the south-eastern extremity of the island; there is a least depth 10 of 16 feet (4 $\frac{1}{8}$) alongside the head of this pier.

Northward of Clashfarland point, the eastern extremity of Great Cumbrae island, is Ballochmartin bay; a T-headed pier extends from the northern entrance point of the bay, about one mile northward of Clashfarland point.

15

Charts 2472, plan of Millport, 1907.

Cumbrae pass, between Little and Great Cumbrae islands, has a least navigable width of about 3 $\frac{1}{2}$ cables, and depths of from 7 to 19 fathoms (12 $\frac{1}{8}$ to 34 $\frac{1}{2}$).

Chart 1907.

20

Lights.—Fog signals.—A light is exhibited, at an elevation of 115 feet (35 $\frac{1}{2}$), from a white tower, 36 feet (11 $\frac{1}{2}$) in height, situated on Cumbrae elbow on the western side of Little Cumbrae island. A fog signal is sounded and a radiobeacon and a talking beacon transmit from this lighthouse. This light tower is equipped with a radio telephone. 25

A light is exhibited, at an elevation of 28 feet (8 $\frac{1}{2}$), from a white iron tower, 25 feet (7 $\frac{1}{2}$) in height, situated on Rubh'an Eun (page 71).

A light is exhibited, at an elevation of 70 feet (21 $\frac{1}{2}$), from a white tower, 63 feet (19 $\frac{1}{2}$) in height, situated on Toward point, 8 miles northward of Rubha'n Eun. A fog signal is sounded from a tower 30 situated close south-eastward of the light-tower.

A red light is shown from a flagstaff, situated about 5 cables west-north-westward of the above light-structure, when firing is taking place.

Submarine cables.—A submarine power cable is laid across 35 Cumbrae pass between Portachur point and a point on the north-western side of Little Cumbrae island about half a mile south-westward of Sheanawally point; the ends of the cable are marked by beacons. A submarine cable is laid between a point on the eastern side of Little Cumbrae island and the eastern side of Millport bay.

40

Coast.—Dangers.—Buoyage.—Ascog islet, about 3 $\frac{1}{4}$ miles northward of Kertrytonlia point and close off the eastern coast of Island of Bute, is 4 feet (1 $\frac{1}{2}$) high; about one cable eastward of Ascog islet is a shoal, with a depth of 15 feet (4 $\frac{1}{2}$) over it. Ascog patches, about 5 $\frac{1}{2}$ cables eastward of Ascog islet, have a depth of 23 feet (7 $\frac{1}{2}$) over 45 them.

Rubha'n Eun (*Lat. 55° 44' N., Long. 5° 00' W.*), bearing about 184° and open eastward of Bruchag point, 2 $\frac{1}{2}$ miles northward, leads eastward, and Bogany point, one mile northward of Ascog islet, in line with the right extremity of the trees on Ardbeg point, about 1 $\frac{1}{2}$ 50 miles north-westward of Bogany point, bearing about 304°, leads north-eastward of Ascog patches.

Several mooring buoys are situated within 4 $\frac{1}{2}$ cables south-eastward and northward of Ascog islet, and a mooring buoy, on which a white

Chart 1907.

flashing light every two and a half seconds is exhibited, is situated about $4\frac{1}{2}$ cables eastward of the same islet.

There is a conspicuous pavilion, with a green dome surmounted by 5 a ball, about $1\frac{1}{2}$ cables south-eastward of Bogany point.

A rocky ledge and a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extend $1\frac{1}{4}$ cables offshore around Bogany point; a red can buoy, marked "No. 36," is moored near the north-eastern edge of this bank.

10 Toward bank, about $9\frac{1}{2}$ cables north-eastward of Bogany point, has a least depth of 15 feet ($4^{\text{m}}6$) over it, and is marked on its south-eastern side by a conical light-buoy, painted black, marked "No. 35" and exhibiting a *white occulting light every six seconds*.

The telegraph cable hut on Ardyne point, about $1\frac{1}{2}$ miles north-north-westward of Bogany point, in line with a white cottage near South Hall, about $4\frac{1}{4}$ miles north-westward of Bogany point, bearing 317° , leads close south-westward of Toward bank.

Toward point, about $1\frac{3}{4}$ miles north-eastward of Bogany point, is low and rocky; a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over 20 it, extends about $4\frac{1}{2}$ cables south-south-westward from the point. A red perch, about one cable south-south-westward of Toward lighthouse, marks the south-western edge of the rocks which dry, and a red can buoy, marked "No. 34," marks the edge of the bank about $3\frac{1}{4}$ cables south-westward of the point; a pier extends eastward from the coast, 25 about three-quarters of a cable northward of Toward point.

Between Toward bank and No. 34 red can buoy are some shoals, with a least depth of 10 feet ($3^{\text{m}}0$) over them, the channel north-eastward of Toward bank should not be used without local knowledge.

Skelmorlie bank, situated in the fairway of the Firth, about $1\frac{1}{4}$ miles 30 eastward of Toward lighthouse, has a least depth of 19 feet ($5^{\text{m}}8$) over it, and is marked on its western side by a conical light-and-bell-buoy painted black, marked "No. 32" and exhibiting a *white flashing light every two seconds*; and on its eastern side by a red can buoy, marked "No. 33."

35 Toward lighthouse (*Lat. $55^{\circ} 52' N.$, Long. $4^{\circ} 59' W.$*) in line with Castle Toward, $1\frac{1}{4}$ miles west-north-westward, bearing about 291° , leads about 7 cables southward of the shoalest part of Skelmorlie bank, and Doune hill (chart 2159), a conical hill 2,403 feet ($732^{\text{m}}4$) high, 18 $\frac{1}{2}$ miles north-north-eastward of Toward lighthouse, bearing 022° and 40 open westward of Cloch lighthouse, $5\frac{1}{2}$ miles north-eastward of Toward lighthouse, leads westward of this bank.

Fairlie roads.—Lights.—Fairlie roads, situated on the eastern side of Firth of Clyde, about 4 miles north-north-eastward of Farland head (page 54), have depths of from 5 to 8 fathoms ($9^{\text{m}}1$ to $14^{\text{m}}6$), 45 and are sheltered by Fairlie patch. The depths are irregular. For light-buoy marking the north-western end of Fairlie patch, see page 72.

The town of Fairlie extends along the shore, and near its northern end is the church with a spire, about 2 cables northward of which a pier, with a T-head, projects 250 yards ($228^{\text{m}}6$) from the shore into 50 a depth of 9 feet ($2^{\text{m}}7$).

The population prior to 1951 was 975.

Lights are occasionally exhibited, at an elevation of 23 feet ($7^{\text{m}}0$), from posts, 17 feet ($5^{\text{m}}2$) in height, on the northern and southern ends of Fairlie pier.

Chart 1907.

A grey stone monument, about 40 feet ($12^{\text{m}}2$) high, is situated on the coast about 11 cables northward of Fairlie church.

Special bye-laws are in force with reference to vessels discharging carbide of calcium at this pier. 5

There is communication by sea with Millport, in Great Cumbrae and with Kilbattan, in Island of Bute.

Largs.—The town of Largs is situated about $2\frac{1}{2}$ miles northward of Fairlie, on a plain within Largs bay; it is backed by hills partially covered with plantations and broken by ravines. The population was 10,806 in 1951.

There is regular communication by sea with Glasgow and other ports in Firth of Clyde.

A pier, with an elbow, extending offshore at the middle of the town, forms a small harbour frequented by small craft. 15

There is a least depth of 7 feet ($2^{\text{m}}1$) alongside the pier.

Lights.—**Fog signal.**—A light is occasionally exhibited, at an elevation of 21 feet ($6^{\text{m}}4$), from a mast, 15 feet ($4^{\text{m}}6$) in height, situated on the southern end of the pier-head. A similar light is exhibited from the northern end of the pier-head. 20

A fog signal is occasionally sounded at the southern end of the pier-head.

Submarine cables.—**Beacons.**—From a position about 3 cables southward of Largs pier submarine cables, indicated on the chart, cross Largs channel to Great Cumbrae island; both landing places are marked by telegraph beacons. Another cable crosses the Firth from a position about three-quarters of a mile northward of Largs pier. See page 7.

Measured distance.—About $3\frac{1}{2}$ and $4\frac{1}{2}$ miles northward of Largs lights and abreast Skelmorlie bank, are two pairs of beacons marking a measured distance of 6,080 feet ($1,853^{\text{m}}2$). Each beacon consists of a single pole, 45 feet ($13^{\text{m}}7$) high, with two arms 10 feet ($3^{\text{m}}0$) long, forming a broad angle with the base, all painted white. 30

The southern pair of beacons stands on level ground, just southward of Skelmorlie castle (*Lat. $55^{\circ} 51' N.$, Long. $4^{\circ} 53' W.$*), the inner beacon bearing 090° , distant 100 yards ($91^{\text{m}}4$) from the outer one. 35

The outer of the northern pair of beacons is close to the coast, and from it the inner beacon (in a recess of the cliff) bears 090° , distant 83 yards ($75^{\text{m}}9$).

The running courses are 000° and 180° ; the shore may be approached to the distance of about 4 cables. 40

Chart 2472, plan of Millport.

Millport bay.—**Anchorage.**—**Dangers.**—**Submarine cable.**—Millport bay, on the southern side of Great Cumbrae island, is divided into two by The Eileans, two islets lying on a shoal extending about $3\frac{1}{2}$ cables southward from the head of the bay. 45

Small vessels can obtain anchorage about $1\frac{1}{2}$ cables west-north-westward of the lighthouse on the outer islet, in depths of about 2 fathoms ($3^{\text{m}}7$), gravel and sand. Also about $1\frac{1}{2}$ cables eastward of the south-eastern extremity of the inner Eilean, in a depth of about 6 fathoms ($11^{\text{m}}0$).

The pier, on the western side of the bay, has a depth of 7 feet ($2^{\text{m}}1$) alongside.

The Clach, The Spoig, and The Leugh, situated about 4 cables

Chart 2472, plan of Millport.

south-westward, $1\frac{1}{2}$ cables south-westward, and $1\frac{1}{2}$ cables westward, respectively, of the lighthouse on the outer Eilean, are above-water reefs. A shoal bank extends about half a cable southward from the δ south-western end of outer Eilean.

Vessels should not anchor in the vicinity of the submarine cable on the eastern side of Millport bay, the route which is indicated on the plan; see page 7.

Millport leading lights in line, bearing 333° , lead to the anchorage, 10 passing between The Spoig and outer Eilean, to within about three-quarters of a cable of the front leading light. Care should be taken to avoid the bank extending about half a cable westward from the inner Eilean.

Lights.—A light is periodically exhibited, at an elevation of 18 feet 15 (5^m5), from a post situated on the western extremity of the outer Eilean.

Leading lights are exhibited, the front light, at an elevation of 24 feet (7^m3), from a column, 20 feet (6^m1) in height, situated on the pier-head; and the rear light at an elevation of 29 feet (8^m8), from a column 23 feet (7^m0) in height, situated about three-quarters of a 20 cable north-north-westward of the front light-column.

Town.—The town of Millport stands on the shores of Millport bay and is backed by partially wooded rising ground. In it are a college with a tall spire, and a church with a square tower. In 1951, the population was 2,012.

25 There is communication by sea with Glasgow and other ports in Firth of Clyde.

Chart 1907.

Directions.—Firth of Clyde, between Rubha'n Eun (*Lat. $55^{\circ} 44' N.$, Long. $5^{\circ} 00' W.$*) and the western side of Little Cumbrae island, is the 30 channel generally used by vessels bound to it from Greenock and Glasgow. There is a channel eastward of Little Cumbrae island and one through Kyles of Bute (page 109), but the latter is narrow and intricate, and is used only by small vessels. See view facing page 94.

Charts 1907, 2164.

35 From a position one mile eastward of Holy island (page 67) the fairway course is 009° , which leads 4 cables westward of Little Cumbrae island, and $4\frac{1}{2}$ cables westward of Skelmorlie bank.

Charts 1904, 1907.

Coast.—Lights.—Fog signals.—From abreast Toward point 40 Firth of Clyde trends about $7\frac{1}{2}$ miles northward to the entrance to Holy loch, and thence about $2\frac{3}{4}$ miles eastward to abreast Whiteforeland point, at the entrance to River Clyde. Cloch point is situated on the eastern side of the Firth about 6 miles north-eastward of Toward point. There is a tide gauge at Cloch point.

45 A light is exhibited, at an elevation of 42 feet (12^m8), from a white beacon and tank, 48 feet (14^m6) in height, situated on Gantock (page 78).

A light is exhibited, at an elevation of 76 feet (23^m2), from a white tower with a black horizontal band, 76 feet (23^m2) in height, situated on Cloch point. A fog signal is sounded from this light-tower.

50 A radiobeacon and a talking beacon transmit from Cloch point.

Chart 1907.

A light is occasionally exhibited, at an elevation of 17 feet (5^m2), from a storehouse, 15 feet (4^m6) in height, situated on Innellan pier page 77. A fog signal is occasionally sounded.

Chart 1907.

Two lights, disposed vertically, are exhibited at elevations of 45 and 40 feet (13^m7 and 12^m2), from a column, 40 feet (12^m2) in height, situated on Wemyss Bay pier, about 4 miles southward of Cloch point.

Dangers. — Beacons. — Buoyage. — Submarine cables. — 5
Mooring buoys. — A rocky ledge, which dries, extends about 3 cables offshore, about one mile northward of Toward point; Innellan beacon, painted in red and white chequers, marks the eastern edge of this rocky ledge, but a shoal bank extends about three-quarters of a cable southward and eastward from this beacon. A vessel should pass more than a 10 quarter of a mile eastward of it.

Between Toward point and Innellan beacon a shoal bank extends from one to 3 cables offshore.

Several mooring buoys are laid within about $1\frac{1}{2}$ miles north-eastward of Toward point and from about $3\frac{1}{2}$ to 6 cables offshore. 15

Innellan, a village with a population of 1,500 prior to 1951, situated about 2 miles north-north-eastward of Toward point, stands on a hillside. Small quantities of provisions can be obtained here.

A shoal bank fringes the eastern side of the Firth from abreast Skelmorlie bank to Cloch point (*Lat. $55^{\circ} 57' N.$, Long. $4^{\circ} 53' W.$*) extending 20 from one to $2\frac{1}{2}$ cables offshore.

There is a pier, 1,304 feet (397^m5) long, with depths of from 4 to 6 feet (1^m2 to 1^m8) alongside, in Wemyss bay.

Castle Wemyss is close to Wemyss point, which is a rounded promontory 9 cables north-north-westward of Wemyss Bay pier. 25

Small quantities of provisions can be obtained here.

Special bye-laws are in force for vessels carrying petroleum and carbide of calcium.

Ardgowan bank, situated on the eastern side of the Firth, about $1\frac{1}{2}$ miles south-south-eastward of Gantock light-beacon, extends about 30 $7\frac{1}{2}$ cables offshore, and has depths of from 7 to 10 fathoms (12^m8 to 18^m3) over its outer part; about $1\frac{1}{2}$ cables southward of the western end of this bank is a patch with a depth of 51 feet (15^m5) over it.

Several mooring buoys are situated northward and north-eastward of Ardgowan bank; on the northernmost buoy a white flashing light 35 every two and a half seconds is exhibited.

A beacon with a topmark, consisting of two intersecting triangles, $8\frac{1}{2}$ feet (2^m6) high, situated about $1\frac{1}{2}$ miles southward of Cloch point, marks the outer end of a sewer which extends about half a cable from the shore. 40

Charts 1994, 1907.

Lunderston bank, about one mile south-south-westward of Cloch lighthouse, extends about $6\frac{1}{2}$ cables offshore, and has depths of from 6 to 10 fathoms (11^m0 to 18^m3).

Vessels are warned not to anchor on account of submarine cables, 45 in the area indicated on the chart by pecked lines drawn across the channel from a beacon in Lunderston bay, about $1\frac{1}{2}$ miles southward of Cloch point, and from Levan point to the light-structure at Kirn (page 78). See page 7.

Warden bank, about $8\frac{1}{2}$ cables south-south-eastward of Gantock 50 light-beacon, has a depth of 34 feet (10^m5) over it; a narrow neck, with a depth of 8 fathoms (14^m6) over it, connects it with Lunderston bank. A detached patch, with a depth of 55 feet (16^m8) over it, lies about $4\frac{1}{2}$ cables east-north-eastward of Warden bank.

Charts 1994, 1907.

Gantock light-beacon in line with the north-eastern corner of Dunoon pier, bearing 344° , leads about one cable westward of Warden bank.

A spherical light-and-bell-buoy, painted in wide red and black horizontal bands, separated by a narrow white band and exhibiting a *white group flashing* light showing *two flashes every fifteen seconds*, is moored about half a cable west-south-westward of the shoalest part of Warden bank.

A beacon stands on the coast about half a mile south-westward of Dunoon point, situated about $1\frac{1}{2}$ miles westward of Cloch point.

The Gantocks, which dries 12 feet (3^m7), lies about 3 cables south-south-eastward of Dunoon point; a shoal bank extends about one cable southward, eastward and northward from it. A shoal, with a depth of 28 feet (8^m5) over it, lies about midway between The Gantocks and Dunoon point; a red can buoy, surmounted by a can and marked "No. 31," marks the northern side of The Gantocks.

Dunoon bank, about $5\frac{1}{2}$ cables east-north-eastward of Gantock light-beacon, has a depth of 12 fathoms (21^m9) over it.

A white iron beacon, 6 feet (1^m8) high, surmounted by a ball, marks the outer end of a slip about 2 cables north-eastward of Cloch point.

A conspicuous pylon stands about $4\frac{1}{2}$ cables eastward and two conspicuous pylons stand about $4\frac{1}{2}$ cables east-north-eastward of Cloch point (*Lat. $55^{\circ} 57' N.$, Long. $4^{\circ} 53' W.$*).

Tidal streams.—See page 71.

Dunoon.—Lights.—Fog signals.—Dunoon, with a population, in 1951, of 9,940, extends, with Kirn and Hunter's Quay, about 2 miles along the shore of a rounded promontory on the western side of the Firth opposite Cloch point; Hunters' Quay is on the south-western side of the entrance to Holy loch.

There is communication by sea with Glasgow and other ports on Firth of Clyde.

The ruins of the ancient castle of Dunoon are situated on Castle hill, a green rocky knoll overlooking the pier; Dunoon church, about $1\frac{1}{2}$ cables westward of Dunoon light is conspicuous.

There are two piers at Dunoon, the heads of which are joined, forming one pier-head about three-quarters of a cable long.

A light is exhibited, at an elevation of 16 feet (4^m9), from a column 23 feet (7^m0) in height, situated at the southern end of the pier-head. A fog signal is occasionally sounded from the southern end of the pier-head.

A light is exhibited, at an elevation of 17 feet (5^m2), from a column, 13 feet (4^m0) in height, situated on the northern end of the pier-head.

A light is occasionally exhibited, at an elevation of 15 feet (4^m6), from a store house, 11 feet (3^m4) in height, situated on the pier-head at Kirn about 9 cables north-north-eastward of Dunoon pier-head. A fog signal is occasionally sounded from this light-structure.

Charts 1994, 2006.

West bay.—Beacon.—Foul areas.—West bay is entered between Levan point, a rocky point about 20 feet (6^m1) high, situated about 9 cables north-eastward of Cloch point, and Kempock point, about $1\frac{1}{2}$ miles north-eastward. Landing can be effected at the Royal Gourock Yacht Club pier, about $6\frac{1}{2}$ cables east-north-eastward of Levan point; the head of this pier is marked by a small iron beacon.

Charts 1994, 2006.

Several foul areas are situated about 3 cables offshore between West bay and Whiteforeland point.

Gourock bay.—Anchorage.—Gourock bay is entered between Kempock point and Whiteforeland point, about 9 cables eastward; it is a sheltered bay much frequented by excursion vessels and yachts. During November and December the bay is frequented by the herring ring-net fleet.

Small vessels can obtain anchorage in a depth of 15 fathoms (27^m4), but they should not anchor on the south-eastern side of the bay, which is shoal for about half a cable offshore. It is advisable to anchor here during strong winds between west, through north to north-east, as the holding ground is only moderately good.

Special bye-laws are in force for vessels carrying petroleum and carbide of calcium.

15

There are a number of mooring buoys in Gourock bay.

On the western side of the bay the reclaimed land extending out to Kempock point (*Lat. 55° 58' N., Long. 4° 49' W.*) is fronted by wharfage with berths for several vessels, and the railway station is on the wharf extending to the point; there is 1,000 feet (304^m8) of quayage here, with depths of from 12 to 20 feet (3^m7 to 6^m1) alongside.

An area of foul ground, the limits of which are indicated by pecked lines on the chart, is situated in the western part of Gourock bay.

A pier, with depths of 9 feet (2^m7) alongside its head, projects from Whiteforeland point.

25

A vessel approaching Gourock bay from south-westward can keep close to the coast between Cloch and Kempock points, as it is deep within one cable offshore.

Gourock had a population of 9,107 in 1951.

Lights.—Fog signals.—Beacon.—Two lights, disposed vertically, are exhibited, at elevations of 33 and 27 feet (10^m1 and 8^m2), from a grey framework tower, 26 feet (7^m9) in height, situated on the railway pier-head at Kempock point. A fog signal is sounded from this pier-head.

Two lights, disposed vertically, are exhibited, at elevations of 29 and 23 feet (8^m8 and 7^m0), from a post situated on the head of the pier extending from Whiteforeland point. A fog signal is sounded from this pier-head. A beacon stands on the point.

A light is exhibited from either end of the outer arm of the pier at the head of Gourock bay.

40

Submarine cables.—Vessels are warned not to anchor in the area, indicated by pecked lines on the chart, close westward of Rosneath patch, on account of submarine cables; see page 7.

Spoil grounds.—There are two spoil grounds situated, respectively, about 6 cables and 2 miles westward of Rosneath patch.

45

Pilots.—There is a pilot station on the wharf at Kempock point.

RIVER CLYDE APPROACH.—Danger.—Light.—Fog signal.

—Light-buoys.—Rosneath patch, about 6^m cables northward of Whiteforeland point, has a depth of 5 feet (1^m5) over it. It is marked on its southern side by a red can light-buoy, painted red, marked "No. 27" and exhibiting a *red occulting light every six seconds*; and on its northern side by black conical light-buoy, No. 28, exhibiting a *white occulting light every six seconds*.

Charts 1994, 2006.

A light is exhibited, at an elevation of 19 feet (5^m8), from a concrete pile structure, 24 feet (7^m3) in height, situated near the centre of Rosneath patch.

- 5 A fog signal is sounded from Rosneath Patch light-structure.

To avoid Rosneath patch a vessel should keep near the southern shore of the Firth, which between Kempock and Whiteforeland points can be approached to within the distance of about 2 cables.

Levan point, seen over the land and bearing about 242° , leads 10 southward of Rosneath patch. Fort Matilda flagstaff, about three-quarters of a cable south-south-westward of the lights on the head of Whiteforeland Point pier (*Lat. $55^{\circ} 58' N.$, Long. $4^{\circ} 47' W.$*), bearing about 174° and well open eastward of the summit of Craig's Top, a 420-foot (128^m0) hill, $4\frac{1}{2}$ cables southward of the flagstaff, leads westward, and the same flagstaff, bearing about 194° and well open westward of Mount Binian, leads eastward of this shoal.

Coast.—Lights.—Fog signal.—Light-buoy.—Beacon.—Prince's pier, at Greenock, at the entrance to the Clyde, lies about one mile east-south-eastward of Whiteforeland Point pier. The coast is bordered by 20 buildings, the town of Greenock merging into Gourock. The Town hall is situated about $6\frac{1}{2}$ cables south-south-eastward of the north-western extremity of Prince's pier. A spire about $8\frac{1}{2}$ cables north-westward and two chimneys situated, respectively, about 5 cables south-south-westward and $4\frac{1}{2}$ cables southward of the Town hall, are conspicuous.

- 25 The northern shore of the entrance to River Clyde is the southern end of the peninsula, which divides Loch Long from Gareloch.

Chart 1994.

Barons point lies about 2 miles north-westward of Kempock light-tower. A black conical light-buoy, marked N.29, exhibiting a *white 30 flashing light every six seconds*, is moored about 2 cables southward of the point.

Chart 1994, 2006.

A rocky bank, with depths of less than 3 fathoms (5^m5) over it, extends about $1\frac{1}{2}$ cables offshore between Barons point and the head 35 of Kilcreggan bay, about one mile east-south-eastward. Kilcreggan town which, in 1951, had a population of 890, stands on the shore of the bay. Portkil point, on which there is a beacon, lies about half a mile eastward of Kilcreggan bay and separates Kilcreggan and Portkil bays. There is a pier at Kilcreggan, with a least depth of 10 feet 40 (3^m0) alongside.

Lights.—Fog signal.—Leading lights are exhibited, the front light at an elevation of 27 feet (8^m2), from a column, situated $4\frac{1}{2}$ cables west-north-westward of the north-western extremity of Prince's pier; and the rear light, at an elevation of 22 feet (6^m7), from a post situated 45 close southward of the front light-column. These lights in line, bearing 196° , and Rosneath Patch light bearing about 285° , mark the centre of a deep area known as The Hole, which has depths of from 20 to 38 fathoms (36^m6 to 69^m5).

Three lights, in the form of a triangle point up, are exhibited at 50 elevations of 26 and 22 feet (7^m9 and 6^m7) from a mast, 18 feet (5^m5) in height, situated about half a cable north-westward of the north-western extremity of Prince's pier (*Lat. $55^{\circ} 57' N.$, Long. $4^{\circ} 46' W.$*). A fog signal is sounded from this pier.

Dangers.—Buoyage.—Southward of a line joining Prince's Pier

Charts 1994, 2006.

lights and Ardmore head, about $2\frac{1}{4}$ miles east-north-eastward, Greenock bank extends right across the entrance to River Clyde, with the exception of the dredged channel along the south-western shore; the bank dries in places, and is marked near its north-western end, about 5 4 cables eastward of Prince's Pier light, by a spherical buoy, "No. 22," painted in black and red vertical stripes, and surmounted by two crosses, disposed vertically; at its north-western extremity, which is known as The Tail of the Bank, by a can light-buoy painted red, marked "No. 1" and exhibiting a *red flashing light every two seconds*; 10 and at the edge of the bank opposite Albert harbour, about $3\frac{1}{2}$ cables east-south-eastward of Prince's Pier lights, by a can light-buoy, painted red, marked "No. 2" and exhibiting a *red occulting light every six seconds*.

A conical light-buoy, painted black and exhibiting a *white occulting light every six seconds*, is moored about $1\frac{1}{2}$ cables northward of the north-western extremity of Prince's pier. 15

A vessel approaching Greenock from northward should bear in mind that the depths on the northern side of Greenock bank decrease rapidly from 5 to 3 fathoms (9^m1 to 5^m5). 20

Anchorages.—Mooring buoys.—The depths offshore, between Whiteforeland point (*Lat. 55° 58' N., Long. 4° 47' W.*), and The Tail of the Bank, are from 10 to 18 fathoms (18^m3 to 32^m9).

The usual anchorage is eastward of the line of Anchorage lights, which indicate the position of The Hole (see above), but the best holding ground for large vessels is northward of a line drawn from the light-buoy marking the southern side of Rosneath patch to the Hill of Ardinore, 3 miles eastward. No vessel should anchor southward of a line joining the cupola of the Master Mariners' Asylum, situated 3 $\frac{1}{2}$ cables south-south-eastward of Whiteforeland Point lighthouse, and 30 Darroch tower, situated about $1\frac{1}{4}$ miles westward of the same lighthouse. 25

No. 1 oiling anchorage, indicated by pecked lines on the chart, extends about three-quarters of a mile southward from the northern shore between Rosneath point, which is low and wooded, situated about $1\frac{1}{2}$ miles eastward of Portkil point, and a position about one mile 35 westward. No. 2 oiling anchorage, also indicated by pecked lines on the chart, extends about half a mile southward from the northern shore between a position about 2 cables westward of Portkil point and Barons point. No. 2 oiling anchorage should only be used when No. 1 anchorage is fully occupied. 40

Several mooring buoys, the positions of which may best be seen on the charts, are situated northward of Greenock bank.

A mooring buoy, A9, is laid $6\frac{1}{2}$ cables north-north-eastward of the north-western extremity of Prince's pier, and mooring buoy C25 about one mile north-eastward of the pier. 45

Submarine cable.—A submarine cable is laid between the north-western end of Prince's pier and No. 9 mooring buoy.

Tidal streams.—The streams in this area are not strong and are much affected by currents caused by wind, heavy rain, or melting snow (see "Currents" and "Sea level," pages 49, 48). When these effects 50 are non-existent, the in-going stream from between Kempock and Portkil points spreads out and runs eastward towards the river entrance and Ardmore head, and east-north-eastward towards Rosneath point; after passing the latter point the stream divides, and runs north-west-

Charts 1994, 2006.

ward towards Gareloch entrance, and south-eastward and southward towards Ardmore head and the river entrance. The out-going streams run in about the opposite directions. In the central parts of the area 5 the stream is more or less rotatory.

There are considerable differences between the times at which the streams begin in different parts of the area, and the effects of these differences, and of meteorological changes, are such that, for all practical purposes, the weak streams in the central parts of the area are 10 unpredictable; even near the land the streams are much affected by meteorological conditions. The streams described below are those which may be expected to run (when meteorological effects are absent).

In the entrance, between Kempock point (*Lat. 55° 58' N., Long. 4° 49' W.*) and Whiteforeland point on the southern side, and Portkil 15 point and Rosneath point on the northern side, the in-going stream begins — 0550 Greenock (—0430 Dover), and the out-going stream + 0010 Greenock (+ 0130 Dover); spring rate in both directions in mid-channel between Kempock point and Portkil point, and on both sides of Rosneath patch, is not more than about from one to 1·5 knots, but 20 is probably greater near the patch and off the salient points on both sides.

In Gourock bay the streams are irregular and weak, with a spring rate of not more than about 0·4 knot; at any time, the stream will be found to run in different directions in different parts of the bay.

25 At a position about one mile westward from Ardmore head the stream is more or less rotatory clockwise. It is weakest, nearly slack, in a north-easterly direction, — 0515 Greenock (— 0355 Dover); strongest spring rate 1·1 knots, in a direction 117°, — 0300 Greenock (— 0140 Dover); weakest, spring rate 0·4 knot, in a south-south-westerly 30 direction, + 0010 Greenock (+ 0130 Dover), and strongest, spring rate 1·0 knot, in a direction 320°, + 0410 Greenock (+ 0530 Dover).

The streams run regularly along the coast between Whiteforeland point and the entrance to the dredged channel of River Clyde, and begin about as in the channel between Kempock point and Portkil point.

35 Off Rosneath point the stream begins to run inwards toward Gareloch + 0540 Greenock (— 0525 Dover); after about — 0445 Greenock (— 0325 Dover) the stream divides off Helensburgh and runs also south-eastward and southward along the coast to Ardmore head and the river entrance. The out-going stream from Gareloch begins off 40 Rosneath point — 0005 Greenock (+ 0115 Dover) and is joined after about + 0140 Greenock (+ 0300 Dover) by the out-going stream running from the river entrance, northward and north-westward along the coast to off Helensburgh.

Charts 1994, 2006, 2007.

45 RIVER CLYDE.—This river, the first in commercial importance in Scotland, is formed by the confluence of numerous streams in the southern part of Lanarkshire. After running about 100 miles northward and north-westward, passing Lanark, Glasgow, Renfrew, and Dumbarton, it flows into the Firth at The Tail of the Bank, abreast Greenock 50 (*Lat. 55° 57' N., Long. 4° 45' W.*).

Extracts from the bye-laws enacted by the Clyde Navigation Trustees, the Clyde Pilotage Authority, and the Clyde Lighthouses Trustees will be found in Appendix III.

Charts 1994, 2006, 2007.

A copy of the Clyde Navigation Trustees' and of the Clyde Pilotage Authorities' bye-laws may be obtained from their office.

Special bye-laws are in force for vessels carrying explosives, petroleum and carbide of calcium.

Vessels carrying explosives must, on approaching the river, display at the masthead, by day, a red flag not less than 3 feet (0^m9) square and, at night, must exhibit a red light.

Caution.—The navigation of the river above The Tail of the Bank becomes intricate, and should not be attempted without a pilot. 10

Tidal streams.—At the entrance to the dredged channel of River Clyde the in-going stream begins about — 0550 Greenock (— 0430 Dover), the out-going stream begins about + 0010 Greenock (+ 0130 Dover). The duration of the in-going stream decreases, whilst that of the out-going stream increases as the river is ascended; off Glasgow the 15 in-going stream begins about — 0450 Greenock (— 0330 Dover) and the out-going stream begins about + 0055 Greenock (+ 0215 Dover).

The streams run generally in the direction of the channel, but at bends both the in-going and out-going streams set towards the outer 20 side. When meteorological effects are absent the streams are not of any great strength, but with heavy rain or melting snow, and strong northerly to easterly winds, the rate and duration of the out-going stream are much increased, and the in-going stream correspondingly reduced; in very dry weather with strong southerly to westerly winds 25 the duration and rate of the in-going stream are increased, and the out-going stream correspondingly reduced.

Channel, lights, Buoyage.—A channel with a least depth of 20½ feet (8^m1) had been dredged in 1957 from Prince's pier, Greenock, to Newark castle, at the eastern end of Port Glasgow, a distance of 30 3½ miles; it has a least width of 300 feet (91^m4). From Newark castle to Glasgow, a distance of about 15 miles following the course of the river, there are depths of from 25 to 27½ feet (7^m6 to 8^m4) in the fairway of the channel.

The dredged channel is marked by lights, light-buoys and buoys. 35

Pilots.—Clyde pilots are stationed on Gourock pier; they board vessels off Kempock point, Gourock, and pilot them into Greenock, Port Glasgow (*Lat.* $55^{\circ} 56' N.$, *Long.* $4^{\circ} 41' W.$), and to Glasgow. They also take vessels down to Little Cumbrae island, the limit of the pilotage district, and when intimation is given of an inward-bound vessel 40 requiring a pilot at Little Cumbrae island they meet the vessel there. Telegraphic messages from inward-bound vessels requiring a pilot should be addressed: "Pilotage, Glasgow."

Clyde pilots are also stationed at Glasgow to take vessels down the river to The Tail of the Bank or to Little Cumbrae island. Pilotage is 45 compulsory between Glasgow and Kempock point for vessels over 100 tons gross register, other than H.M. Ships, and to Little Cumbrae island on all vessels carrying passengers. Pilots are taken to and from vessels at Kempock point and at The Tail of the Bank and Little Cumbrae island by a steam pilot boat and auxiliary motor boat, which 50 carries the pilot flag at her masthead by day.

A vessel requiring a pilot in thick or foggy weather should sound letter G in the Morse Code on the whistle or siren; the pilot-vessel will reply with a similar signal; see page 6.

Charts 2131, 2159, 1577, 2635, 1824a.

Charts 1994, 2006.

Greenock.—The town of Greenock lies close eastward of Gourock, and extends south-eastward along the river bank. For conspicuous objects, see page 80.

5 The population was 76,299 in 1951.

Lights.—**Fog signal.**—The lights and fog signal north-westward of the north-western end of Prince's pier are described on page 80.

A light is exhibited on each side of the entrance to Albert harbour, about $2\frac{1}{2}$ cables south-eastward of the north-western extremity of 10 Prince's pier.

A light is exhibited on Custom House quay, about 4 cables south-eastward of Albert harbour. A fog signal is occasionally sounded from this quay.

A light is exhibited on each side of the entrance to East India harbour, about three-quarters of a cable south-eastward of Custom House quay.

A light is exhibited on each side of the entrance to Victoria harbour, about $1\frac{1}{2}$ cables south-eastward of East India harbour.

Two lights, disposed vertically, are situated on the head of Scott's 20 Yard jetty, about half a cable east-north-eastward of the entrance to Victoria harbour.

Two lights, disposed vertically, are exhibited from the north-western extremity of Garvel embankment, about $2\frac{1}{2}$ cables eastward of the entrance to Garvel basin.

25 A light is exhibited from Maurice Clark point, the south-eastern extremity of Garvel embankment.

Tidal harbours and wet dock.—**Light-buoys.**—Greenock has several tidal harbours or basins, and one wet dock. The tidal harbours are:—Albert harbour, with a depth of 14 feet (4 m 3); East India 30 harbour, with a depth of 13 feet (4 m 0) in its entrance, and 10 feet (3 m 0) inside. Deep water berth is situated north-westward of the entrance to Albert harbour. Two small basins, close eastward of Victoria harbour, the western giving access to a graving dock. Victoria harbour, (*Lat.* 55° 57' N., *Long.* 4° 45' W.), with a depth of 14 feet 35 (4 m 3). Garvel basin, with a depth of 20 feet (6 m 1) in the entrance, and with depths of 20 and 10 feet (6 m 1 and 3 m 0) inside on the southern and northern sides of the basin, respectively.

Great harbour, principally for the timber trade, has a length of about 4 $\frac{3}{4}$ cables, a breadth of one cable and a least depth, in 1943, of 19 feet 40 (5 m 8) in the entrance and depths of from 18 to 25 feet (5 m 5 to 7 m 6) in the fairway inside; there is an entrance from the river at its eastern end, about 300 feet (91 m 4) wide, the dredged channel through which is marked on its northern side by a light-buoy, painted black and exhibiting a *white flashing light every five seconds*, and on its southern side 45 by a light-buoy, painted black and exhibiting a *red flashing light every five seconds*.

There are some mooring buoys in Great harbour, the positions of which can best be seen on the plan.

James Watt dock, a wet dock, has entrances both from Garvel basin 50 and Great harbour; the latter is only used to float timber through; this dock is 2,000 feet (609 m 6) long and from 300 to 350 feet (91 m 4 to 106 m 7) wide. There are depths of 22 feet (6 m 7) in this dock, in which as the caissons are always closed near high water, vessels lie afloat in depths of from 29 to 32 feet (8 m 8 to 9 m 8).

Charts 1994, 2006.

Signal regulations for Garvel basin, James Watt dock and Garvel dry dock.—Greenock Harbour Trust bye-laws as to signal regulations are as follows:—

- I (a) Masters, Pilots and others in charge of vessels about to enter or leave James Watt dock or Garvel dry dock shall signify their intention by hoisting on the foremast, or where they can best be seen, the following signals, viz.:—
By day. International Code numeral pendant No. 0 shown at least 20 feet (6^m1) above the uppermost continuous deck. *10*
By night. Two all-round lights showing in a vertical line not less than 6 feet (1^m8) apart, the upper light to be *white*, and the lower light to be *red* and not less than 20 feet (6^m1) above the uppermost continuous deck.
(b) The foregoing signals shall be shown by up-coming vessels *15* on reaching Prince's pier, by down-going vessels on reaching the entrance to Great Harbour and by out-coming vessels before leaving their berth. They shall be shown until the vessel is within the dock or is in its normal position for passing up and down the river. *20*
- II. The signals permitting a vessel to enter Garvel basin and to proceed to James Watt dock are:—
By day. Semaphore arms exhibited at the south-west corner of Garvel basin (*Lat. $55^{\circ} 57' N.$, Long. $4^{\circ} 44' W.$*) at an elevation of 58 feet (17^m7) above H.W.O.S.T., having the *25* right hand or starboard arm as seen from the vessel lowered to an angle of 45° .
By night. A *green* light, at an elevation of 58 feet (17^m7) above H.W.O.S.T. showing from a pylon situated at the south-west corner of Garvel basin and visible on a dark night with clear *30* atmosphere at a distance of 3 miles.
- III. The signals permitting a vessel to enter Garvel basin and to proceed to Garvel dry dock are:—
By day. (a) The said right-hand or starboard arm of the foregoing semaphore arms lowered as aforesaid to an angle of *35* 45° , and
(b) A black ball hoisted on a mast situated at the south side of the entrance to Garvel dry dock.
By night. (a) A *green* light, at an elevation of 58 feet (17^m7) above H.W.O.S.T. showing from the foregoing pylon and *40* visible as aforesaid, and
(b) An *orange* light, at an elevation of 33 feet (10^m1) above H.W.O.S.T. showing from the foregoing mast at the south side of the entrance to Garvel dry dock.
- IV. The signals permitting a vessel to leave James Watt dock or *45* Garvel dry dock and to proceed out of Garvel basin are:—
By day. The said semaphore arms exhibited as aforesaid, having the right-hand or starboard arm as seen from the vessel leaving the dock lowered to an angle of 45° .
By night. A *green* light, at an elevation of 58 feet (17^m7) above *50* H.W.O.S.T. showing from a pylon situated at the south-west corner of Garvel basin.
- V. No vessel shall pass into Garvel basin in order to proceed to James Watt dock or Garvel dry dock and no vessel shall

Charts 1994, 2006.

- leave James Watt or Garvel dry dock and proceed out of Garvel basin while the foregoing semaphore arms are both in the horizontal position by day or while a *red* light is being exhibited at the foregoing elevation of 58 feet (17^m7) above H.W.O.S.T. from the foregoing pylon by night.
- VI. No vessel using only Garvel basin shall enter, leave or manoeuvre in the basin or make any change in her berthing position except during such time (whether by day or by night) as an all round *orange* light is being exhibited, at an elevation of 48 feet (14^m6) above H.W.O.S.T. from the foregoing pylon.
- VII. Any person offending against or committing a breach of these bye-laws shall on conviction be liable for every such offence to a penalty not exceeding five pounds sterling.
- 15 **Compass adjustment.**—The following true bearings are useful for adjusting compasses at Greenock. East chimney in line with Greenock church steeple, 188° 10'; west chimney in line with church steeple, 184° 20'. See also note on chart 2006.
- Deratification.**—See page 15.
- 20 **Port facilities.**—There are ample supplies of coal, fuel oil and ordinary ship's stores.
Water is laid on to the quays. Vessels at anchor can also be supplied.
There are three dry docks at Greenock; for the dimensions of the largest, see Appendix I.
- 25 Repairs can be executed.
There is a sailors' home.
Trade.—The chief imports are sugar, iron, grain, timber, linseed, cottonseed, and molasses; the chief exports are coal, iron, machinery, and refined sugar.
- 30 **Port Glasgow.—Lights.**—Port Glasgow (*Lat.* 55° 56' N., *Long.* 4° 41' W.), on the southern shore of the Clyde, 2 miles above Greenock, had a population of 21,618 in 1951. The port has extensive timber ponds, shipbuilding yards, and brass and iron foundries.
There is a depth of 15 feet (4^m6) at high water springs in the entrance 35 from the river to the two large basins at Port Glasgow; these basins have ample quay accommodation; there is a least depth of 7 feet (2^m1) alongside the wharves, which are connected with the railway system.
The steamboat quay, 1,000 feet (304^m8) long, has a least depth of 40 7 feet (2^m1) alongside it.
A light is exhibited, at an elevation of 39 feet (11^m9), from a black and white chequered column, 35 feet (10^m7) in height, situated on the north-western corner of the steamboat quay at Port Glasgow.
- 45 Beacon light is exhibited, at an elevation of 24 feet (7^m3), from a tower with a black and white chequered dome, 27 feet (8^m2) in height, situated off the entrance to Port Glasgow.
There is one dry dock and one patent slip at Port Glasgow; for the dimensions of the dock, see Appendix I.
- 50 **Trade.**—The imports at Port Glasgow are of a general nature. The principal exports are timber and bunker coal.
- Charts 2006, 2007.*
Dumbarton.—Dumbarton is situated mainly on the left bank of River Leven, a little above its junction with River Clyde, on the northern shore, about 6 miles above Greenock.

Charts 2006, 2007.

The population was 23,702 in 1951.

The entrance to River Leven is close westward of Dumbarton castle, the width of the channel being 100 feet (30^m5), with a least depth of 10 feet (3^m0) in the dredged channel.

Dumbarton castle, a double-peaked basaltic eminence, attains an elevation of 236 feet (71^m9), and is so steep as to be inaccessible except by steps on its southern side; from its southern side a disused pier projects about one cable southward.

Port facilities.—Supplies can usually be obtained from Glasgow. 10

Water is laid on to the quays of the two tidal basins.

Tidal basins.—The basin, close northward of Dumbarton castle, is about 900 feet (274^m3) long on the southern side, and 630 feet (102^m0) on the northern side; it is 205 feet (62^m5) wide, and has a least depth of 7 feet (2^m1). 15

The small basin at the northern end of the Leven shipbuilding yard is 500 feet (152^m4) long, 150 feet (45^m7) wide, with a least depth of 4 feet (1^m2).

Trade.—The imports are coal, cement and general merchandise, and the exports machinery. 20

Chart 2007.

Dunglass.—Signals.—At Dunglass (*Lat. $55^{\circ} 56' N.$, Long. $4^{\circ} 30' W.$*), on the northern side of the Clyde, about 2 miles above Dumbarton, the Anglo-American Oil Company have a basin, and tanker berths, with depths of 28 feet (8^m5) alongside close westward of it; vessels proceeding 25 into or out of the basin shall display M flag of the International Code by day, or exhibit a red light above a white light at night; no ship shall enter or leave the basin until her signal has been answered with the same flag from a flagstaff on either the north-western or south-eastern pier of the basin, according to the side on which she is to berth. 30

Bowling.—Bowling, about $2\frac{1}{2}$ miles above Dumbarton, on the northern side of the river, has an artificial harbour, the western part of which is generally occupied by laid-up vessels.

Special bye-laws are in force with respect to the conveyance, loading, and unloading of explosives, petroleum and carbide of calcium 35 at Bowling harbour.

The population was 676 in 1951.

Port facilities.—There are four 3-ton electric cranes at the quay, alongside which there is a least depth of 15 feet (4^m6). There is also a coal hoist at the inner basin with a lifting capacity of 120 tons. 40

There is a shipbuilding yard capable of constructing vessels up to about 1,000 tons, and repairs can be executed.

Supplies for shipping can be obtained from Glasgow.

Trade.—The chief export is coal, and the chief imports are ores, minerals, iron, and steel. 45

Forth and Clyde canal.—See page 90.

Old Kilpatrick.—Signals.—Old Kilpatrick, a small town on the north-eastern side of the river, about one mile above Bowling, has an oil wharf, alongside which the depths are from 25 to 30 feet (7^m6 to 9^m1).

A vessel intending to proceed to this wharf shall, by day, display the 50 answering pendant of the Commercial Code or on the foremast, at a height of 20 feet (6^m1) above the deck, and keep it displayed until the vessel is moored alongside; and also when leaving, from the time the vessel starts to unmoor until she is clear of the wharf. At night she

Chart 2007.

shall exhibit two lights, 3 feet (0^m9) apart, the upper one *red* and the lower one *white*, 20 feet (6^m1) above the deck, in a similar manner.

Rothesay dock.—Rothesay dock is a tidal basin, situated on the 5 northern bank of River Clyde, nearly opposite the mouth of River Cart and about $2\frac{1}{2}$ miles above Old Kilpatrick; it is connected with the general railway system.

The basin, which has a least depth of 22 feet (6^m7), has a length of quay inside of 1,846 yards (1,688 $m0$), and a riverside quay 199 yards 10 (182 $m0$) long, providing berths inside for several large vessels. The quays are well equipped with cranes, &c., for working cargo.

The entrance is 198 feet (60^m3) wide and the basin has a least depth of 22 feet (6^m7).

Signals.—A vessel about to enter or leave Rothesay dock (*Lat. 55° 54' N., Long. 4° 24' W.*) shall show on the foremast:

By day, International Code signal flag B at least 20 feet (6^m1) above the deck, or, at night, a *red* light placed at least 6 feet (1^m8) above the masthead light.

These signals are shown by up-coming vessels on reaching Dalmuir 20 lighthouse, which is situated about three-quarters of a mile north-westward of the entrance to the dock; by down-going vessels on reaching Renfrew ferry, and by out-coming vessels before leaving the berth; they are shown until the vessel has passed within the dock, or is in the normal position for passing up or down the river.

25 Signals for controlling the entrance to the dock are shown near the top of a framework mast on the eastern side of the entrance, which has a red arm on each side, and at night carries a *red* or a *green* light.

When the entrance is clear:

By day, the right arm, as seen from the vessel, is lowered to an angle 30 of 45°, or, at night, the *green* light is exhibited.

A vessel must not pass in or out when the arms are horizontal or when the *red* light is exhibited.

River Cart.—The mouth of River Cart is situated opposite the entrance to Rothesay dock; the entrance to the river and its lower 35 reaches, as far as Fullerton's yard, are well marked.

Renfrew.—Renfrew is situated on the southern side of the river, just above Rothesay dock. Its population was 17,091 in 1951. The harbour has a least depth of 15 feet (4^m6).

There is 350 feet (106^m7) of quayage at Renfrew, with a least depth 40 of 10 feet (3^m0) alongside. Renfrew Harbour wharf is about 500 feet (152^m4) long, with depths of from 10 to 13 feet (3^m0 to 4^m0) alongside.

About half a mile above Renfrew, on the south-western bank of the river, is Braehead repair berth, about 1,800 feet (548^m6) long and having a depth of 20 feet (6^m1).

45 **Climatic table.**—See page 36.

Overhead and submarine cables.—**Beacons.**—Overhead power cables, carried on towers, cross the river from Yoker, on the northern side of the river, abreast Renfrew, to Renfrew at a height above high water of 228 feet (69^m5). Not less than 8 feet (2^m4) clearance should 50 be given on account of the high pressure transmitted.

Three submarine cables cross the river close north-westward of the overhead cable; the south-easternmost is marked by beacons at each end.

A submarine cable crosses the river from Renfrew wharf; each end

Chart 2007.

of the cable is marked by a beacon consisting of a post carrying a red diamond with a white horizontal band, on which the word "CABLES" is painted in black letters.

The routes of these cables are indicated on the chart.

See page 7.

GLASGOW.—Glasgow, the most important manufacturing and commercial town in Scotland and the largest shipbuilding port in the world, is situated on the banks of the Clyde; the population was 1,189,767 in 1951.

The lower harbour, below the bridges, has about 9 miles of quayage, which will accommodate vessels drawing up to 30 feet (9^m1). The harbour above Glasgow bridge (*Lat. 55° 51' N., Long. 4° 16' W.*) has 1,506 feet (459^m0) of quayage, with a depth of 22 feet (6^m7) alongside at high water. There are numerous cranes.

Tidal basins.—King George V dock, a tidal basin, situated on the southern side of the river, has 5,202 feet (1 585^m6) of quayage.

The least depths alongside the quays are as follows:—East quay, 32 feet (9^m8); South quay, 19 feet (5^m8); West quay, 25 feet (7^m6).

The dock has depths of 32 feet 9^m8.

On East quay there are four 3-ton travelling cranes, and on West quay there are sixteen 5-ton cranes.

Queen's dock is a tidal basin on the northern side of the river about 2 miles above King George V dock, with an entrance 154 feet (46^m9) wide, depths of from 18 to 23 feet (5^m5 to 7^m0), and 10,005 feet (3049^m5) of quayage. There are cranes with lifting capacities of 30, 32 and 35 tons and four of 5 tons.

Prince's dock is a tidal basin on the southern side of the river, abreast Queen's dock, with depths of from 20 to 27 feet (6^m1 to 8^m2), and 11,211 feet (3417^m1) of quayage. There is a crane, with a lifting capacity of 130 tons, and numerous others of from 2 to 4½ tons capacity.

Kingston dock is a tidal basin on the southern side of the river, about one mile above the entrance to Prince's dock, with an entrance 52 feet (15^m8) wide, depths of 16 feet (4^m9), and 2,340 feet (721^m5) of quayage. There are three cranes with lifting capacity of 5 tons.

Signals. A vessel about to enter either Queen's dock or Prince's dock shall show on the foremast until within the dock:—

Queen's dock.—By day.—Flag B, International Code, at least 20 feet (6^m1) above the deck. At night. A red light placed at least 6 feet (1^m8) above the mast-head light.

Prince's dock.—By day. Flag N, International Code, at least 20 feet (6^m1) above the deck. At night.—Two red lights, disposed vertically 8 feet (1^m8) apart, above the masthead light.

The signals controlling the entrance to each dock are shown at the top of a framework mast at the pier-head, and are:—By day.—A red arm on each side. At night.—A red or green light.

When the arms of the semaphore are horizontal, or when the red light is exhibited, no vessel is to approach the dock entrance.

The signal for entering or leaving the docks, as seen by an approaching vessel is: By day.—The right arm lowered to an angle of 45°. At night.—The green light.

Quarantine.—*See page 15.*

Deratification.—*See page 15.*

Chart 2007.

Port facilities.—Coal, fuel oil, and supplies are obtainable.

Vessels can also take in fuel oil at Dunglass (see page 87), or elsewhere at their berths in the river, from a barge which carries 1,200 tons.

5 There are six dry docks and six patent slips at Glasgow; for the dimensions of the largest dry dock, see Appendix I.

All kinds of repairs can be executed.

There is no hospital especially for seamen, but there are several general infirmaries.

10 There is a sailors' home for Europeans as well as for Asiatics.

Trade.—The chief exports are coal, manufactured steel, machinery, spirits, etc.; and the imports are grain, flour, timber, sugar, fruit, hides, ores, oil, seeds, etc.

FORTH AND CLYDE CANAL.—Forth and Clyde canal connects

15 Firth of Forth and Firth of Clyde, and affords a navigable channel for vessels not exceeding 68 feet (20^m7) in length, $18\frac{1}{2}$ feet (5^m7) in breadth, and $7\frac{1}{2}$ feet (2^m3) in draught. The canal begins at Grangemouth, on Firth of Forth, passes near or through Falkirk and Kirkintilloch, and terminates at Bowling (*Lat. $55^{\circ} 56' N.$, Long. $4^{\circ} 29' W.$*), on the Clyde; 20 its length is 35 statute miles.

The average width of the canal is 63 feet (19^m2) at the surface and 30 feet (9^m1) at the bottom; the depth is about $8\frac{1}{2}$ feet (2^m3).

There are twenty locks on the eastern side of the summit level of the canal, giving a rise of $158\frac{1}{2}$ feet (48^m3), and nineteen locks on 25 the western side.

The bridges are movable, and vessels with masts not more than 65 feet (19^m8) high can pass freely.

Vessels over $7\frac{1}{2}$ feet (2^m3) draught can be provided with lighters to take such portion of the cargo as is necessary to lighten. Tables 30 of tolls and regulations can be obtained at the collectors' offices at Port Dundas, Grangemouth, and at Bowling.

Monkland canal connects with Forth and Clyde canal at Glasgow, and runs eastward of Gartsherrie, Dundyvan, and Woodhall, a distance of about 13 statute miles. The locks, a flight of eight pairs, sixteen 35 locks, at Blackhill, and a flight of two locks at Sheepford, give a rise of 117 feet (35^m7) from Glasgow, or $275\frac{1}{2}$ feet (84^m0) above ordnance datum. Each lock is 70 feet (21^m3) long, $13\frac{1}{2}$ feet (4^m1) wide, and has a depth of 6 feet (1^m8) on the sill. This canal can be used by vessels not exceeding 66 feet (20^m1) in length, $13\frac{1}{2}$ feet (4^m1) in width, $4\frac{1}{2}$ feet 40 (1^m4) draught, and $7\frac{1}{4}$ feet (2^m2) in height, with a greatest possible load of 60 tons. The bridges are fixed, and vessels with masts cannot pass.

Edinburgh and Glasgow Union canal begins at Edinburgh and terminates near Camelon, Falkirk. The canal is about 31 statute 45 miles in length, and is level throughout. It can be used by vessels not exceeding 66 feet (20^m1) in length, $11\frac{1}{4}$ feet (3^m5) in width, 4 feet (1^m2) draught, and $6\frac{1}{3}$ feet (1^m9) in height.

Charts 2000, 2006.

GARELOCH AND APPROACHES.—Gareloch is entered between 50 Limekiln point, about $3\frac{1}{2}$ miles north-north-westward of Prince's pier (page 80), the northern extremity of Greenock, and Rhu point, about $3\frac{1}{2}$ cables north-eastward.

Charts 2000, 2006.

Coast.—Beacon.—Mooring buoys.—On the north-eastern side of the Clyde estuary, opposite Greenock, the coast forms a bight between Ardmore head and Rhu point, about 4 miles north-westward.

Chart 2006.

Ardmore head (*Lat. 55° 58' N., Long. 4° 42' W.*) is a peninsula projecting about three-quarters of a mile from the mainland; it is low, rocky and covered with grass. In the central part of this peninsula is the Hill of Ardmore, about 80 feet ($24^{\text{m}}4$) high and crested with trees.

On the south-eastern side of Ardmore head is Ardmore house, which can be seen among the trees from River Clyde; on the summit of Hill of Ardmore is a circular building, about 30 feet ($9^{\text{m}}1$) in height, which is in ruins. Neither Ardmore house, nor the circular building, can usually be seen by vessels approaching Gareloch.

Between Ardmore head and Craigendoran pier, which is 700 feet ($213^{\text{m}}4$) long, about $1\frac{1}{2}$ miles northward, the coast is low and fronted by extensive hard mud flats, which dry out about $3\frac{1}{2}$ cables; there are some boulders on these flats. There is another pier close southward of Craigendoran pier. In the background is Killoeter ridge, which, about 2 miles north-eastward of Hill of Ardmore, attains an elevation of 972 feet ($296^{\text{m}}3$).

Charts 2000, 2006.

From Craigendoran pier the coast is low and fronted by a sea-wall, about 6 feet ($1^{\text{m}}8$) in height, forming the sea-front of Helensburgh, and extending to beyond Cairndhu point, $1\frac{1}{2}$ miles west-north-westward of Craigendoran pier. A flat of sand and stones extends $1\frac{1}{2}$ cables from the sea-wall off Helensburgh.

About one cable westward of the root of Helensburgh pier, which is situated about $8\frac{1}{2}$ cables west-north-westward of Craigendoran pier, is a stone obelisk, about 30 feet ($9^{\text{m}}1$) in height, with a large green bandstand and a tall flagstaff near it. About 3 cables north-north-eastward of the head of Helensburgh pier is a church, with a square clock tower and steeple.

Chart 2000.

Helensburgh pier projects 800 feet ($243^{\text{m}}8$) from the shore; it is built of stone at the base with a wooden pier-head, on which is situated a red-roofed office, abreast which there is a depth of about 9 feet ($2^{\text{m}}7$). There are landing steps on the stone portion of the pier. There is a low depth of $1\frac{1}{2}$ feet ($0^{\text{m}}5$) alongside the outer steps, the inner steps dry.

Two shoals, each with a depth of 6 feet ($1^{\text{m}}8$) over it, lie nearly half a cable south-westward and southward, respectively, of Helensburgh pier-head.

Cairndhu point has a gradual slope and is grassy, with trees in the background. Ardencale castle, about $1\frac{1}{2}$ cables within Cairndhu point, is conspicuous. An outfall sewer, marked at its outer end by a beacon, is situated about $1\frac{1}{2}$ cables northward of Cairndhu point.

Between Rosneath point and Castle point, about one mile north-north-westward, the coast is low and wooded to the water's edge. About midway between Rosneath and Castle points is Robert Ness, and between Rosneath point and Robert Ness, the coast is indented by Culwatty bay, the whole of which dries from one to 6 feet ($0^{\text{m}}3$ to $1^{\text{m}}8$). Green islet, about $1\frac{1}{2}$ cables northward of Rosneath point (*Lat. 55° 59' N., Long. 4° 46' W.*), is grass-covered, 5 feet ($1^{\text{m}}5$) high, and is

Charts 2131, 2159, 1577, 2635, 1824a.

Chart 2000.

difficult to distinguish. Rosneath farm, $5\frac{1}{2}$ cables west-north-westward of Green islet, is a castellated building with a tower; on certain bearings it is obscured by trees. Rosneath house, $4\frac{1}{2}$ cables north-north-eastward of Rosneath farm, is high, with a flat tower, but is not very conspicuous; south-eastward of Rosneath point Rosneath house can be seen through a clearing in the trees, but to a vessel proceeding northward, it will not be visible again until abreast Castle point. A flagstaff stands three-quarters of a cable southward of Castle point.

- 10 Rosneath bay is entered between Castle point and Limekiln point, about $8\frac{1}{2}$ cables north-westward; its shores are wooded, with sloping fields in the background, and are fringed by mud flats.

There is a small pontoon, with a depth of 14 feet (4^m3) alongside, close westward of Castle Point light-structure.

- 15 There are several mooring buoys, the positions of which may best be seen on chart 2000, situated northward and north-eastward of Castle point. (*Lat. $56^{\circ} 00' N.$, Long. $4^{\circ} 46' W.$*).

Chart 2000, plan of Rosneath bay.

A groyne, the extremity of which is marked by a pile beacon, extends half a cable eastward from a position on the coast about $6\frac{1}{2}$ cables westward of Castle point.

About $3\frac{1}{2}$ cables southward of Limekiln point there is a conspicuous block of sheds similar to aircraft hangars; a slipway leads out from the centre of the seaward side and there are the remains of a stone slipway about 2 cables farther northward. Some mooring buoys for small craft are laid close offshore.

A little southward of Limekiln point is an iron ferry pier, which in 1947 had depths of 9 feet (2^m7) alongside its head and was in a bad state of repair. There are landing steps for boats on the inner side 30 of the pier.

Between Cairndhu point and Rhu point the coast forms two small bays, and is fringed by a sea-wall throughout; the land in the background is wooded and slopes steeply from the high moorland to the sea.

- 35 Rhu point projects about $2\frac{1}{2}$ cables from the sea-wall and is awash for half its length at high water.

Immediately inland of Rhu point is the small village of Rhu; about $4\frac{1}{2}$ cables north-eastward of the south-western extremity of Rhu point is a flat-topped church, with four short spires, surrounded by 40 trees, but it is conspicuous in the approach to Gareloch.

Midway between Cairndhu and Rhu points is Rhu pier, a stone pier with a wooden pier-head, with depths, in 1947, of from 2 to 3 feet (0^m6 to 0^m9) alongside its head. There are stone steps just inside the pier-head. Rhu yacht club buildings and slipway between Cairndhu 45 point and Rhu pier are conspicuous.

About $3\frac{1}{2}$ cables north-westward of Rhu pier are the ruins of a jetty, the head of which is marked by a black post surmounted by a cone.

From Rhu point the coast trends north-north-westward, forming 50 the eastern side of Gareloch, and is wooded throughout its whole length to the water's edge.

Chart 2000.

There are landing piers, suitable for boats, about 4 cables north-north-eastward and 9 cables northward of the light-structure on Rhu

Chart 2000.

point. The southern pier is in ruins and, about 3 cables north-north-westward of its head, is an obstruction with a depth of 10 feet (3^m0) over it.

Northward of Limekiln point (*Lat. 56° 01' N., Long. 4° 48' W.*) 5 the western shore of the loch forms Stroul bay, where there is a boat pier and some slips. The coast is fringed by an earth cliff, 10 feet (3^m0) high, crested by trees for about half a mile; the town of Clynder faces the loch at this point, and is fronted by a low sea-wall. There is a detached pier in the middle of Stroul bay. 10

From Clynder, the western side of Gareloch trends north-north-westward, and is for the most part wooded to the water's edge.

Tidal streams.—The streams at the entrance to Gareloch, and in the narrows between Rhu point and Limekiln point, are shown in 12 diagrams on chart No. 2000; the differences between the times at 15 which these streams begin to run, and the changes in their directions and rates, have been found to be more constant when referred to low water, than to high water, at Greenock. In the diagrams the streams are referred to low water. When data regarding the streams in this locality are required the diagrams should be referred to for only their 20 general features are given in the description below.

Charts 2000, 2006.

Off Helensburgh the in-going stream to the loch (actually the out-going stream from the River Clyde, which runs along the coast from off Ardmore head) begins — 0230 Low Water Greenock (+ 0310 25 Greenock, + 0430 Dover), but off Rosneath point the in-going stream does not begin till Low Water Greenock (+ 0540 Greenock, — 0525 Dover); between these times streams run inwards towards the loch on the Helensburgh side of the entrance, and outwards from the loch on the Rosneath side. 30

The stream turns off Helensburgh (*Lat. 56° 00' N., Long. 4° 44' W.*) and begins to run south-eastward and southward along the coast +0200 Low Water Greenock (— 0445 Greenock, — 0325 Dover); between the time at which the in-going stream begins off Rosneath point and this time the stream runs inwards towards the loch in the whole 35 of the entrance. After the stream turns off Helensburgh the in-going stream from off Rosneath point divides and runs both inwards towards the loch and south-eastward and southward along the coast towards Ardmore head.

The out-going stream from the loch begins, both off Rosneath point 40 and off Helensburgh, — 0545 Low Water Greenock (— 0005 Greenock, + 0115 Dover); after about — 0400 Low Water Greenock (+ 0140 Greenock, + 0300 Dover) the stream is joined by the out-going stream from River Clyde which runs northward and north-westward along the coast to off Helensburgh; at a position southward of Rosneath 45 point till — 0230 Low Water Greenock (+ 0310 Greenock, + 0430 Dover) the combined streams run westward when the out-going stream from River Clyde begins to run inwards towards the loch.

When the stream on the Rosneath side of the entrance is running inwards there is little or no stream in Rosneath bay, but the out-going 50 stream from the loch runs round the bay.

The in-going stream attains a rate of about 1·6 knots at springs off Rosneath point and about 1·2 knots at springs off Castle point, but not more than about 0·5 knot elsewhere; the corresponding rates of the

Charts 2000, 2006.

out-going stream are about 2·4 knots off Rosneath point, 1·6 knots off Castle point, and 0·6 knot elsewhere. The rates of the streams increase as the narrows between Rhu point and Linnekiln point are approached.

The streams are subject to considerable variations with meteorological conditions; when these are such that the ebb stream from River Clyde is much increased, then, between about — 0230 Low Water and Low Water Greenock (+ 0310 and + 0540 Greenock, + 0430 and 10 — 0525 Dover), the out-going stream from the loch on and near the surface is forced westward and runs only in a narrow band round Rosneath point with in-going stream to the loch entrance between the band and the Helensburgh side; below the surface, however, the out-going stream from the loch runs as usual.

15 In the narrows between Rhu point and Linnekiln point the in-going stream, spring rate 2·8 knots, begins Low Water Greenock (+ 0540 Greenock, — 0525 Dover) and the out-going stream, spring rate 2·9 knots, begins — 0530 Low Water Greenock (+ 0010 Greenock + 0130 Dover). During about the last $\frac{1}{2}$ hours of the out-going stream the 20 in-going stream on the Helensburgh side of the entrance curves round southward of the spit extending from Rhu point and joins the out-going stream from the narrows.

In Gareloch the streams are imperceptible, except near the narrows at the entrance.

Chart 2006.

Lights.—Fog signal.—A light is occasionally exhibited, at an elevation of 20 feet (6^m1), from a column, 13 feet (4^m0), in height, situated on the head of the northern pier at Craigendoran. A light is occasionally exhibited, at an elevation of 20 feet (6^m1), from a column, 13 feet 30 (4^m0) in height, situated on the head of the southern pier at Craigendoran.

A fog signal is occasionally sounded from the northern pier.
Chart 2000.

A light is exhibited, at an elevation of 23 feet (7^m0), from a column, 16 feet (4^m4), in height, situated on the head of Helensburgh pier.

A light is exhibited, at an elevation of 26 feet (7^m9), from a column, 17 feet (5^m2) in height, situated on the root of Helensburgh pier.

It is reported that the lights on Helensburgh pier are difficult to distinguish from the street lighting.

40 A light is exhibited, at an elevation of 27 feet (8^m2), from a red mast, 15 feet (4^m6) in height, situated on Castle point (*Lat. 56° 00' N., Long. 4° 46' W.*).

Chart 2000, plan of Rosneath bay.

A light is exhibited, at an elevation of 16 feet (4^m9), from a black 45 beacon, surmounted by a tank, 23 feet (7^m0) in height, situated on the extremity of Rhu point. *See view facing this page.*

Leading lights are exhibited at Rosneath, the front light at an elevation of 19 feet (5^m8), the rear light at an elevation of 23 feet (7^m0); each light is shown from a mast with a white diamond topmark, and 50 in line bear 285°.

Submarine cables.—Beacons.—Anchorage is prohibited, on account of submarine cables, in an area, the limits of which are indicated by pecked lines on the chart, extending southward from the western end of Helensburgh.

To face page 94.



Rhu Point light-beacon
(Original dated 1841.)



Imachar point, bearing 348° and open westward of Drumadoon point.
(Original dated 1840.)



Chart 2000, plan of Rosneath bay.

Submarine cables, the positions of which are indicated on the chart, are laid between Limekiln and Rhu points and another is laid in a north-westerly direction from Limekiln point.

A wooden beacon, painted red and white in horizontal bands and 5 surmounted by a diamond, is situated about three-quarters of a cable southward of Limekiln point. A cable support, consisting of a green framework structure surmounted by a red and white diamond, is situated about three-quarters of a cable north-eastward of the light-beacon on Rhu point. Five piles have been erected between the cable 10 support and Rhu Point light-beacon.

A submarine cable, the position of which is indicated on the chart, extends about $1\frac{1}{2}$ cables southward from the shore at Gully Bridge, about one mile northward of Rhu point.

Submarine cables, the positions of which are indicated on the chart, 15 extend west-south-westward from the shore on Rowmore point, on the eastern side of the loch near its head. *See page 7.*

Measured distance.—About half-way up the loch, on the western shore, two pairs of white beacons mark a measured distance of 6,080 feet (1,853^m2). The running courses are 336° and 156° ; each pair of 20 beacons in line bear 246° .

White pole beacons also mark a quarter and half of this distance.

Dangers in approaches.—Beacon.—Light-and-bell-buoy.—Rosneath patch is described on page 79.

25

Charts 2000, 2006.

Between Ardmore head and Helensburgh the shore is bordered by a bank, which with depths of less than 18 feet (5^m5), extends as much as $1\frac{1}{2}$ miles offshore.

A shoal, with a depth of 25 feet (7^m6) over it, lies $2\frac{1}{2}$ cables south- 30 eastward of Rosneath point. A spit, with depths of less than 6 fathoms (11^m0) over it, extends about $2\frac{1}{2}$ cables south-eastward from the western side of Rosneath point (*Lat. 55° 59' N., Long. 4° 46' W.*).

Perch rock, a small flat rock, covered with seaweed, which dries 35 6 feet (1^m8), lies $1\frac{1}{2}$ cables eastward of Green islet; a small rock, covered with seaweed, which dries 2 feet (0^m6), lies close north-eastward of Perch rock. A can light-and-bell-buoy, painted red, marked "No. 24" and exhibiting a *red flashing light every five seconds* is moored south-eastward of these rocks.

The southern shore of Rosneath bay westward of Castle point, is 40 fringed by a bank, with depths of less than 3 fathoms (5^m5) over it, extending as much as $1\frac{1}{2}$ cables offshore.

Chart 2000.

Between Castle and Limekiln points the shore is fringed by a bank which dries and which, with depths of less than 18 feet (5^m5) over it, 45 extends as much as $1\frac{1}{2}$ cables offshore.

Chart 2000, plan of Rosneath bay.

Dangers In Gareloch.—Beacons.—Buoyage.—Limekiln point is fringed by a bank, which dries and which, with depths of less than 18 feet (5^m5) over it, extends as much as $1\frac{1}{2}$ cables northward from the 50 point. A red perch marks the eastern edge of this bank.

The shore north-eastward of Rhu point is fringed by a bank, which dries and which, with depths of less than 18 feet (5^m5) over it, extends as much as 2 cables offshore.

Chart 2009, plan of Rosneath bay.

A red can light-buoy, exhibiting a *red flashing light every four seconds*, is moored on the western side of the channel about one cable northward of Limekiln point. A black conical light-buoy, exhibiting a *white 5 flashing light every three seconds*, is moored on the eastern side of the channel about $1\frac{1}{2}$ cables northward of Rhu Point light-beacon.

A black conical buoy, marked C.L.T. (26), is moored $2\frac{1}{2}$ cables north-north-westward of Rhu Point light-beacon. A red can buoy, marked C.L.T. (25), is moored about $1\frac{1}{2}$ cables north-westward of the same light-beacon.

Carraig an Roin, about $4\frac{1}{2}$ cables west-north-westward of Limekiln point, dries 10 feet (3^m0).

Chart 2006.

Anchorages.—Mooring buoys.—Wharves.—Small vessels can obtain good anchorage between Ardinore head and Craigendoran, in depths of from 14 to 18 feet (4^m3 to 5^m5), mud and clay. The tidal streams are not strong at this anchorage (see page 93), but south-westerly winds cause a short choppy sea. The bottom here is somewhat uneven.

Chart 2000.

Small vessels can anchor anywhere off Helensburgh, taking care to avoid the area described above in which anchorage is prohibited and also the route for vessels between Craigendoran and Rhu.

Rosneath bay affords anchorage for small vessels with local knowledge, and is sheltered from southerly winds, but the bottom is irregular and rocky in places.

Small vessels can obtain good anchorage between Cairndhu and Rhu points; but the anchorage is somewhat limited owing to yacht moorings. This anchorage is more sheltered and convenient than Helensburgh, but in a southerly gale it is unsafe and landing is impossible; under these conditions vessels are advised to seek an anchorage in Rosneath bay. (*Lat. $56^{\circ} 00' N.$, Long. $4^{\circ} 47' W.$*).

Vessels may anchor temporarily in any part of Gareloch in suitable depths, but the holding ground is bad, the bottom consisting of mud and loose stones.

There are a number of mooring buoys in Gareloch.

At Faslane bay, on the eastern side of the loch about one mile southward of the head, there is a deep-water wharf and a lighter wharf; in 1958, there were depths of between 28 and 33 feet (8^m5 and 10^m1) alongside the former and of one to 7 feet (0^m3 to 2^m1) alongside the latter, which continues northward of Deep Water wharf. The southern part of Deep Water wharf forms the Naval base, the northern part and lighter wharf are used by a shipbreaking firm.

Immediately southward of Deep Water wharf is a stone jetty about 450 feet (137^m2) in length, with depths of 4 to 11 feet (1^m2 to 3^m4) alongside. Close southward also is the Admiralty fuel depot pier, about 200 feet (6^m1) long, with a depth of about 30 feet (9^m1) alongside.

About 2 cables northward of Rowmore point are two fuelling jetties; the depth alongside the southern jetty is 45 feet (13^m7) and alongside the northern one is between 36 and 40 feet (11^m0 and 12^m2). These jetties are about 200 feet (61^m0) long and there are hollards on the shore.

There are few piers on both sides of the loch, that on the eastern side at Gareloch head is in a ruinous state.

There are a few piers on both sides of the loch; that on the eastern side at Garelochhead is in ruins.

Charts 2000, 2006.

Directions.—A vessel approaching the entrance to Gareloch should round Rosneath point (*Lat. 55° 59' N., Long. 4° 46' W.*) at a distance of about 5 cables, but it must be remembered that the tidal streams set strongly across the shoals in this vicinity. There is a considerable amount of traffic, due to vessels proceeding to and from Craigendoran and Helensburgh piers. 5

Chart 2000.

When Rhu church bears 328° a vessel can steer for it on this bearing until Castle point bears 267°, when course can be altered for Limekiln point, bearing 299°. When Rhu church bears 360° she should steer for the ferry pier southward of Limekiln point bearing 290°. 10

When Rhu church bears 040° course should be shaped to pass through the narrows between Limekiln and Rhu points, and between the buoys marking the channel; caution is necessary on the ebb tide, as a vessel may be set towards the shoal water off Limekiln point. 15

Helensburgh.—Water can be obtained from a hydrant on the pier. Small quantities of provisions are obtainable.

There are two hospitals in the town, one of which is for infectious diseases. 20

Garelochhead.—Garelochhead is a large village situated at the head of Gareloch.

Floating docks.—**Submarine cable.**—Floating docks are moored about 3½ cables westward of Rowmore point, situated on the eastern shore about 7½ cables from the head of the loch, and 5 cables westward of the southern end of Deep Water wharf. A submarine cable is laid from the north eastern corner of the former dock, east-south-eastward to the eastern shore of the loch. *See page 7.* 25

(*Charts 3746, 3739.*)

30

LOCH LONG.—Loch Long is entered between Barons point (page 80) and Strone point, a rounded promontory, 1½ miles westward. It is a narrow arm of the sea, trending about 15 miles northward and north-north-eastward to Arrochar; about 6½ miles within its entrance, on its western side, below Meall Daraich, is the entrance to Loch Goil. 35

The navigation of Loch Long is dangerous for sailing boats on account of the squalls, sudden calms, and variable winds to which the loch is subject, owing to the surrounding mountains and deep valleys.

For the light-buoy situated about 2 cables southward of Barons point, *see page 80.* 40

Aspect.—Both sides of the lower part of Loch Long are hilly, but the upper part of the loch, except for a distance of 1½ miles on its eastern side above Meall Daraich, where the mountains stand back from the coast, is enclosed by high and precipitous mountains and hills with many rocky crags, several of the mountains being over 2,000 feet (609m6) high; the lower slopes of the hills are wooded in many places, but there is little cultivated or enclosed land. 45

Chart 3746.

Lower part of Loch Long.—**Lights.**—**Beacon.**—**Mooring buoys.**

—A conspicuous boat-house stands on Gairletter point, about 2 miles northward of Strone point, and a conspicuous hotel stands on Ardentinny point on the western side of the loch about 3½ miles northward of Strone point. 50

A light is exhibited, at an elevation of 29 feet (8m8), from a white

Charts 2131, 2159, 1577, 2635, 1824a.

Chart 3746.

column, 17 feet ($5^{\text{m}}2$) in height, on a point about 5 cables southward of Ardentinny point (*Lat. $56^{\circ} 03' N.$, Long. $4^{\circ} 54' W.$*).

Finart bay is entered, on the western side of the loch, between 5 Ardentinny point and Shepherd's point, about three-quarters of a mile northward.

A beacon consisting of an iron framework tripod, 20 feet ($6^{\text{m}}1$) high, the upper part of which is plated over and painted white, stands on Shepherd's point.

- 10 A light is exhibited, at an elevation of 27 feet ($8^{\text{m}}2$), from a white column, 13 feet ($4^{\text{m}}0$) in height, about $4\frac{1}{2}$ cables north-eastward of Shepherd's point.

Several mooring buoys are situated in the lower part of Loch Long, the positions of which may best be seen on the chart.

- 15 Submarine exercise area.—Submarines exercise in the area northward of *Lat. $56^{\circ} 03' N.$* A good lookout should be kept for them. See Admiralty Notice to Mariners No. 8 of the current year.

Chart 3739, with plan of Approaches to Finnart.

Upper part of Loch Long.—Lights.—Meall Daraich is bold and 20 precipitous; Carraig nan Ron or Dog rock, 11 feet ($3^{\text{m}}4$) high, lies close south-eastward of Meall Daraich, to which it is joined by a reef which dries.

A light is exhibited, at an elevation of 23 feet ($7^{\text{m}}0$), from a white column, 17 feet ($5^{\text{m}}2$) in height, on Carraig nan Ron.

- 25 Portincaple, on the eastern shore of Loch Long, opposite Meall Daraich, is a small hamlet; Arddaroch house, close to the eastern shore, about one mile farther up the loch, is situated in wooded grounds, and is large and conspicuous.

For lights at Finnart, see page 101.

- 30 Cnap point, on the western shore, about $4\frac{1}{2}$ cables northward of Arddaroch house, is 106 feet ($32^{\text{m}}3$) high, and projects slightly into the loch.

A light is exhibited, at an elevation of 26 feet ($7^{\text{m}}9$), from a white column, 17 feet ($5^{\text{m}}2$) in height, on Cnap point.

- 35 Glenmallan burn flows into the loch on its eastern side, about 9 cables above Arddaroch house.

Chart 3739.

Between Cnap point and Ardgartan point, $4\frac{1}{2}$ miles north-north-eastward, both shores of the loch are steep-to, except just off the 40 mouth of Glenmallan burn. Ardgartan point, formed by the delta of Croe water, is low, and projects into the loch; Ardgartan house stands on Ardgartan point (*Lat. $56^{\circ} 11' N.$, Long. $4^{\circ} 47' W.$*), surrounded by trees, and at the extremity of the point is an open grass field.

- Croe water flows into Loch Long on its western side about $1\frac{1}{2}$ miles 45 from the head of the loch, and Loin water flows into the head of the loch.

The Cobbler, a conspicuous crag of Beinn Arthur, situated about 2 miles westward of the head of Loch Long, is, 2,885 feet ($879^{\text{m}}3$) high. *Charts 3746, 3739.*

- 50 Tidal streams.—In the lower part of Loch Long the in-going stream begins — 0550 Greenock (— 0430 Dover) and the out-going stream begins + 0010 Greenock (+ 0130 Dover); the spring rate in both directions is about 0.8 knot at the entrance, decreasing inwards; in the upper part of Loch Long the streams are barely perceptible.

Chart 3746.

Submarine cables.—**Beacons.**—**Pier.**—**Lights.**—**Light-buoy.**—Submarine cables, the limits of which are indicated by pecked lines on the chart are laid in an area in the entrance to Loch Long. The western end of the northern limit of this area is marked by a ⁵ beacon a short distance offshore. A beacon stands near the shore on each side of the loch about one cable and $1\frac{1}{2}$ cables, respectively, southward of the northern limit.

Submarine cables are laid in an area, indicated on the chart by pecked lines, between Carraig Mhaol (see below) and a position on the ¹⁰ western side of the loch nearly 2 miles north-north-westward. See page 7.

A conspicuous framework tower stands on the shore of this area about 8 cables east-south-eastward of Shepherd's Point beacon. A pier extends 80 yards ($73^{\text{m}}2$) west-south-westward from abreast this tower. ¹⁵

Two lights, disposed vertically, are exhibited, at elevations of 33 and 39 feet ($10^{\text{m}}1$ and $11^{\text{m}}9$), from the head of the pier.

A conical light-buoy exhibiting a *white flashing* light, *every ten seconds*, is moored about half a cable south-westward of the head of the pier. ²⁰

Charts 3746, 3739.

Dangers.—**Beacon.**—**Light-buoy.**—A spit which dries, extends about three-quarters of a cable south south-eastward from Strone point; depths of less than 5 fathoms ($9^{\text{m}}1$) extend $1\frac{1}{2}$ cables farther southward. ²⁵

A can light-buoy, painted red, marked No. 30, and exhibiting a *white group flashing* light showing *two flashes every twelve seconds*, is moored $2\frac{1}{2}$ cables southward of Strone point.

Between Strone point and Gairletter point, the western side of Loch Long is bordered by a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) ³⁰ over it, extending from three-quarters of a cable to $1\frac{1}{2}$ cables offshore, but northward of Gairletter point the western shore of the loch is practically steep-to, with the exception of Ardgartan bank at the mouth of Croe water.

Chart 3739.

This bank extends about one cable southward and three-quarters of a cable south-eastward from the southern side of Ardgartan point and dries; it consists of gravel, sand, and stones, and is marked at its eastern edge by a red wooden pole, 20 feet ($6^{\text{m}}1$) high, surmounted by a cylinder. ⁴⁰

Chart 3746.

Between Barons point and Carraig Mhaol, $3\frac{1}{2}$ miles north-north-westward, the eastern side of Loch Long is bordered by a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extending as much as 2 cables offshore, within three-quarters of a mile southward of the latter. ⁴⁵

About half a mile southward of Carraig Mhaol foul ground extends about $2\frac{1}{2}$ cables offshore.

Charts 3746, 3739.

Northward of Carraig Mhaol (*Lat. $56^{\circ} 03' N.$, Long. $4^{\circ} 53' W.$*) the eastern shore of the loch is almost steep-to, with the exception of ⁵⁰ banks of stones and boulders at the mouth of Glenmallan burn, which dry out about half a cable, about $5\frac{1}{2}$ miles farther northward.

Chart 3739.

The head of the loch dries out about 2 cables.

Charts 2131, 2159, 1577, 2635, 1824a.

Chart 3746.

Measured distance.—Measured distance beacons are erected on the eastern side of Lower Loch Long when required; the northern and southern limits and the centre line are each marked by two beacons.

The southern beacons are situated about $1\frac{1}{2}$ miles south-south-eastward of Carraig Mhaol, and the northern beacons half a mile farther northward.

The total distance on a course of 350° or 170° is 3,042 feet (927^m2) in two sections.

Chart 3739.

Torpedo range.—A torpedo range has been established in the upper part of Loch Long, the firing station being about midway between Ardgartan point and the head of the loch, and the southern limit of the range being about half a mile northward of Cnap point.

Bye-laws are in force in the area, the limits of which are shown by pecked lines on chart 3739.

The range will be in use several hours daily for running uncharged torpedoes, except on Sundays and generally after noon on Saturdays, but the area will not be closed to the public after noon on Saturdays from the 15th June to the 15th September, inclusive.

There will be intervals between consecutive runs.

When the range is in use flags will be displayed at the firing station, at the south-westernmost target in use at the time, and at the intervening targets.

Red flags displayed at half-mast indicate that preparations are being made for running a torpedo, and that any vessel within the range must move out of it with all reasonable speed.

The red flags are displayed close-up immediately before the torpedo is discharged and until the torpedo has completed its run, which occupies from two to six minutes.

White flags indicate that torpedo running is temporarily suspended.

Vessels or boats having occasion in the course of their passage to cross the line of range, or to enter any portion of the range area, may do so while white flags are displayed, but they must cross or pass through the area with all reasonable speed, and keep well clear of the targets.

Floating targets, on which lights will be exhibited during such hours and in such a manner as may be prescribed by the Board of Trade, will be moored on the line of range at intervals of about 1,000 yards (914^m4) from the firing station.

Beacons, in connection with the torpedo range, are erected on both sides of the loch.

Caution. Vessels are cautioned against anchoring or fishing within the range area owing to the existence of submarine cables.

Charts 3746, 3739.

Anchorages. — Piers. — Lights. — Beacon. — Directions. —

Mooring buoys.—For about 4 miles from the entrance, anchorage may be had at a moderate distance offshore on either side of the loch, but beyond this distance, and as far northward as Meall Daraich (*Lat.* $56^{\circ} 06' N.$, *Long.* $4^{\circ} 52' W.$), the shores have deep water close to.

There is fair anchorage in Finart bay at a moderate distance from the shore, but with north-westerly winds, squalls develop in Glen Finart, and blow with great violence during gales.

Chart 3746.

There is a pier at the northern end of Finart bay; a flagstaff stands about $1\frac{1}{4}$ cables south-westward of the pier.

Chart 3739.

Small vessels can obtain temporary anchorage off Portincaple, also close southward of Cnap point, and close southward of Ardgartan point. There is good anchorage anywhere within half a mile from the head of the loch, in depths of from 8 to 12 fathoms (14^m6 to 21^m9), mud bottom, and good holding ground.

Chart 3739, plan of Approaches to Finnart.

10

At Finnart, on the eastern side of the loch about $1\frac{3}{4}$ cables north-eastward of Arddaroch house, there is a T-headed oil pier with a depth, in 1954, of 37 feet (11^m3) alongside the head which is 300 feet (91^m4) long. There are dolphins about 200 and 300 feet (61^m0 and 91^m4) from each end of the pier-head; another stands about $1\frac{3}{4}$ cables north-eastward of the north-eastern end of the pier-head.

Lights are exhibited from each end of the pier-head.

Leading lights, about three-quarters of a cable apart, are occasionally exhibited near the root of the pier.

Water is laid on to the pier.

20

A small pier extends from the shore a short distance south-westward of the oil pier.

A large vessel, intending to berth alongside the head of Finnart oil pier, having passed the entrance to Loch Goil should keep in the middle of the loch and steer to bring a small beacon at Strone, on the eastern side of the loch, about $8\frac{1}{2}$ cables north-north-eastward of Finnart pier, into line with the northern end of a white house north-eastward of it, bearing 042°, and keep it so, which leads south-eastward of the bank, extending from Cnap point, in a depth of about 14 fathoms (25^m6). When past Cnap point the vessel can turn in deep water in the middle of the loch and then steer for the pier; at night, the leading lights near the root of the pier in line, bearing 197°, lead towards the pier.

Chart 3739.

A mooring buoy is situated about $3\frac{1}{2}$ cables south-westward of Ardgartan point.

Several mooring buoys for small craft, are situated about $6\frac{1}{2}$ cables north-eastward of Ardgartan point (*Lat.* 56° 11' N., *Long.* 4° 47' W.).

Arrochar.—Arrochar village stands on the eastern shore at the head of the loch. Arrochar hotel is conspicuous, and in front of it is a wooden pier, 160 feet (48^m8) long, with a T-head, alongside which there is a least depth of 9 feet (2^m7). Vessels call regularly at the pier during the summer.

Fresh provisions and supplies in small quantities can be procured in the village, and in large quantities from Glasgow.

Loch Goil.—Loch Goil, a narrow branch of Loch Long, is entered southward of Meall Daraich.

The navigation of Loch Goil is dangerous for sailing boats for the same reasons as it is in Loch Long, *see* page 97.

Tidal streams.—The tidal streams are almost impereceptible in Loch Goil.

Dangers.—Beacon.—Buoy.—Mooring buoys.—Between Rubha nan Eoin, the south-western entrance point of Loch Goil, and Rubha

Charl 3739.

Ardnahien, 8 cables north-westward, the south-western shore of the loch is foul for about $1\frac{1}{2}$ cables offshore.

A shoal, with a depth of 16 feet (4^m9) over it, is situated about $4\frac{1}{2}$ cables north-westward of Rubha Ardnahien, and about one cable from the western shore, abreast Carrick (page 103). A reef, about $8\frac{1}{2}$ cables north-north-westward of Rubha Ardnahien, and 2 cables from the western shore, has a depth of less than 6 feet (1^m8) over it, and is marked by a red beacon, locally known as the "Perch."

10 A shoal, with a depth of 8 feet (2^m4) over it, about $9\frac{1}{2}$ cables from the head of the loch, is situated about half a cable north-north-eastward of Douglas pier, and is marked on its eastern side by a can buoy painted red and marked "Douglas."

Several mooring buoys are laid on the western side of the loch 15 within $4\frac{1}{2}$ cables south-south-eastward and 4 cables northward of the head of Douglas pier.

The eastern side of Loch Goil is almost steep-to, and is free from dangers, except about half a mile within the entrance of the loch, where it dries about half a cable offshore.

20 The head of the loch dries out about $2\frac{1}{2}$ cables.

Caution.—An Admiralty trials range is established in Loch Goil; it is in use daily through the year, except on Sundays, and while in use the loch is closed to navigation and a vessel displaying a large red flag patrols the entrance.

25 The normal times for closing the loch are:—

(a) 1st June to mid-September:—From 0800 to 1200 and from 1505 to 1900 from Monday to Friday inclusive, and from 0800 to 1200 on Saturdays.

(b) Mid-September to 31st October, and 1st February to 31st May:—

30 From 0800 to 1200 and from 1400 to 1800 from Monday to Friday inclusive, and from 0800 to 1200 on Saturdays.

(c) 1st November to 31st January:—As at (b) subject to variation in special circumstances, but the loch will not normally remain closed later than 1700 from Monday to Friday inclusive.

35 Vessels are warned not to anchor in shoal water on the western side of the loch between Leac Bhuidhe, situated about one mile northward of Carrick, and Blairlomond, about 2 miles farther northward, or in deep water in any part of the loch southward of Blairlomond.

Rafts, and other surface obstructions, in connection with the range 40 exhibit lights at night.

Douglas pier and naval mooring buoys are for the exclusive use of naval craft.

Anchorages.—Small vessels can obtain good anchorage off the western side of Loch Goil, about 2 cables north-eastward of Carrick 45 (*Lat. 56° 06' N., Long. 4° 54' W.*), in a depth of 10 fathoms (18^m3), sand and mud, good holding ground.

There is also good anchorage for small vessels between the Perch and Leac Bhuidhe, off the western shore of the loch, in depths of from 10 to 20 fathoms (18^m3 to 36^m6), mud, good holding ground.

50 Small vessels can obtain good anchorage about 3 cables from the head of the loch, in a depth of 23 fathoms (42^m1), mud, fair holding ground.

Directions.—A vessel entering Loch Goil should bring the Perch in line with a conspicuous notch on Cruach nam Miseag, (chart 2131), a

Chart 3739.

mountain (1,983 feet (604^m7) high, 1½ miles north-westward, bearing 318°, which leads through the entrance in a least depth of 7 fathoms (12^m8).

Carrick.—Carrick is a small village on the western side of Loch Goil. 5 The ruins of Carrick castle, which are conspicuous, lie on a point fronting Carrick village.

Local vessels call here regularly.

Small quantities of provisions are obtainable at Carrick.

Lochgoilhead.—Lochgoilhead, a village situated at the head of 10 Loch Goil, had a population of 988 in 1951. Drinsynie house, on the western side of the village, is conspicuous.

Local vessels call regularly.

There is a pier on the eastern side of the head of the loch, where water can be obtained. Small quantities of provisions are obtainable 15 at Lochgoilhead. (*Lat. 56° 10' N., Long. 4° 54' W.*).

Chart 3746.

Holy loch.—**Beacon.**—**Light-buoy.**—Holy loch is entered between Hunter's Quay (page 78) and Strone point, 8½ cables north-north-eastward. Strone point, the spit extending southward from it and No. 30 20 light-buoy, which marks the spit, are described on pages 97 and 99, respectively.

There are no dangers in the fairway of the loch, the head of which dries out about 4 cables.

There is a pier in Ardnadam bay, on the south-western side of the 25 loch, about 1½ miles within the entrance; a shoal, with a depth of 13 feet (4^m0), rock over it, lies half a cable north-westward of the pier-head; a beacon marks a sewer outfall, about 1½ cables westward of the pier.

Vessels frequently anchor in the loch, where most convenient, during southerly and south-westerly gales, but with north-westerly 30 gales there are violent squalls.

The holding ground in the inner half of the loch was reported, in 1949, to be poor.

Tidal streams.—The tidal streams in Holy loch are almost imperceptible. 35

Measured distance.—A measured distance of 3,041 feet (926^m9), marked by beacons, is situated on the south-western side of Holy loch, across Ardnadam bay.

The running course is 108° or 288°.

Communication.—Local vessels call here frequently.

Port facilities.—Small supplies of provisions are obtainable at Ardnadam, Sandbank, Strone, and Kilmun; Sandbank is a village about 1½ miles west-north-westward of Hunter's Quay, and Kilmun is a village about one mile west-north-westward of Strone.

Water can be obtained at the piers at Sandbank, Strone and Kilmun. 45

Charts 2131, 2144.

KILBRANNAN SOUND.—Kilbrannan sound, between the eastern side of the Peninsula of Kintyre and the western side of Island of Arran, extends from abreast Island Davarr (page 64) about 21½ miles northward to Skipness point, where it joins Inchmarnock water and Bute sound. 50

Chart 2144.

King's caves, on the western side of Island of Arran, about 6½ miles north-north-westward of Cleitcadh Mòr (page 65), are situated in the

Chart 2144.

sandstone cliffs forming the western face of Torr Righ Mòr (*Lat. 55° 32' N., Long. 5° 20' W.*) and can be identified from a distance.

Tidal streams.—The streams of Firth of Clyde run across the entrance to Kilbrannan sound, and in the sound, even in its narrowest part, the stream is weak and more or less rotatory. At a position near mid-channel, 4·8 miles 101° from Davarr lighthouse, the stream is more or less rotatory clockwise. It is weakest, nearly slack, in a south-westerly direction, +0500 Greenock (-0605 Dover); strongest, 10 spring rate 0·6 knot, in a direction 000°, -0500 Greenock (-0340 Dover); weakest, nearly slack, in an easterly direction, -0030 Greenock (+0050 Dover), and strongest, spring rate 0·6 knot, in directions between 180° and 190°, +0200 and +0300 Greenock (+0320 and +0420 Dover).

15 In the narrowest part of the sound, at a position about 2 miles northward of Erins bank, the stream is more or less rotatory anti-clockwise. It is weakest, nearly slack, in a south-easterly direction, +0400 Greenock (+0520 Dover), but changes direction quickly eastward and northward and attains its greatest rate, 0·3 knot at 20 springs, in a north-easterly direction, by +0600 Greenock (-0505 Dover). The stream then changes direction gradually northward and westward without change in its rate, to about north -0330 Greenock (-0210 Dover), and about west -0130 Greenock (-0010 Dover); its rate then increases, whilst the change in direction continues, and 25 the greatest rate, 0·5 knot at springs in a south-south-westerly direction, is attained +0100 Greenock (+0220 Dover). After this time the rate decreases and the direction changes southward and eastward.

The streams run round Ru Stafnish from and to Sanda sound and probably run fairly regularly inwards and outwards along the western 30 shore of Kilbrannan sound; they probably also run fairly regularly along its eastern shore, but between Cleiteadh Mòr and Pladda there appears to be a continuous east-going stream. The streams run fairly strongly off the salient points on both sides of the sound; off Island Davarr, a rate of about 4 knots is attained at springs and there are 35 overfalls during the out-going stream; there are also overfalls off Port Crannaicb and also on Erins bank during the out-going stream; the streams run strongly in both directions round Skipness but they are weak along the coast generally and are barely perceptible in the bays.

40 **Dangers.—Light-buoys.—Beacons.**—Iron Rock ledges extend about 8 cables offshore from a position about 2 miles west-north-westward of Cleiteadh Mòr. This reef dries in places, and is marked off its south-western side by a conical light-buoy, painted black and exhibiting a white *flashing* light every six seconds. Depths of less than 36 feet 45 (11^m0) extend half a mile southward from this reef.

Imachar point, about 5½ miles north-north-westward of King's caves, bearing about 348° and just open westward of Drumadoon point, which is 6½ miles southward of Imachar point (*Lat. 55° 37' N., Long. 5° 24' W.*) (see view facing page 94), leads westward of Iron Rock 50 ledges, and Pladda lighthouse (page 66), bearing about 100° and just open southward of the southern extremity of Island of Arran, leads southward of this reef.

In thick weather, when navigating in the vicinity of Iron Rock ledges, vessels should not get into depths of less than 10 fathoms (18^m3).

Chart 2144.

For Otterard rock, about $1\frac{1}{2}$ miles northward of Island Davaar, see page 63.

Island Ross, 23 feet (7^m0) high, lies about $1\frac{1}{2}$ cables north-eastward of Kildonald point, a well-defined promontory on the eastern side of the Peninsula of Kintyre, about $3\frac{1}{2}$ miles northward of Island Davaar; there is a boat channel between Kildonald point and Island Ross.

Drumadoon point is a low rocky spur extending from the base of some columnar cliffs, and close south-eastward of it is Drumadoon bay, into which Black water flows; the bottom in Drumadoon bay is rocky and uneven, and there are several dangers in this bay; the westernmost of which, situated about one mile south-south-westward of Drumadoon point, has a depth of 37 feet (11^m3) over it. A patch, with a depth of 36 feet (11^m0) over it, lies $2\frac{1}{2}$ cables westward of Drumadoon point. Rubha nan Sgarbh is situated on the eastern side of the Peninsula of Kintyre, about $3\frac{1}{2}$ miles northward of Kildonald point; rocky ledges dry out about $1\frac{1}{2}$ cables from this point.

Crubon rock, situated on the western side of Kilbrannan sound, about $1\frac{1}{2}$ miles north-eastward of Rubha nan Sgarbh (*Lat.* $55^{\circ} 33' N.$, *Long.* $5^{\circ} 29' E.$) and about $1\frac{1}{2}$ cables from the south-eastern side of Carradale point, has a least depth of 9 feet (2^m7) over it; a can light-buoy, painted red and exhibiting a *white group flashing* light showing two flashes every twelve seconds, is moored eastward of this rock.

Iorsa patch, situated on the eastern side of Kilbrannan sound, about 2 miles south-south-eastward of Imachar point and about $1\frac{1}{2}$ cables offshore, is awash; a rock, with a depth of 30 feet (9^m1) over it, lies about 4 cables southward of Iorsa patch.

Whitefarland bank, the southern end of which lies about 8 cables westward of Imachar point, extends about $1\frac{1}{4}$ miles northward parallel with the shore, and has depths of from 14 to 19 fathoms (25^m6 to 34^m7) over it. An overfall is experienced here with the south-going stream; Erins bank, close westward of Whitefarland bank, has a least depth of 30 feet (9^m1) over it; there is a heavy overfall on Erins bank with the south-going stream.

Charts 2144, 2131.

35

Skipness point is the north-western entrance point of Kilbrannan sound; foul ground extends about $3\frac{1}{2}$ cables south-westward from its southern extremity; a can light-buoy, painted red, marked "No. 51" and exhibiting a *white group flashing* light showing two flashes every twelve seconds, is moored on the south-eastern side of this foul area. 40

There are two beacons, a tower and a flagstaff on Skipness point; there are several towers within $5\frac{1}{2}$ miles south-westward, and a pair of beacons about 8 miles south-westward, of the point.

Submarine cables.—Beacons.—Anchorage is prohibited, on account of submarine cables, in the area, the limits of which are indicated by pecked lines on the chart, situated south-westward of Skipness point. 45

Chart 2144.

A submarine cable, indicated on the chart, runs from a position about $1\frac{1}{2}$ miles south-westward of Kildonald point, to a position about half a mile south-eastward of Drumadoon point on Island of Arran; each end is marked by a beacon. See page 7.

Anchorages.—Prohibited anchorage.—Traffic signals.—

Light.—Kildonald bay, close northward of Kildonald point, on the

Chart 2144.

western side of Kilbrannan sound, affords good shelter to small vessels with local knowledge, in depths of from 4 to 5 fathoms ($7^{\text{m}3}$ to $9^{\text{m}1}$). Small quantities of provisions can be obtained here.

5 Pluck point (*Lat. $55^{\circ} 32' N.$, Long. $5^{\circ} 29' W.$*), $2\frac{1}{2}$ miles north-north-eastward of Island Ross, is the northern entrance point of Saddell bay, which affords anchorage, with shelter from northerly winds, about 3 cables offshore, in depths of from 5 to 6 fathoms ($9^{\text{m}1}$ to $11^{\text{m}0}$), but vessels must be prepared for the heavy gusts which come through

10 Saddell glen, on the north-western side of the bay.

Machrie bay, about the middle of the western side of Island of Arran, affords temporary anchorage within the 10-fathom ($18^{\text{m}3}$) line, but it must be remembered that in some places this line is only about $2\frac{1}{2}$ cables offshore, and that thence the depths increase suddenly;

15 vessels should anchor as close inshore as possible.

Machrie water flows into Machrie bay, about $1\frac{1}{2}$ miles northward of Torr Righ Mòr, whence the head of the bay dries out about $1\frac{1}{2}$ cables.

Small quantities of provisions can be obtained here.

Carradale bay, close westward of Carradale point, on the western side of Kilbrannan sound, affords good anchorage about $5\frac{1}{2}$ cables west-south-westward of Carradale point and about $2\frac{1}{2}$ cables offshore, in depths of from 5 to 7 fathoms ($9^{\text{m}1}$ to $12^{\text{m}8}$); the tidal streams are hardly felt here, but there is an overfall southward of Carradale point with the south-going stream; the anchorage is sheltered from west,

25 through north, to east-south-east.

Torrisdale castle, about $1\frac{1}{4}$ miles westward of the southern extremity of Carradale point, stands on rising ground, is built of dark stone, and is surrounded by plantations; Carradale water flows into Carradale bay, at its north-western end; Carradale house, on the northern shore

30 of Carradale bay, about one mile north-westward of Carradale point, is a white building.

Small quantities of provisions can be obtained here.

Port Crannaich, about $1\frac{1}{2}$ miles northward of Carradale point, affords good anchorage to small vessels with shelter from south-westerly winds,

35 with the eastern entrance point of the anchorage in line with the south-western extremity of Island of Arran, bearing about 147° , in a depth of 7 fathoms ($12^{\text{m}8}$), mud and clay. There is an overfall off Port Crannaich, and there is an eddy at the anchorage in smooth water.

Carradale pier extends about a quarter of a cable northward from

40 the eastern entrance point of Port Crannaich.

There is a ferry between Port Crannaich and Island of Arran, and there is regular communication by sea with Glasgow.

Charts 2144, 2131.

Whitefarland bay, about $1\frac{1}{2}$ miles northward of Imachar point,

45 on the eastern side of Kilbrannan sound, affords anchorage about

$2\frac{1}{2}$ cables offshore, in depths of from 9 to 10 fathoms ($16^{\text{m}5}$ to $18^{\text{m}3}$);

this anchorage is protected from southerly winds.

Owing to underwater obstructions, anchoring and fishing are prohibited within an area, indicated by a pecked circle on the chart,

50 about $3\frac{1}{2}$ miles northward of Imachar point and one mile off the eastern shore of the sound.

Catacol bay, about 5 miles north-north-eastward of Imacbar point, affords anchorage, in depths of from 8 to 10 fathoms ($14^{\text{m}6}$ to $18^{\text{m}3}$); this anchorage is protected from southerly winds.

Charts 2159, 46, 2515, 1577, 2635, 1824a.

Charts 2144, 2131.

Skipness bay, on the north-western side of Kilbrannan sound, westward of Skipness point, affords temporary anchorage, sheltered from northerly winds, in depths of from 8 to 9 fathoms ($14^m 6$ to $16^m 5$), but vessels anchoring here must be careful to avoid the foul ground 5 extending south-westward from Skipness point.

Small quantities of provisions can be obtained.

Charts 2144, 2131, 2164.

Loch Ranza.—Light.—Anchorage.—Directions.—Loch Ranza is entered between Coillemore point, about $6\frac{1}{2}$ miles north-north-east- 10 ward of Inachar point, and Newton point about 4 cables north-eastward; it is a narrow inlet, the head of which dries out about 2 cables. This loch is frequented by fishing boats during the herring fishery season. A pier, with a depth of 13 feet ($4^m 0$) at its head, extends northward from Coillemore point (*Lat. $55^{\circ} 42' N.$, Long. $5^{\circ} 18' W.$*). 15 Special bye-laws are in force governing the use of this pier.

The following signals are displayed by semaphore arms from a signal mast on the pier for regulating the traffic.

*Signal.**Meaning.*

No. 1.



The vessel may approach the pier.

No. 2



The vessel may not approach the pier.

No. 3.



The vessel may proceed alongside although another vessel is already alongside. A green flag will also be displayed at the berth to which the vessel is to proceed or, if the vessel is to berth alongside the other vessel, from the deck of the said vessel.

No. 4.



The pier is entirely closed to traffic.

When two vessels are approaching by day from opposite directions, that vessel from which the semaphore arm is seen to the left, as in 20 signal No. 1, shall have precedence and the other vessel shall lie off until the first vessel has left the pier.

When two or more vessels are approaching, by day, from the same direction, if one is distinctly ahead of the other, signal No. 1 will be displayed and the leading vessel shall come alongside, while the others 25 shall remain at a proper distance off until the first shall have left the pier. But if it shall appear to the Pier Master that the vessels are so close together that there may be a doubt as to which is entitled to precedence, or that one has not sufficient lead to be clear of the other or others, he shall display a white flag from the end of the pier head 30

Charts 2159, 46, 2515, 1577, 2635, 1824a.

Charts 2144, 2131, 2164.

nearest to the vessels and the vessel which is nearest the shore shall come alongside, and the other or others shall remain at a proper distance off; and if he displays a red flag, the vessel which is farthest from the shore shall come alongside, the other or others remaining at a proper distance off.

At night, a *green* light indicates that the vessel may approach the pier; and a *red* light that the vessel may not approach the pier. At night, when two vessels are approaching from the same direction, 10 a *white* light will be exhibited as well as the *green* light to indicate that the vessel nearer the shore may come alongside.

A light is exhibited, at an elevation of 20 feet (6^m1), from a white post, 12 feet (3^m7) in height, on the pier-head at Loch Ranza.

Small vessels with local knowledge can obtain good anchorage in 15 the centre of the loch, off the ruins of the castle on the south-western shore, about 3½ cables east-south-eastward of the pier-head, in depths of from 5 to 8 fathoms (9^m1 to 14^m6). This anchorage is sheltered from winds from north-north-east, through east and south, to west, but northerly and north-westerly winds cause a considerable swell at the 20 anchorage; during southerly gales heavy gusts sometimes sweep down the ravine with sufficient violence to cause vessels to drag their anchors.

A vessel entering Loch Ranza should keep close to Coillemore point, as Scredha reef extends about one cable from the shore close south-eastward of Newton point.

25 Vessels from Gourock and Greenock call regularly at Loch Ranza. Small quantities of provisions can be obtained.

Life-saving.—There is a life-saving station at Loch Ranza. See page 9.

Charts 2144, 2131, 2164.

30 **BUTE SOUND AND INCHMARNOCK WATER.**—Bute sound, between the north-eastern side of Island of Arran and the south-western side of Island of Bute, is free from dangers in the fairway.

The south-western shore of Bute sound is steep-to; Garroch head (*Lat. 55° 43' N., Long. 5° 02' W.*), the southern extremity of Island 35 of Bute on the north-eastern shore of the sound, is steep-to, but it should be given a good berth to avoid the tidal race off it (see page 70); the north-eastern shore of the sound between Garroch head and Ardscalepsie point, 4½ miles north-westward, is indented by several bays.

40 Chart 1906.

Inchmarnock water, the continuation northward of Bute sound, is bounded north-westward by a line drawn from Skipness point (page 107) to Ardlamont point, a low rugged point about 5½ miles north-eastward; north-westward of this line is the entrance to Loch Fyne, 45 and eastward of Ardlamont point is the entrance to West Kyle.

Inchmarnock, an island, the southern extremity of which is situated about 1½ miles west-north-westward of Ardscalepsie point, lies on the eastern side of Inchmarnock water; it is 185 feet (56^m4) high, and is separated from the western side of Island of Bute by Inch-50 marnock sound. Inchmarnock sound is comparatively deep, and, with the exception of Shearwater rock, is free from dangers in the fairway.

Northward of Inchmarnock the eastern shore of Inchmarnock water is free from dangers.

Charts 1906, 1907, 2131.

Tidal streams.—The streams between Kilbrannan sound and Loch Fyne (page 116) run round Skipness; streams also run northward and southward between the eastern coast of Island of Arran and the coast of Island of Bute from Garroch head to Inchmarnock, but there is little or no stream in the western part of Bute sound and the eastern part of Inchmarnock water. At a position 2 miles 028° from Cock of Arran (*Lat. $55^{\circ} 43' N.$, Long. $5^{\circ} 15' W.$*), the stream is irregular and very weak; its rate does not exceed 0·1 knots at springs except between about +0110 and +0410 Greenock (+0230 and +0530 Dover), when a rate of 0·2 knots at springs may be attained in a south-south-westerly direction.

Ripples occur off Millstone point, about $2\frac{1}{4}$ miles south-eastward of Cock of Arran and it seems probable that weak streams run along the coast towards the point, from Kilbrannan sound round An Sciodan, close westward of Cock of Arran, and from the eastern coast of Island of Arran, during the period of in-going stream. Weak streams probably also run in the reverse directions during the period of out-going stream.

Charts 1907, 2131.

Banks.—Danger.—Whiting bank, about 2 miles westward of Garroch head, has depths of from 13 to 17 fathoms (23^m8 to 31^m1) over it.

Scalpsie bank, about $1\frac{1}{2}$ miles south-south-eastward of Ardscalpsie point, has depths of from 8 to 10 fathoms (14^m6 to 18^m3) over it.

Chart 1906.

Shearwater rock, situated in the southern entrance to Inchmarnock sound, about 5½ cables east-south-eastward of the southern extremity of Inchmarnock (*Lat. $55^{\circ} 47' N.$, Long. $5^{\circ} 09' W.$*), has a least depth of 8 feet (2^m1) over it, vessels can pass on either side of this rock.

Northpark, about 2½ cables from the northern extremity of Inchmarnock, bearing about 334° and just open eastward of the eastern extremity of the island, leads close eastward of this rock.

Charts 1906, 2131.

Anchorages.—Temporary anchorage can be obtained in the bays on the north-eastern shore of Bute sound; these bays, named in order from south-eastward, are Dunagoil bay, Lubas bay, Stravanian bay, and Scalpsie bay.

St. Ninian's bay, which is entered about $1\frac{1}{2}$ miles north-north-westward of Ardscalpsie point, is well sheltered by Inchmarnock; the head of the bay dries out about 3½ cables. There is a broad sandy beach.

Small quantities of provisions can be obtained here.

40

KYLES OF BUTE.—The Kyles of Bute are the channels passing round the northern part of Island of Bute, and separating it from the mainland. They are divided into West Kyle and East Kyle, the two channels meeting at the northern end of the island.

Tidal streams.—The in-going stream of the outer part of Firth of Clyde divides and runs through the channels eastward and westward of Cumbrae islands and into Bute sound along the coast from Garroch head to Inchmarnock sound; the in-going stream from off Holy island runs towards the coast of Island of Bute between Garroch head and Inchmarnock; these streams run northward through Inchmarnock sound. The out-going streams run in the reverse directions. Though there may be weak streams running northward and southward between Inchmarnock and Ardlamont point, the streams in the western part

Charts 2159, 2515, 1577, 2635, 1824a.

Charts 1906, 2131.

of Bute sound and in the eastern part of Inchmarnock water are weak and irregular.

The north-going streams in East and West Kyles meet in the vicinity of Burnt isles, but the actual place of meeting is dependent on the meteorological conditions prevailing at the time. Consequently it is not possible to predict the direction of the streams, but they may attain rates of 3 knots in either direction under extreme conditions. Both east and west-going streams cause a considerable set southward from the edge of Eilean Buidhe.

The spring rate of the streams in both directions is about 1·5 knots in Inchmarnock sound, 1 knot in West Kyle to Rubha Dubh, increasing thence to about 2 knots, in the narrows at Rubha Bàn, then decreasing round Buttock point, and increasing again to about 3 knots in the southern Burnt Isles channel, through which the greater part of the stream passes. South-eastward of Burnt isles the rate in both directions decreases rapidly and the streams are barely perceptible in the southern part of East Kyle.

Weak streams run inwards and outwards in Loch Riddon.

Chart 1906.

West Kyle.—Lights.—Beacons.—Dangers.—Light-buoys.—West Kyle, entered close eastward of Ardlamont point (page 108), leads northward to its junction with Loch Riddon and East Kyle.

A bank, with depths of less than 3 fathoms ($5^{\text{m}} 5$) over it, extends about one cable southward, south-eastward and eastward from Ardlamont point; a rocky ledge extends about one cable eastward from the point terminating in Am Brideun, which dries; a can light-buoy, painted red, marked "No. 47" and exhibiting a *white group flashing light* showing *two flashes every twelve seconds*, marks the eastern edge of this foul ground.

The ferry house on the eastern side of West Kyle, about $1\frac{1}{2}$ miles south-eastward of Auchenlochan pier, bearing 352° and open eastward of the eastern extremity of the western shore of the Kyle, leads eastward of the shoal bank extending from Ardlamont point.

Carry rock, on the western side of West Kyle, about $1\frac{1}{4}$ miles northward of Ardlamont point and about half a cable eastward of Carry point, consists of a group of large stones which dries about 12 feet ($3^{\text{m}} 7$). A can light-buoy, painted red, marked "No. 46" and exhibiting a *white group flashing light* showing *two flashes every twelve seconds*, is moored north-eastward of Carry rock.

A spit extends about one cable offshore, 8 cables southward of Auchenlochan pier (*Lat. $56^{\circ} 54' N.$, Long. $5^{\circ} 14' W.$*).

A light is occasionally exhibited, at an elevation of 4 feet ($1^{\text{m}} 2$), from the pier-head at Auchenlochan about $4\frac{1}{2}$ miles north-north-westward of Ardlamont point; and also at an elevation of 16 feet ($4^{\text{m}} 9$), from a pole, on the pier-head at Tighnabruaich, three-quarters of a mile farther north-eastward.

From Rubha Bàn, on the north-western side of West Kyle, about $1\frac{1}{2}$ miles north-eastward of Auchenlochan pier, the shore reef extends about one cable eastward; it is marked by a can light-buoy, painted red, and exhibiting a *white group flashing light* showing *two flashes every twelve seconds*. This is the narrowest part of the channel, which has here a navigable width of about $1\frac{1}{2}$ cables.

A white beacon stands at the south-eastern end of Caladh peninsula,

Chart 1906.

on the north-western side of West Kyle, about $1\frac{1}{2}$ miles north-eastward of Tighnabruaich pier.

A small white beacon stands on the north-western extremity of Eilean Dubh, an islet close eastward of Caladh peninsula. 5

Submarine cables.—Beacons.—A submarine cable crosses West Kyle close northward of Blairs ferry, about $1\frac{1}{2}$ miles northward of Carry point; also about $3\frac{1}{2}$ cables farther northward; each end of both cables is marked by a beacon.

A submarine telegraph cable is laid across West Kyle from the shore about $1\frac{1}{2}$ cables westward of Rubba Bàn (*Lat. 55° 55' N., Long. 5° 12' W.*). Both landing places are indicated by posts marked "Telegraph cable." See page 7.

Anchorages.—Etterick bay, on the western side of Island of Bute, about $2\frac{1}{4}$ miles northward of St. Ninian's point, is seldom used as an anchorage, as it is open south-westward and westward. 15

The head of the bay dries out about 2 cables, and depths of less than 3 fathoms (5 m 5) extend about 2 cables farther offshore.

There are practically no suitable anchorages off the western side of Island of Bute. 20

An Cnap, the southern entrance point of Blindman's bay, is situated about $8\frac{1}{2}$ cables northward of Ardlamont point; this bay affords anchorage to small vessels off the cottages on its southern side, where the bottom is fine white sand. Small quantities of provisions can be obtained here. 25

Small vessels can obtain good anchorage off the western shore of West Kyle, anywhere between Kames, about half a mile southward of Auchenlochan and Tighnabruaich, about $1\frac{1}{2}$ cables offshore, but these anchorages are exposed to southerly winds. Landing can be effected at Auchenlochan and Tighnabruaich piers. Local vessels call regularly at Auchenlochan and Tighnabruaich. Small quantities of provisions can be obtained at Tighnabruaich. 30

Black Farland bay, about $1\frac{1}{2}$ miles south-westward of Buttock point, the northern extremity of Island of Bute, affords good anchorage to small craft, about midway between the entrance points, in depths of from 2 to 4 fathoms (3 m 7 to 7 m 3). It is protected from southerly winds. The coast both south-westward and northward of Black Farland bay, is foul for a short distance offshore. 35

Caladh harbour.—Dangers.—Beacons.—Anchorage.—Caladh harbour, between the mainland and Eilean Dubh, affords good but constricted anchorage to small vessels, in depths of from 9 to 17 feet (2 m 7 to 5 m 2). 40

A rocky bank lies in the approach about three-quarters of a cable eastward of Eilean Dubb; on its northern and southern ends are shoal heads, with depths of 20 and 22 feet (6 m 1 and 6 m 7) over them, respectively. 45

The harbour can be entered from northward or southward, but the northern entrance is only about 70 feet (21 m 3) wide, with a depth of 7 feet (2 m 1); the southern entrance is about a quarter of a cable wide and has a depth of about 10 feet (3 m 0).

Two reefs which dry, each marked by a beacon, lie on the northern and southern sides of the northern entrance channel. 50

The western side of the southern entrance is marked by a beacon on the mainland nearly one cable westward of the south-western extremity of Eilean Dubb.

Chart 1906.

A rocky shoal, with a depth of 30 feet (9^m1) over it, lies on the western side of the approach to the southern entrance about one cable southward of the beacon just mentioned. An islet, 3 feet (0^m9) high, lies on a reef, which dries, extending nearly half a cable southward from a position about half a cable west-south-westward of the same beacon.

A reef, which dries, and foul ground, with depths of less than 36 feet (11^m0) over it, extend about half a cable southward from the southern end of Eilean Dubh; two rocks, one foot and 2 feet (0^m3 and 0^m6) high, respectively, lie on the reef.

There are four concrete landing hauls, which dry; one on either side of Eilean Dubh, and two on the mainland, situated about $1\frac{1}{2}$ cables westward and half a cable northward of the beacon on the western side of the southern entrance; only the latter can be used by power boats, and then with caution.

There is a slipway about a quarter of a cable northward of the beacon on the western side of the southern entrance; immediately northward of the slipway is a stone wharf, which dries and on which is a one-ton crane.

Charts 3527, 2131.

Rothesay sound.—Rothesay sound between the north-eastern side of Island of Bute and the mainland, is the channel leading to East Kyle and also to Loch Striven; the Sound is entered between Bogany point (page 73) and Toward point (page 73).

Toward bank, and the shoal bank between Toward bank and Toward point (*Lat. $55^{\circ} 52' N.$, Long. $4^{\circ} 59' W.$*), are described on page 73. A vessel should pass about 2 cables southward of the light-buoy marking this bank.

The north-eastern shore of the sound between Toward point and Ardyne point, $2\frac{1}{2}$ miles west-north-westward, is bordered by foul ground extending as much as $4\frac{1}{2}$ cables offshore.

Measured distance.—There is a measured distance of 3,042 feet (927^m2) between a pair of beacons on Ardmaleish point, situated about $3\frac{1}{2}$ miles north-westward of Ardyne point, and a pair of beacons southward of them. The running course is Ardbeg point (page 73) bearing 164° .

Chart 3527.

Submarine cables.—Submarine cables, the routes of which are indicated on the chart, are laid across Rothesay sound between Ardbeg and Ardyne points. The landing places of these cables are each marked by a diamond-shaped beacon, painted red with a white horizontal band, on which are the words, "Telegraph Cable" in black letters.

Submarine cables, the routes of which are indicated on the chart, extend about 9 cables southward from the vicinity of Ardbeg point and thence about $3\frac{1}{2}$ cables eastward. See page 7.

Rothesay bay.—Rothesay bay is entered between Bogany point and Ardbeg point. A bank, with depths of less than 3 fathoms (5^m5) over it extends about $1\frac{1}{2}$ cables northward and one cable eastward from Ardbeg point.

About $8\frac{1}{2}$ cables southward of Ardbeg point is a swimming bath with a conspicuous cupola. There is a groyne about $3\frac{1}{2}$ cables south-south-eastward of the swimming bath about half a cable north-westward of the groyne are the ruins of Club jetty and a short distance

Chart 3527.

farther north-westward is a jetty, the outer end of which is marked by a beacon.

Sea level.—Heavy south-westerly gales lasting two or three days, if they occur at springs, may increase the depths in Rothesay bay by 5 feet ($1^{\text{m}}5$), and a continuance of easterly winds may decrease them from one foot to $1\frac{1}{2}$ feet ($0^{\text{m}}3$ to $0^{\text{m}}5$). Generally, the depths are increased with westerly and decreased with easterly winds. See page 49.

Lights.—A light is exhibited from a mast situated on a point $1\frac{1}{2}$ miles westward of Toward point.

A light is exhibited from a mast situated on Ardbeg point.

Chart 3527, plan of Rothesay harbour..

A light is exhibited, at an elevation of 25 feet ($7^{\text{m}}6$), from a column, 26 feet ($7^{\text{m}}9$) in height, situated near the northern extremity of Albert quay.

A light is exhibited, at an elevation of 23 feet ($7^{\text{m}}0$), from a column, 27 feet ($8^{\text{m}}2$) in height, situated one on the eastern end and another on the western end of Rothesay pier (*Lat. $55^{\circ} 50' N.$, Long. $5^{\circ} 03' W.$*).

Chart 3527.

Anchorage.—Mooring buoys.—Vessels can anchor in any part of Rothesay bay, clear of the mooring buoys and submarine cables of which there are a number, but there is a bank, about 7 cables westward of Bogany point, with depths of from 8 to 10 fathoms ($14^{\text{m}}6$ to $18^{\text{m}}3$), stony bottom. The holding ground in other parts of the bay is good, that on the western side being the best.

A considerable swell sets into the bay with north-easterly winds.

Vessels anchoring in the vicinity of Ardbeg point should be careful to avoid fouling the submarine telegraph cable crossing Rothesay sound.

Chart 3527, plan of Rothesay harbour.

Rothesay harbour.—At the head of Rothesay pier is a quay, built of wood and stone, 270 yards ($246^{\text{m}}9$) in length. There are depths of from 12 to 22 feet ($3^{\text{m}}7$ to $6^{\text{m}}7$) alongside its northern side and of 10 to 12 feet ($3^{\text{m}}0$ to $3^{\text{m}}7$) inside its western arm. Within the eastern arm there are two basins, known as Inner harbour and Outer harbour, which partly dry; these basins are used by small vessels with a draught not exceeding $8\frac{1}{2}$ feet ($2^{\text{m}}5$); the entrance to Outer basin is 95 feet ($29^{\text{m}}0$) wide, and that to Inner 21 feet ($6^{\text{m}}4$) wide.

Regulation.—Beacons.—The following is an extract from the harbour bye-laws:—“The engines of steamboats arriving at the piers at Rothesay shall be slowed down 400 yards ($365^{\text{m}}8$) from the nearest point of the pier, so that they shall move slowly to their berths.”

In order to indicate clearly the point at which vessels are to slow their engines beacons have been erected, one on the south-eastern shore and one on the north-western shore of Rothesay bay, at distances of about 2 cables north-north-eastward and $2\frac{1}{2}$ cables north-westward, respectively, of the eastern and western ends of Rothesay pier; each beacon consists of a pole, painted black and white, surmounted by a red circular disc and a triangle, painted white, with a red triangle in the centre.

Communication.—There is communication by sea with Wemyss bay, Gourock, Greenock and Craigendoran.

Port facilities.—Water is laid on to Rothesay pier. Provisions are obtainable.

Chart 3527, with plan of Rothesay harbour.

There is good hospital accommodation, the Robertson-Stewart hospital admitting infectious diseases.

Rothesay.—The town of Rothesay is situated at the head of Rothesay bay, but the suburbs extend along the whole of its shores. The ruins of Rothesay castle are in the middle of the town.

The population of Rothesay (*Lat. 55° 50' N., Long. 5° 03' W.*) was 10,141 in 1951.

Chart 3527.

10 **Kames bay.—Beacons.**—Kames bay, on the western side of Rothesay sound, is entered between Ardbeg point and Undraynian point, one mile north-north-westward. It affords anchorage, in depths of from 6 to 17 fathoms (11^m0 to 31^m1), mud, but a bank, which dries from one to 8 feet (0^m3 to 2^m4), extends about 1½ cables from the head of the 15 bay; easterly gales cause a heavy swell.

This bay is frequented by yachts during the summer; there are a number of mooring buoys in the bay.

On the north-western side of the bay, about 6½ cables south-westward of Undraynian point, is a wooden pier, with a wooden post, 20 surmounted by a diamond, at its head.

On the southern shore of Kames bay, about 3½ cables west-north-westward of Ardbeg point is a conspicuous tower and about 1½ cables farther westward is a wooden pier, with a depth of 10 feet (3^m0) at its head, which extends 220 feet (67^m1) northward from the village of 25 Port Bannatyne.

Westward of the pier is a yacht-building yard, with a small slip, and on Undraynian point is a slip capable of taking a vessel of 200 tons.

There are several beacons on the southern shore of the bay.

Small quantities of provisions can be obtained here.

30 **Prohibited anchorage.**—Anchoring and fishing is prohibited in an area, the limits of which are indicated by pecked lines on the chart, on the southern side of Kames bay.

Charts 1906, 1907.

East Kyle.—Light-buoys.—Mooring buoys.—East Kyle is 35 entered between Ardmaleish point (page 112) and Strone point, 9 cables northward, and extends about 4½ miles north-westward to its junction with West Kyle and Loch Riddon.

The navigable channel is about 3 cables wide as far north-westward as Colintraive point, on the north-eastern shore, 3½ miles from the 40 south-eastern entrance; it narrows to about one cable in width abreast Colintraive point, and about half a mile farther west-north-westward it is almost blocked by Burnt isles, between which are two narrow channels.

Chart 1907.

45 A conical light-buoy, painted black, marked "No. 41" and exhibiting a white occulting light *every six seconds*, is moored on the edge of the shoal bank extending from Ardmaleish point.

There are a number of mooring buoys northward of Ardmaleish point.

50 Chart 1906, plan of Burnt isles.

A conical light-buoy, painted black, and exhibiting a white flashing light *every six seconds*, is moored about half a cable north-eastward of Rubha Bodach, a promontory on the south-western shore, abreast Colintraive point (*Lat. 55° 55' N., Long. 5° 09' W.*).

Chart 1906, plan of Burnt isles.

Tidal streams.—*See page 110.*

Islets and dangers.—**Buoyage.**—**Beacon.**—Burnt isles are a group with rocks, situated in the fairway of East Kyle at its north-western end.

The three principal islets are Eilean Mòr, 15 feet ($4^{\text{m}} 6$) high, Eilean Fraoich, 17 feet ($5^{\text{m}} 2$) high, and Eilean Buidhe, 16 feet ($4^{\text{m}} 9$) high; Eilean Mòr is situated about 4 cables eastward of Buttock point (page 111), Eilean Fraoich lies about one cable north-westward, and Eilean Buidhe about one cable northward of Eilean Mòr. 10

Wood Farm rock, about one cable south-south-eastward of the southern extremity of Eilean Mòr, has a least depth of 7 feet ($2^{\text{m}} 1$) over it, and is marked on its northern side by a black conical buoy marked "No. 43".

Bear Craig, a promontory, 4 cables east-south-eastward of Buttock point, in line with Buttock point, bearing about 290° , leads close northward of Wood Farm rock.

Beere rock, about three-quarters of a cable northward of Bear Craig, has a least depth of 9 feet ($2^{\text{m}} 7$) over it, and is marked on its south-eastern side by a black conical buoy marked "No. 44". 20

Creyke rock, about $1\frac{1}{2}$ cables east-north-eastward of Buttock point, has a least depth of 10 feet ($3^{\text{m}} 0$) over it and is marked on its western side by a red can buoy, marked "No. 45."

From the northern end of Eilean Mòr a shoal bank extends about half a cable, northward; a black conical buoy marks the eastern side 25 of this bank.

From the northern end of Eilean Fraoich a shoal bank extends about three-quarters of a cable eastward and southward, and a rock, with a depth of less than 6 feet ($1^{\text{m}} 8$) over it, lies on its north-eastern extremity.

A concrete beacon, painted in red and white chequers, stands on the foul ground close southward of Eilean Buidhe; a bank, with depths of less than 3 fathoms ($5^{\text{m}} 5$) over it, extends about three-quarters of a cable west-north-westward from the north-western side of this islet; Eilean Buidhe (*Lat. $55^{\circ} 56' N.$, Long. $5^{\circ} 10' W.$*) is connected with the 35 mainland northward by rocky ledges.

A can light-buoy, painted red, marked "No 42" and exhibiting a *red occulting light every six seconds*, is moored southward of Eilean Buidhe.

A conical light-buoy, painted black and exhibiting a *white flashing light every six seconds*, is moored about three-quarters of a cable westward of the beacon marking the foul ground extending northward from Eilean Mòr.

Submarine cables.—**Ferry.**—**Beacons.**—Several submarine cables cross East Kyle in the vicinity of Colintraive point; the north-eastern 45 landing place of the cable close eastward of the point is marked by a beacon. A ferry plies between a pier on the point and a small pier on the south-western shore, where it is marked by a beacon.

Small quantities of provisions can be obtained at Colintraive village.

Anchorage.—Vessels can obtain good anchorage about $1\frac{1}{2}$ cables 50 eastward of the southern extremity of Eilean Mòr, in depths of from 6 to 7 fathoms ($11^{\text{m}} 0$ to $12^{\text{m}} 8$), sand.

Charts 1906, 1907.

Directions.—A vessel approaching from eastward should proceed

Charts 2159, 2515, 1577, 2635, 1824a.

Charts 1906, 1907.

through East Kyle in about mid-channel until northward of the light-buoy north-north-eastward of Rubha Bodach, whence she should steer for one of the two navigable channels through Burnt isles.

5 Chart 1906, plan of Burnt isles.

The southern channel, between the north-eastern coast of Island of Bute, and the southern sides of Eilean Mòr and Eilean Fraoich, is very narrow and tortuous, and, as the tidal streams attain a rate of 3 knots at springs, extreme caution and local knowledge is necessary.

- 10 The northern channel, between the northern sides of Eilean Mòr and Eilean Fraoich, and the southern side of Eilean Buidhe, is only 50 yards (45^m7) wide between the 2-fathom (3^m7) lines, with depths of from 18 to 23 feet (5^m5 to 7^m0). The channel is straight, and a vessel can steer through it, passing between the beacon and buoys marking
15 the dangers on either side.

Chart 1907.

- Loch Striven.**—**Mooring buoys.**—Loch Striven is entered between Ardyne point (page 112) and Strone point, 2 miles north-westward. It is enclosed by hills and mountains, and is known as the weather glass-of
20 Rothesay, the gathering of clouds and mists on the shores being locally interpreted as a sign of bad weather.

The tidal streams in Loch Striven are weak.

The loch is free from dangers in the fairway, but the head of the loch dries out for about 2 cables.

- 25 The depths are mostly too great for anchoring, and the loch is but little visited on account of the violent squalls which blow from off the steep mountains bordering the shores.

- Prohibited area.**—Vessels are prohibited from anchoring in or passing through an area, the limits of which are indicated by pecked lines on the chart, situated in Loch Striven about 3 miles northward of Strone point; a number of mark buoys and mooring buoys are occasionally laid in the area.

Chart 1906.

- Loch Riddon.**—**Anchorages.**—Loch Riddon is entered between Eilean Dubh (page 111) and Rubha na Moine (*Lat. $55^{\circ} 56' N.$, Long. $5^{\circ} 11' W.$*), $4\frac{1}{2}$ cables eastward. It has a navigable width of about $2\frac{1}{2}$ cables. The head of the loch dries out about $1\frac{1}{2}$ miles.

- 35 Fearnach bagh (Fearnach bay), close north-westward of Rubha na Moine, affords temporary anchorage in moderate depths, about one cable from the shore.

There is also anchorage on the western side of the loch, about $1\frac{1}{2}$ miles northward of Eilean Dubh, in a depth of about 8 fathoms (14^m6), mud. Local vessels call at Ormidale, just southward of this anchorage.

- 45 **Measured distance.**—A measured distance of 3,044 feet (927^m8) is situated in Loch Riddon; the running courses are 161° and 341° .

Charts 2381, 2382.

- LOCH FYNE.**—Loch Fyne is entered between Skipness point (page 103) and Ardramont point, $5\frac{1}{2}$ miles north-eastward, and extends about 50 14 miles north-north-westward to the entrance of Loch Gilp, and thence about 23 miles north-eastward to the head of the loch. About $6\frac{1}{2}$ miles within the entrance to the loch, on its western side, is the entrance to East Loch Tarbert.

Charts 2381, 2382.

Loch Fyne is deep, and its shores generally steep-to and free from off-lying dangers; it is navigable throughout its entire length.

Chart 2381.

Submarine exercise area.—There is a submarine exercise area, 5 indicated on the chart, extending across the entrance to the loch southward of the latitude of Sgat Mòr, an islet, situated about $3\frac{1}{2}$ miles west-north-westward of Ardlamont point.

Charts 2381, 2382.

Tidal streams.—The description of the tidal streams in Loch Fyne 10 depends entirely on early accounts as no recent observations are available. The streams are generally weak in the loch and strongest in the northern end off the salient points where the out-going stream may attain a rate of 2 knots under flood conditions. In East Loch Tarbert, Loch Gilp, Loch Gair and Loch Shira the streams are barely 15 perceptible. In the upper part of Loch Fyne and off Inveraray the streams are very weak.

Charts 2381, 1906.

Lower Loch Fyne.—Islets and dangers.—Lights.—Between Skipness point and Mealdarroch point, the western shore of the loch is 20 almost steep-to; Eilean a Chomhraig, also known as Battle island, about $3\frac{1}{2}$ cables south-south-eastward of Mealdarroch point, is an islet lying close offshore.

Between Ardlamont point and Sgat Mòr, a bank, with depths of less than 3 fathoms (5^m5) over it, extends in places about 2 cables from the 25 north-eastern shore of Loch Fyne.

Sgat Mòr is a grass-covered islet, 34 feet (10^m4) high, and is separated from Eilean Aoidhe, a peninsula $1\frac{1}{4}$ cables northward, by a deep channel. A bank, with a depth of 5 feet (1^m5) over it, extends about half a cable from the north-western side of Sgat Mòr; from the 30 eastern side of Sgat Mòr (*Lat. 55° 51' N., Long. 5° 18' W.*) foul ground extends about $1\frac{1}{2}$ cables east-south-eastward.

A light is exhibited, at an elevation of 30 feet (9^m1), from a white circular tower on a concrete base, 28 feet (8^m5) in height, situated at the southern end of Sgat Mòr.

Rubha Mòr is a promontory on the eastern side of the loch, about $1\frac{1}{2}$ miles northward of Sgat Mòr. Eilean Buidhe, an islet 25 feet (7^m6) high lies about 4 cables westward of Rubha Mòr; this islet is bordered by foul ground extending, in places, $1\frac{1}{2}$ cables offshore. A detached shoal, with a depth of 10 feet (5^m8) over it, lies about midway between 40 Eilean Buidhe and the mainland north-eastward.

Note: The above islet should not be confused with another and smaller islet named Eilean Buidhe, situated about $1\frac{1}{2}$ miles farther northward, and which is described below.

Chart 2381.

Eilean a Bhuiic, about $5\frac{1}{2}$ cables north-north-westward of Eilean Buidhe, is 62 feet (18^m9) high, and is separated from the mainland northward by a channel half a cable wide; from its southern end foul ground extends about $1\frac{1}{2}$ cables southward. Buck rock, near the southern end of this foul ground, dries 11 feet (3^m4); a shoal, with a 50 depth of 36 feet (11^m0) over it, lies $1\frac{1}{2}$ cables southward of Buck rock. Robbers rock, about $3\frac{1}{2}$ cables north-westward of Eilean a Bhuiic and about one cable from the eastern side of the loch, dries 6 feet (1^m8).

Rubha Dubh is a promontory, 25 feet (7^m6) high, on the eastern

Chart 2381.

side of the loch, about three-quarters of a mile north-north-westward of Robbers rock; foul ground extends about $3\frac{1}{2}$ cables southward from this promontory, and there are depths of less than 30 feet ($9^{\text{m}}1$) for 5 about three-quarters of a cable farther southward. Sgeir an Eoine, near the southern end of this foul area, dries 8 feet ($2^{\text{m}}4$), and Eilean Buidhe, 7 feet ($2^{\text{m}}1$) high, lies about one cable farther northward. From the northern end of Rubha Dubh foul ground extends about 2 cables north-westward; a rocky shoal, with a depth of 40 feet ($12^{\text{m}}2$) 10 over it, lies about $2\frac{1}{2}$ cables west-north-westward of Rubha Dubh.

Sgat Mòr bearing 148° , and open south-westward of Eilean Buidhe, leads south-westward of all the dangers on the eastern side of the loch between Eilean Buidhe and Rubha Dubh.

Between Garbhaird, the northern entrance point of East Loch 15 Tarbert, and Barmore island, 191 feet ($58^{\text{m}}2$) high, about one mile north-north-westward, a shoal bank extends a short distance offshore. About one cable eastward of the middle of Barmore island is Sgeir nam Bo, a small rock which dries 9 feet ($2^{\text{m}}7$). About one cable farther northward and about half a cable from the eastern side of the island 20 (*Lat. $55^{\circ} 53' N.$, Long. $5^{\circ} 24' W.$*) is Sgeir Leathann, a rock 2 feet ($0^{\text{m}}6$) high. About $1\frac{1}{2}$ cables north-north-westward of Sgeir Leathann and about one cable from the north-eastern point of Barmore island is Sgeir Mhaola Cinn, a reef, which dries 6 feet ($1^{\text{m}}8$). About 3 cables north-north-eastward of the same point is a patch, with a depth of 25 46 feet ($14^{\text{m}}0$) over it.

Between the northern extremity of Barmore island and Rubha Mhinidhe Beag, $3\frac{1}{2}$ miles northward, the western shore of the loch is almost steep-to.

About $9\frac{1}{2}$ cables northward of Rubha Dubh and $2\frac{1}{2}$ cables from the 30 eastern shore is a shoal, with a depth of 35 feet ($10^{\text{m}}7$) over it.

A shoal, with a depth of 23 feet ($7^{\text{m}}0$) over it, is situated about $2\frac{1}{2}$ miles northward of Rubha Dubh and about $2\frac{1}{2}$ cables from the eastern shore, on the southern side of Kilfinan bay. A shoal, with a depth of 28 feet ($8^{\text{m}}5$) over it, lies about three-quarters of a mile farther north-35 ward and about $4\frac{1}{2}$ cables south-westward of Rubha Beag, the northern entrance point of Kilfinan bay.

Between Rubha Mhinidhe Beag and the entrance to Loch Gilp, about $2\frac{1}{2}$ miles northward, a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extends as much as $1\frac{1}{2}$ cables from the western side of the loch.

40 High rock, about $1\frac{1}{2}$ miles east-north-eastward of Rubha Mhinidhe Beag, has a least depth of 30 feet ($9^{\text{m}}1$) over it. Big rock, about $7\frac{1}{2}$ cables north-north-eastward of Rubha Mhinidhe Beag, has a depth of 7 feet ($2^{\text{m}}1$) over it; a shoal, with a depth of 31 feet ($9^{\text{m}}4$) over it, lies about $2\frac{3}{4}$ cables north-eastward of Big rock. McLarty rock, about 4 cables 45 northward of High rock, has a least depth of 30 feet ($9^{\text{m}}1$) over it.

The Knows, two shoals situated about one mile and $5\frac{1}{2}$ cables south-south-westward, respectively, of Liath eilean, an islet on the north-eastern side of the entrance to Loch Gilp, have depths of 28 and 17 feet ($8^{\text{m}}5$ and $5^{\text{m}}2$) over them. Beaufort rock, about $4\frac{1}{2}$ cables 50 southward of Eilean Mòr, an islet about $2\frac{1}{2}$ cables westward of Liath eilean, has a least depth of 14 feet ($4^{\text{m}}3$) over it; this rock is the shoalest head on a rocky spit extending $7\frac{1}{2}$ cables southward from Eilean Mòr (*Lat. $56^{\circ} 00' N.$, Long. $5^{\circ} 24' W.$*).

The eastern end of Duncuan island (page 121), situated on the

Chart 2381.

eastern side of Loch Gilp, about $1\frac{1}{4}$ miles north-westward of Eilean Mòr, in line with Oakfield house, situated in a wood about $1\frac{3}{4}$ miles northward of Duncuan island, bearing about 350° , leads eastward of the shoal, with a depth of 31 feet (9^m4) over it, north-eastward of Big rock, and westward of Highland rock, McLarty rock, The Knows, and Beaufort rock.

Two shoals, each with a depth of 33 feet (10^m1) over it, lie about 3 cables east-south-eastward and $3\frac{3}{4}$ cables southward of Liath eilean.

5

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Charts 2381, 2382.

Between Liath eilean and Glas eilean, an islet on the western side of the loch about $1\frac{3}{4}$ miles north-eastward, depths of less than 36 feet (11^m0) extend as much as 4 cables offshore. A rock, with a depth of less than 8 feet (1^m8) over it, lies 5 cables east-north-eastward of the northern extremity of Liath eilean and there are several shoals, with depths of from 14 to 18 feet (4^m3 to 5^m5) over them; a patch, with a depth of 13 feet (4^m0) over it, lies close north-eastward of this rock.

Otter spit, is composed of sand and gravel, and extends about $7\frac{1}{2}$ cables west-north-westward from the eastern shore of the loch south-eastward of Glas eilean; the south-western side of the spit shoals quickly, but the northern side is steep-to, and dries from 3 to 7 feet (0^m9 to 2^m1).

A light is exhibited, at an elevation of 23 feet (7^m0), from a black tank on a beacon, 20 feet (6^m1) in height, situated at the north-western end of Otter spit.

Chart 2472, plan of East Loch Tarbert.

East Loch Tarbert.—Islets and dangers.—Buoys.—Lights.—
East Loch Tarbert is entered on the western side of Loch Fyne, between Garbhaid (page 118) and Rubha Loisgte, $3\frac{1}{2}$ cables south-south-eastward. It is separated by a neck of low land, about three-quarters of a mile wide, from West Loch Tarbert (page 115).

The following objects are conspicuous:—The tower of the Established church, situated on the western side of the town at the head of the loch; the hotel with a flagstaff fronting the head of the loch; a white house near the western shore of the loch $2\frac{1}{2}$ cables northward of the hotel, and a red-roofed house, under the war memorial $1\frac{1}{2}$ cables north-north-westward of the hotel.

A light is exhibited, at an elevation of 12 feet (3^m7), from a perch, situated on the foul ground northward of Madadh Maol, on the southern side of the entrance to the inner part of East Loch Tarbert, about 5 cables west-north-westward of Rubha Loisgte.

A light is exhibited, at an elevation of 17 feet (5^m2), from a column, 11 feet (3^m4) in height, situated on the middle of the quay at Tarbert, about $2\frac{1}{2}$ cables west-south-westward of Madadh Maol light-structure.

45

Between Rubha Loisgte and Madadh Maol, the southern shore is fringed by foul ground extending half a cable offshore in places. Red rock, which dries 6 feet (1^m8), lies close offshore about one cable west-north-westward of Rubha Loisgte; about half a cable northward of Red rock is a rock, with a depth of 16 feet (4^m9) over it, about $1\frac{1}{4}$ cables northward of Rubha Loisgte is a shoal, with a depth of 40 feet (12^m2) over it.

About a quarter of a cable southward of Garbhaid (*Lat. $55^{\circ} 52' N.$, Long. $5^{\circ} 24' W.$*), is a shoal, with a depth of 11 feet (3^m4) over it, and

Chart 2472, plan of East Loch Tarbert.

depths of less than 30 feet (9^m1) extend a short distance farther south-eastward.

The bight between Garbhaird and Cnocan Sgairbh, a promontory 5 22 feet (6^m7) high, $2\frac{1}{2}$ cables west-south-westward, is foul.

From Madadh Maol foul ground extends about half a cable northward; a perch, which is situated on the north-western side of the channel, about three-quarters of a cable west-south-westward of Madadh Maol light-structure, in line with the tower of the Established 10 church, $4\frac{1}{2}$ cables west-south-westward, bearing about 239° , leads very close north-westward of the foul ground northward of Madadh Maol.

A mooring buoy, on which a light is occasionally exhibited, is situated about one cable eastward of Madadh Maol light-structure.

15 Eilean a' Choic, lying in the fairway, about 4 cables within the entrance, is 23 feet (7^m0) high, and is foul on all sides; from the western side of this islet a reef, which dries, extends one cable westward; Sgeir Bhuidhe, situated on this reef, about half a cable from the western side of Eilean a' Choic, is a rock 9 feet (2^m7) high; a black 20 perch, mentioned above, marks the foul ground off the south-eastern side of Eilean a' Choic, and another black perch marks the southern end of the reef westward of the islet; the northern side of this reef is marked by a red can buoy; the north-western extremity of the reef is marked by a red perch.

25 From Leac Bhuidhe, a promontory on the northern side of the loch, about half a cable northward of Eilean a' Choic, a spit extends about a quarter of a cable south-westward and is marked by a red conical buoy.

Anchorages.—A vessel can anchor, about 3 cables eastward of 30 Madadh Maol light-structure, in depths of from 18 to 19 fathoms (32^m9 to 34^m7), mud.

There is anchorage for small vessels, about three-quarters of a cable northward of the light column on Tarbert quay, in a depth of about 4 fathoms (7^m3), mud and shells.

35 **Quays.**—There is a pier about midway between Rubha Loisgte and Madadh Maol light-structure; it has a depth of 18 feet (5^m5) alongside and is used principally for passenger traffic.

Tarbert quay has a least depth of 6 feet (1^m8) alongside. The ruins of Tarbert castle (*Lat. $55^\circ 52' N.$, Long. $5^\circ 24' W.$*), covered with ivy, 40 are situated on a height just above this quay.

Directions.—There are two channels leading into the inner loch, one northward and one southward of Eilean a' Choic; the southern, which is the usual and deeper channel, has a least depth of 3 fathoms (5^m5) in the fairway.

45 The southern extremity of the conspicuous white house, on the western shore of the harbour, in line with the northern extremity of Eilean a' Choic, bearing 267° , leads through the outer part of the loch.

Port facilities.—There is regular communication by sea with Glasgow.

50 Small quantities of provisions can be obtained here.

Bye-laws are in force at East Loch Tarbert.

Chart 2381.

Measured distance.—Two pairs of white post beacons, privately maintained, situated on the western coast of Loch Fyne, close north-

Chart 2381.

ward of East Loch Tarhert, mark a measured distance of 3,046 feet ($928^{\text{m}}4$). The course for a vessel running this measured distance is 150° or 330° . In 1954 the rear beacon of the north-eastern pair was missing.

Caution.—Light-buoy.—Vessels are warned not to enter the area, indicated by pecked lines on the chart, about $1\frac{1}{2}$ miles northward of Barmore island.

A light-buoy, painted black, and exhibiting a *white flashing* light *every six seconds*, is moored on the eastern side of the area; vessels 10 must pass eastward of this light-buoy.

Charts 2472, plan of *Loch Gilp*, 2381.

Loch Gilp.—Loch Gilp is entered on the western side of Loch Fyne, close westward of Eilean Mòr; the head of the loch dries out about 9 cables.

Tidal streams.—The streams are scarcely perceptible in Loch Gilp.

Chart 2381.

Dangers.—Buoyage.—Beacon.—Big, High, McLarty, and Beaufort rocks, and The Knows, lying in the southern approach to Loch Gilp, are described on page 118.

A rock, with a depth of less than 6 feet ($1^{\text{m}}8$) over it, and a detached shoal, with a depth of 12 feet ($3^{\text{m}}7$) lie, respectively, about $9\frac{1}{2}$ and $6\frac{1}{2}$ cables south-south-eastward of Ardrishaig lighthouse (page 122); Gulnare rock, with a least depth of 4 feet ($1^{\text{m}}2$) over it, lies close westward of the 12-foot ($3^{\text{m}}7$) shoal.

A spherical buoy, painted black and white in horizontal bands, is moored on the northern edge of the 12-foot ($3^{\text{m}}7$) shoal. A can light-buoy, painted red, marked "No. 48" and exhibiting a *white group flashing* light showing *two flashes every twelve seconds*, is moored on the eastern edge of Gulnare rock.

Chart 2472, plan of *Loch Gilp*.

Sgeir Sgalag, about $4\frac{1}{2}$ cables south-south-eastward of Ardrishaig lighthouse, has a least depth of 3 feet ($0^{\text{m}}9$) over it, and is marked both on its south-western and western side by black conical buoys, Nos. 50 and 49, respectively; this shoal is covered by the *red sector* of Ardrishaig light, between the bearings of 287° and 340° .

For lights at Ardrishaig, see page 122.

A shoal, with a depth of 18 feet ($5^{\text{m}}5$) over it, lies close westward of the western extremity of Sgeir Sgalag; it lies in the *white* sector of Ardrishaig light between the bearings of 310° and 345° . Close westward of this shoal are two patches, with depths of 16 and 18 feet ($4^{\text{m}}9$ and $5^{\text{m}}5$) over them, which are covered by the *green sector* of Ardrishaig light between the bearings of 345° and 035° . A patch, with a depth of 17 feet ($5^{\text{m}}2$) over it, and a patch, with a depth of 18 feet ($5^{\text{m}}5$) over it, lie, respectively, about three-quarters of a cable and one cable west-north-westward of the northern end of Sgeir Sgalag, and are covered by the *red sector* of Ardrishaig light between the bearings of 287° and 340° .

A bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, the inner part of which dries 5 feet ($1^{\text{m}}5$), extends about $3\frac{1}{2}$ cables south-westward and $2\frac{1}{2}$ cables westward from Rubha Buidhe (*Lat. $56^{\circ} 01' N.$, Long. $5^{\circ} 26' W.$*), situated on the eastern shore of the loch about 5 cables eastward of Ardrishaig light-tower. Duncuan island, with a group of bare rocks, a few feet high, lie on this bank about $1\frac{1}{2}$ cables west-south-westward of Rubha Buidhe. From the south-western end of these rocks

Chart 2472, plan of Loch Gilp.

foul ground extends about one cable south-south-westward, and on its outer end is a rock, which dries 10 feet ($3^m 0$), marked by an iron perch; this foul ground is covered by the red sector of Ardrishaig light between 5 the bearings of 287° and 340° .

Three patches, each with a depth of 18 feet ($5^m 5$) over it, lie about $1\frac{1}{4}$, $1\frac{1}{2}$, and 3 cables north-north-westward, respectively, of the north-eastern end of Duncuan island. Ardrishaig light is obscured over these shoals.

10 Anchorage.—Small vessels can obtain good anchorage about $2\frac{1}{2}$ cables east-north-eastward of Ardrishaig lighthouse, in depths of from $3\frac{1}{2}$ to 4 fathoms ($6^m 4$ to $7^m 3$). Duncuan island shelters this anchorage from southerly winds.

Charts 2472, plan of Loch Gilp, 2381.

15 Directions.—A vessel approaching from southward should steer with Oakfield house, situated in a wood at the head of Loch Gilp, in line with the eastern extremity of Duncuan island, bearing 350° , which leads between Big rock on the west and High rock and McLarty rock on the east, but only three-quarters of a cable eastward of the shoal 20 with a depth of 31 feet ($9^m 4$) over it, situated $2\frac{1}{2}$ cables north-eastward of Big rock.

When Ardrishaig light-tower bears 340° the vessel should steer for it on that bearing, which leads about three-quarters of a cable eastward of the rock with a depth of less than 6 feet ($1^m 8$) over it, situated about 25 one mile south-south-eastward of Ardrishaig light-tower; thence she should steer to pass eastward of the black and white spherical buoy marking the northern side of the shoal with a depth of 12 feet ($3^m 7$) over it, situated $6\frac{1}{2}$ cables south-south-eastward of Ardrishaig light-tower, and westward of the two black conical buoys marking Sgeir 30 Sgalag. (*Lat. $56^\circ 00' N.$, Long. $5^\circ 26' W.$*).

At night, only vessels with local knowledge should approach the entrance to the loch.

Chart 2472, plan of Loch Gilp.

A light is exhibited, at an elevation of 30 feet ($9^m 1$), from a white 35 tower with a red horizontal band, 19 feet ($5^m 8$) in height, situated on the head of Ardrishaig breakwater.

A light is exhibited, at an elevation of 17 feet ($5^m 2$), from the head of the pier half a cable north-westward of the head of Ardrishaig breakwater.

40 Ardrishaig.—Ardrishaig village is situated on the western side of Loch Gilp, about half-way up the loch. There are many villas along the shore, southward of the village.

There is regular communication by sea with Glasgow during the summer months, and with Gourock and Greenock during the winter.

45 Small quantities of provisions can be obtained.

Lochgilphead.—Lochgilphead village, situated at the head of Loch Gilp, had a population in 1951 of 1,229.

The quay, situated on the eastern shore of the loch, about $1\frac{1}{2}$ miles north-north-eastward of Ardrishaig lighthouse, has a depth of about 50 5 feet ($1^m 5$) alongside at high water springs.

Chart 2381.

Anchorages in Lower Loch Fyne.—**Beacons.**—**Mooring buoy.**—Between Skipness point and the entrance to East Loch Tarbert (page 119) the western shore of Loch Fyne affords no anchorage.

Chart 2381.

Between Ardlamont point (*Lat. 55° 50' N., Long. 5° 13' W.*) and Sgat Mòr lighthouse, the north-eastern shore of Loch Fyne is indented by Ardlamont, Kilbride, and Asgog bays, which afford good temporary anchorage to small vessels during northerly or easterly winds. The heads of Kilbride and Asgog bays dry out about $2\frac{1}{4}$ and $1\frac{1}{4}$ cables, respectively. 5

Four small stone heacons stand on the land between Kilbride and Asgog bays, about 12 cables eastward, $9\frac{1}{2}$ cables east-north-eastward and 11 cables north-eastward of Sgat Mòr lighthouse. 10

Between Rubha Stillraig, a promontory, $6\frac{1}{2}$ cables north-north-westward of Sgat Mòr lighthouse and Rubha Preasach, 2 miles farther north-north-westward, there are several bights on the eastern shore of the loch affording temporary anchorage to small vessels.

South and North bays, southward and northward of Barmore island, 15 on the western side of Loch Fyne, afford temporary anchorage to small vessels, but the head of South bay dries out about $1\frac{3}{4}$ cables.

There are no anchorages on the western shore of Loch Fyne, between Barmore island and Loch Gilp. 20

There is a mooring buoy about 2 cables east-north-eastward of Ard nan Ròn which is situated about 9 cables north-north-westward of Barmore island.

Between Rubha Dubh and Otter spit the eastern shore of the loch is indented, and affords temporary anchorage with offshore winds. 25
Charts 2381, 2382.

Port Ann, on the north-western side of the loch, affords good anchorage to small vessels about 7 cables north-north-westward of the light-structure marking the north-western extremity of Otter spit (page 119), in depths of from 7 to 8 fathoms (12^m8 to 14^m6), out of the tidal streams. The head of Port Ann dries out about $1\frac{1}{2}$ cables. 30

Glas eilean lies about $1\frac{1}{2}$ cables southward of the eastern entrance point of Port Ann; there is a narrow channel, about a quarter of a cable in width between the 2-fathom (3^m7) lines, with a least depth of 27 feet (8^m2) in the fairway, northward of this islet. 35

A ferry plies between a pier situated in Otter bay, about one mile eastward of Otter Spit light-structure, and a quay at West Otter, about $5\frac{1}{2}$ cables north-north-eastward of Glas eilean.

Small vessels can obtain good anchorage about one cable north-north-westward of the ferry pier in Otter bay, in depths of from 5 to 6 fathoms (9^m1 to 11^m0). 40

UPPER LOCH FYNE.—Islets and dangers.—Lights.—Beacon.—Carraig geur, which dries 5 feet (1^m5), lies 5 cables north-north-eastward of West Otter and about $1\frac{1}{2}$ cables off the western shore of the loch. 45

Between Glas eilean (*Lat. 56° 01' N., Long. 5° 21' W.*) and Minard narrows, 6 miles north-eastward, there are no dangers in the fairway, and the shore bank does not extend beyond $1\frac{1}{2}$ cables from either side of the loch.

Chart 2382.

Minard narrows are formed by two islets and some rocks situated in the fairway of the loch. Eilean Aoghainn, the larger of the two islets, is 59 feet (18^m0) high, and from its northern end foul ground extends

Chart 2382.

about $2\frac{1}{2}$ cables north-north-eastward; North rock, situated in this foul area, about 2 cables north-north-eastward of Eilean Aoghainn, has a depth of 6 feet (1^m8) over it. Fraoch eilean, the smaller islet, is 5 situated close south-westward of Eilean Aoghainn. An Oitir (Otter rock), a small rock, 4 feet (1^m2) high, lies about $1\frac{1}{2}$ cables west-north-westward of Eilean Aoghainn; this rock is situated on a bank of gravel, which extends about $1\frac{1}{2}$ cables north-westward and one cable northward from the rock; a black beacon, surmounted by a spherical cage, marks 10 the north-western end of this bank. These dangers are covered by the red sector of Sgeir an Eirionnaich light between the bearings of 044° and 087° .

A light is exhibited, at an elevation of 22 feet (6^m7), from an iron framework beacon, painted black and white in vertical stripes and 15 24 feet (7^m3) in height, situated on Sgeir an Eirionnaich, also known as Paddy rock, situated about $5\frac{1}{2}$ cables north-eastward of Eilean Aoghainn.

Gortan point, about $3\frac{1}{2}$ miles south-westward of Eilean Aoghainn, bearing about 210° , and open south-eastward of Eilean Aoghainn, leads close eastward of North rock.

20 Sgeir an Eirionnaich is about 15 feet (4^m6) high. Shoals extend about $1\frac{1}{2}$ cables southward from it.

Big shoal, about 6 cables north-north-eastward of Sgeir an Eirionnaich light-beacon and about $2\frac{1}{2}$ cables from the south-eastern shore of the loch, has a least depth of 17 feet (5^m2) over it, and is covered by 25 the red sector of Sgeir an Eirionnaich light, between the bearings of 192° and 210° .

An Oitir beacon in line with Minard castle, 6 cables south-westward, bearing about 223° , leads north-westward of Big shoal.

North-eastward of Big shoal there are no dangers in the fairway, 30 and the shore banks extend only a short distance.

The quarry situated about $2\frac{1}{2}$ miles north-north-eastward of Minard castle, and Furnace quarry, about 2 miles farther north-eastward, are conspicuous.

A jetty, named Tigh-nan-darroch, is situated on the eastern side of 35 the loch, about $1\frac{1}{2}$ miles south-eastward of Inveraray church.

Sgeir Bruachaig, situated on the north-western side of the loch, about one mile south-westward of Inveraray pier (page 125) and about $1\frac{1}{2}$ cables offshore, dries 4 feet (1^m2). An Oitir, 5 cables southward of Inveraray pier, extends about 2 cables offshore, abreast the southern 40 end of Inveraray; the eastern extremity of the bridge, $1\frac{1}{2}$ cables south-eastward of Inveraray castle, bearing about 000° and just open eastward of Inveraray pier, leads eastward of this spit.

Anchorages in Upper Loch Fyne.—Kames bay, on the north-western side of the loch, affords good anchorage to vessels about 2 45 miles north-north-eastward of Glas eilean, in a depth of 8 fathoms (14^m6), sand and gravel, out of the tidal streams. The head of the bay dries out one cable.

Loch Gair, a small landlocked basin on the north-western side of Loch Fyne, affords good anchorage to small vessels about $2\frac{1}{2}$ miles 50 north-north-eastward of Glas eilean (*Lat. $56^\circ 01' N.$, Long. $5^\circ 21' W.$*), in depths of from 2 to 3 fathoms (3^m7 to 5^m5).

On the south-western entrance point of Loch Gair is a conspicuous square tower. The channel into this basin is contracted to about half a cable in width by shoal banks, which extend as much as $1\frac{1}{2}$ cables

Chart 2382.

from both sides of the basin; the head of the basin dries out about the same distance.

Small quantities of provisions can be obtained at Loch Gair.

Inveraray, on the north-western side of the loch, about $5\frac{1}{2}$ miles from the head of the loch, affords anchorage about $2\frac{1}{2}$ cables east-north-eastward of Inveraray pier and about $2\frac{1}{2}$ cables offshore; the water here is rather deep, and south-westerly winds cause a disturbed sea.

A vessel approaching this anchorage from southward should be careful to avoid An Oitir (page 124). 10

There are depths of 7 feet ($2^{\text{m}}1$) alongside Inveraray pier.

Between Strone point, the eastern entrance point of Loch Shira, and the head of Loch Fyne, it is deep to within about 4 cables of the head of the loch, and there is no suitable anchorage, except abreast Ardkinglas house, a conspicuous object on the south-eastern side of the loch $1\frac{1}{2}$ miles from its head. 15

Submarine cable.—Beacons.—A submarine cable, the direction of which is indicated on the chart, crosses the loch from Creaggan, about $3\frac{1}{2}$ miles south-south-westward of Inveraray; a beacon marks each landing place. *See page 7.* 20

Charts 2381, 2382.

Directions.—A vessel should steer for Ardrishaig light, bearing 340° , which leads through the loch, clear of all dangers, to abreast Kilfinan bay. A vessel bound northward through Upper Loch Fyne should then steer for the Narrows, between Otter spit and the north-western shore. Care should be taken to avoid the rock, with a depth of less than 6 feet ($1^{\text{m}}8$) over it, about 8 cables south-westward of Otter Spit light-structure. 25

Chart 2382.

A vessel can pass on either side of Sgeir an Eirionnaich, but if passing south-eastward of it care should be taken to avoid the shoal bank extending southward from it. 30

There is also a channel westward of An Oitir beacon; this channel is about one cable wide, with a least depth of 11 fathoms ($20^{\text{m}}1$) in the fairway. 35

The shores of Minard bay, on the north-western side of the loch, abreast Fraoch eilean (*Lat. $56^\circ 06' N.$, Long. $5^\circ 15' W.$*), are wooded.

The north-western shore of the loch above Minard bay, is covered with oak woods varied by clumps of firs, but the south-eastern side has occasional plantations only. 40

There are no further dangers in the fairway of Upper Loch Fyne above Minard narrows. 45

Inveraray.—Lights.—Shoal.—Mooring buoy.—The town of Inveraray stands on the western entrance point of Loch Shira.

Two lights are periodically exhibited, at elevations of 14 feet ($4^{\text{m}}3$), from posts 10 feet ($3^{\text{m}}0$) in height, situated on Inveraray stone pier, about 9 miles northward of Sgeir an Eirionnaich light-beacon. Two lights are exhibited one from each end of the wooden extension of the stone pier. 50

A shoal, with a depth of 18 feet ($5^{\text{m}}5$) over it, lies about three-quarters of a cable eastward of the head of the pier.

Inveraray castle, about $3\frac{3}{4}$ cables northward of the town, is surrounded by dark woods. About $5\frac{1}{2}$ cables north-north-eastward of the castle the peak of Dun na Cuaiche, surmounted by a tower, rises

Chart 2382.

abruptly to an elevation of 808 feet (246^m3); Dun Corr-bhile, about 3 cables farther north-north-eastward, attains an elevation of 1,038 feet (316^m4).

- 5 A mooring buoy is situated about 2 cables east-north-eastward of the head of the pier.

The population of the town in 1951 was 503.

There is frequent communication by sea with Glasgow. The nearest railway station is at Dalmally, 16 miles north-north-eastward.

- 10 A motor ferry plies across the loch between Inveraray and St. Catherine's on the opposite shore.

Small quantities of provisions can be supplied, and water can be obtained from a hydrant on the pier.

Charts 2472, plans of Loch Gilp and Loch Crinan, 2159.

- 15 CRINAN CANAL.—**Lights.**—Crinan canal extends from Ardrishaig to Loch Crinan, about 9 miles north-westward. It enables small vessels to avoid the heavy seas so frequently encountered off Mull of Kintyre; and the saving in distance by vessels bound northward from the Clyde is about 85 miles. The passage through the canal takes about 20 hours.

Chart 2472, plans of Loch Gilp and Loch Crinan.

- The entrance lock at Ardrishaig admits vessels at any state of the tide. Vessels of 100 feet (30^m5) in length, 23 feet (7^m0) in beam, and drawing 10½ feet (3^m2) can be admitted to the canal basin, but vessels 25 passing through the canal must not exceed 88 feet (26^m8) in length, 20 feet (6^m1) in beam, and a draught of 9½ feet (2^m9).

The entrance lock at Crinan is the same size as that at Ardrishaig.

- There are fifteen locks on the canal with a total rise of 64 feet (19^m5); thirteen of these locks are 96 feet (29^m3) long and 24 feet (7^m3) wide, 30 with a depth of 10 feet (3^m0) on the sill, but the entrance locks are 105 feet (32^m0) long and 27 feet (8^m2) wide, with a depth of 12½ feet (3^m8) on the sill.

The entrance lock at Ardrishaig is protected by a breakwater extending about one cable from the shore.

- 35 A light is exhibited, at an elevation of 17 feet (5^m2), from each side of the entrance lock.

A light is exhibited, at an elevation of 21 feet (6^m4), from a position westward of the lock on the projection of its centre line.

Chart 2472, plan of Loch Crinan.

- 40 A light is exhibited, at an elevation of 26 feet (7^m9), from a white tower with a red band, 21 feet (6^m4) in height, situated close eastward of the entrance lock at Crinan. (*Lat. 56° 05' N., Long. 5° 33' W.*).

- Two lights, disposed vertically, are exhibited, at elevations of 14 and 17 feet (4^m3 and 5^m2), from a post, situated on the eastern wing of the 45 entrance lock at Crinan; the lower light shows *red* when the lock gates are closed and *green* when open.

A light is exhibited, at an elevation of 17 feet (5^m2), from a post, situated on the western wing of the entrance lock at Crinan.

- Leading lights are exhibited at Crinan when vessels are going to 50 enter the canal entrance lock; the front light, at an elevation of 12 feet (3^m7), from the canal lock gate; and the rear light, at an elevation of 22 feet (6^m7), from a mast, 13 feet (4^m0) in height, situated about a quarter of a cable southward of the front light-structure. These lights

Chart 2472, plan of Loch Crinan.

in line, bearing 186° , lead through the entrance lock into the canal basin.

Chart 2472, plan of Loch Gilp.

Directions.—A vessel waiting to enter the Crinan canal at Ardrishaig (*Lat. $56^{\circ} 01' N.$, Long. $5^{\circ} 26' W.$*) should either anchor outside the harbour, or lie alongside the pier, where there were, in 1942, depths of 12 feet ($3^{\text{m}} 7$). 5

Charts 2381, 2326, 2515, 1577, 2635, 1824a.

CHAPTER III

MULL OF KINTYRE TO SEIL SOUND

Chart 2515.

TIDAL STREAMS.—Mull of Kintyre and Orsay to Firth of Lorne.—In this section descriptions are given of the streams off the south-western coast of Islay (*Lat. 55° 40' N., 6° 20' W.*), and in the waters between Peninsula of Kintyre and the mainland on the one side, and Islay, Jura, Scarba, Lunga, Luing and Seil on the other, and in the channels between the islands. The descriptions of the streams in the Sound of Islay, West Loch Tarbert, Loch Caolisport, MacCormaig isles and Loch Sween, Loch Craignish, Dorus Mòr, Loch Shuna and Shuna sound, and Cuan, Seil and Clachan sounds are from recent observations and data ; the times at which the streams begin in the area between Craignish point and the mainland on the one side, and Scarba, Luing and Sbuna on the other, are also from recent observations, but all other descriptions and information are from earlier data and accounts.

The reliability of the early accounts of the streams is rather doubtful and their accuracy difficult to assess. Thus, in Dorus Mòr the original (about 1850) account refers the streams to local high water and low water, and gives, in the form now used : west-going stream begins +0425 Oban (-0105 Dover), east-going stream begins -0155 Oban (+0500 Dover); spring rate in both directions from 6 to 8 knots. The recent (1936) account refers the streams to local high water and gives, in the form now used : west-going stream begins +0330 Oban (-0200 Dover), east-going stream begins -0215 Oban (+0440 Dover); the spring rate is from 4 to 5 knots. In this case the earlier and recent accounts differ by from half an hour to one hour in time and the rate given in the earlier account is much the greater ; it must not, however, be supposed that differences of this magnitude always occur, and, as there are eddies in the channel, it is not impossible that the earlier account is correct for one part and the recent account for another part ; experience, in fact, shows that the earlier accounts are usually reliable for the times at which the streams begin but the rates given are usually too great. Under these circumstances it is considered that, though information recently obtained is always to be preferred (and is always given in preference to that obtained from the earlier accounts), the earlier accounts can usually be relied upon within fairly narrow limits though the rates given may be too great.

The streams in all the channels between the islands, from Sound of Islay to Clachan sound, depend on the relation between sea level outside the islands and the level between the islands and the mainland; for instance, in the Gulf of Corryvreckan, though observations have not been obtained, the spring range of the tide is about 5 feet ($1^m 5$) at its eastern end and about 11 feet ($3^m 4$) at its western end,

Chart 2515.

and high water is about half an hour earlier at its eastern end than at its western end. Computations from these data show that the stream should be slack about 2 hours before low water and high water at the eastern end, that the west-going stream should be strongest about one hour after low water, and the east-going stream should be strongest about one hour after high water ; these times are in fairly good agreement with those obtained by observation. Similar conditions exist in all the other channels, but whereas in the Gulf of Corryvreckan (*Lat. 56° 09' N., Long. 5° 43' W.*) the higher and lower levels, which 10 differ by more than 3 feet (0^m9) at springs, are only about one mile apart, in the other channels (except Bealach a Choin Ghais, between Scarba and Luing, sometimes called Little Corryvreckan gulf) the distance between them is much greater. In consequence the streams are much stronger in the Gulf of Corryvreckan, with rates of up to 15 almost 8½ knots at springs, though no accurate measurements have been obtained, than in the other channels. There is also very violent turbulence, especially with strong westerly winds during the west-going stream, and eddies form on both sides of the main stream.

Charts 3116, 2515.

20

Southern entrance to Sound of Jura, with the south-western and south-eastern coasts of Islay.—The streams are appreciably affected by the fact that the north-west-going stream in the approach to North channel, and the north-going streams in the Sounds of Jura and Islay, run nearly simultaneously ; similarly, the south-east-going stream in the approach to North channel, and the south-going streams in the Sounds of Islay and Jura, run nearly simultaneously. Consequently, the north-west-going North Channel stream spreads out northward into the Sounds of Jura and Islay ; but the south-east-going North Channel stream, though it runs round Rubha nan Leacan 30 and along the south-eastern coast of Islay to about Texa island, and eastward to and past Otter rock, turns south-eastward and runs towards Mull of Kintyre when it meets the south-going streams from the Sounds of Islay and Jura. Thus, off the south-eastern coast of Islay, during the north-west-going stream the stream runs about 35 west-south-westward along the coast from about Texa island to Rubha nan Leacan, and north-eastward along the coast from about Texa island to Ardmore point ; but during the south-east-going stream the stream runs east-north-eastward along the coast from Rubha nan Leacan to about Texa island, and south-westward along the coast 40 from Ardmore point to about Texa island where these streams meet and run south-eastward towards Mull of Kintyre. Off the western coast of Peninsula of Kintyre, between Mull and Glenacardoch point the streams begin nearly simultaneously along the whole length of the coast.

45

Along the coast at and close northward of Mull of Kintyre the north-going stream begins +0400 Oban (-0130 Dover), the south-going stream begins -0225 Oban (+0430 Dover) ; spring rate in both directions about 5 knots ; these streams are local, and in North channel, south-westward of Mull of Kintyre, the north-west-going 50 stream begins +0530 Oban (H.W. Dover), the south-east-going stream begins -0055 Oban (+0600 Dover).

Off the south-western coast of Islay, off Orsay and the southern coast of The Oa, the north-west-going stream begins +0530 Oban (H.W.

Charts 1577, 2635, 1824a.

Charts 3116, 2515.

Dover), the south-east-going stream begins -0040 Oban (-0610 Dover); these streams run very strongly, about 8 knots at springs off Orsay, where there is a very heavy race, and from 4 to 5 knots at springs off The Oa where there are overfalls off Mull of Oa (*Lat. 55° 35' N., Long. 6° 20' W.*) during the south-east-going stream, and off Rubha nan Leacan during the north-west-going streams. The streams become progressively weaker farther from the coast. Off the south-eastern coast of Islay the streams begin to run from about 10 Texa island towards Rubha nan Leacan and Ardmore point about +0530 Oban (H.W. Dover), and begin to run from Rubha nan Leacan and Ardmore point towards Texa island about -0030 Oban (-0600 Dover); these streams are of no great strength. At Otter rock the west-going stream begins +0530 Oban (H.W. Dover), the east-going 15 stream begins -0030 Oban (-0600 Dover); the spring rate in each direction is about 3 knots.

From off Mull of Oa the north-west-going stream runs in a north-north-westerly direction to about the middle of Loch Indaal and thence westward towards Orsay; similarly, from off Orsay the south-20 east-going stream runs in an easterly direction to about the middle of the loch, and thence in a south-south-easterly direction towards Mull of Oa; the spring rate in each direction is in the middle of the loch about 3 knots. The streams become weaker off Laggan point and are imperceptible towards the land of Loch Indaal. There are probably 25 eddies, in which the streams run nearly continuously outwards, along parts of the south-eastern side of The Rhinns of Islay and the western side of The Oa.

Information regarding the streams in the middle parts of the southern entrance to the Sound of Jura is not available; it may, however, 30 be inferred from the statements above that the north-west-going stream, which begins about +0530 Oban (H.W. Dover), is rather irregular in direction and runs between about north-westward and northward on the Mull of Kintyre side and in mid-channel, and between about west and north on the Otter Rock side; the south-east-going 35 stream, which begins about -0055 Oban (+0600 Dover), is probably more regular in its direction and runs about south-south-eastward on the Mull of Kintyre side, south-eastward in mid-channel, and east-south-eastward on the Otter Rock side. The spring rate is probably about 2 knots in mid-channel increasing nearer the sides, but especially 40 on the Mull of Kintyre side.

SOUTHERN AND WESTERN SIDES OF ISLAY.—Islay, the southern extremity of which, Rubha nan Leacan (*Lat. 55° 35' N., Long. 6° 16' W.*), is situated about $23\frac{1}{2}$ miles north-westward of Mull of Kintyre (page 59), is undulating, and a marked contrast with the 45 sharp pyramidal mountains of Jura. The highest peak in Islay, Beinn Bheigeir, 11 miles north-north-eastward of Rubha nan Leacan, attains an elevation of 1,606 feet (489^m5), but the ridges of the coast hills are generally of moderate height.

Loch Indaal, in the south-western coast, is separated from Loch 50 Gruinart, in the north-western coast, by an isthmus about $2\frac{1}{2}$ miles wide.

The north-western coast of Islay is rocky, affords no shelter, and should not be approached, except during fine weather.

Chart 3116.

Southern coast of Islay.—The southern coast of Islay from Ardmore point, the steep-to south-eastern extremity of the island, to Port Ellen, about 7 miles south-westward, the coast is fronted by islets and rocks extending in places $1\frac{1}{2}$ miles offshore. 5

Islets and dangers.—**Light.**—**Light float.**—**Fog signal.**—Ardmore islands, situated within $2\frac{1}{2}$ miles southward and south-south-westward of Ardmore point, are a group of islets and above-water and sunken rocks. Eilean a' Chùirn, the easternmost of this group lies about one mile southward of Ardmore point. 10

A light is exhibited, at an elevation of 84 feet (25^m6) from a white beacon, 35 feet (10^m7) in height, on the eastern part of Eilean a' Chùirn.

Eilean Bhride lies about $6\frac{1}{2}$ cables south-westward of Eilean a' Chùirn and from it foul ground extends about $6\frac{1}{2}$ cables south-westward. From Ard Imersay, a promontory $1\frac{1}{2}$ miles west-south-westward of the southern end of Eilean Bhride, foul ground extends about $1\frac{1}{2}$ miles southward, and several shoals, with depths of from 17 to 33 feet (5^m2 to 10^m1) over them, lie within $1\frac{1}{2}$ miles eastward of the promontory. Iomallach rock, situated in this foul area, about one mile southward of Ard Imersay, is 8 feet (2^m4) high; Ruadhl Mòr, at the southern end of this foul area, has a least depth of $1\frac{1}{4}$ fathoms (2^m3) over it. 15

Texa island, about $1\frac{1}{2}$ miles westward of Iomallach rock, and 4 cables offshore, is 164 feet (50^m0) high at its eastern end; a small white concrete beacon stands on its summit. From the south-western end of Texa island some above-water and sunken rocks extend about 7 cables southward; Tàrr sgeir (*Lat. $55^{\circ} 36' N.$, $6^{\circ} 09' W.$*), the southermost, is 15 feet (4^m6) high. The foul ground southward of Texa island is covered by the red sector of Port Ellen light between the bearings of 248° and 301° . 20

Otter rock, about $2\frac{1}{2}$ miles southward of the southern extremity of Texa island, has a least depth of 14 feet (4^m3) over it. During strong winds, and specially with an opposing tidal stream, the sea occasionally breaks heavily on this rock. (*See* view facing page 132.) Otter rock is covered by the white sector of Port Ellen light, between the bearings of 301° and 340° . 35

A light float, painted red with *Otter Rock* on her sides in white letters is moored about 5 cables south-south-westward of Otter rock. A light is exhibited, at an elevation of 27 feet (8^m2), from a red super-structure and a fog bell sounds. 40

Iomallach rock in line with Eilean a' Chùirn, bearing about 037° , leads north-westward of Otter rock, and the summit of Beinn Sholum, 1,136 feet (346^m3) high, 3 miles northward of the northern extremity of Texa island, bearing about 352° and well open eastward of Texa island, leads eastward of it. 45

A bank, with a least depth of 27 feet (8^m2) over it, lies about $2\frac{1}{4}$ miles north-eastward of Otter rock, and a patch, with a depth of 41 feet (12^m5) over it, lies about 6 cables west-south-westward of this bank. A shoal, with a least depth of 40 feet (12^m2) over it, lies about $50\frac{1}{2}$ miles north-westward of Otter rock. 50

Ardmore point, bearing about 354° and open eastward of the eastern extremity of Eilean a' Chùirn, leads eastward of all the dangers lying off the southern coast of Islay.

Chart 3116.

Submarine cables.—**Beacon.**—Submarine cables, the directions of which are indicated on the charts, are laid between a point on Islay northward of Texa island and a point on the western side of Peninsula of Kintyre; see page 7. A beacon marks the landing place of the cables.

Chart 2037, plan of Port Ellen.

Port Ellen.—**Light.**—**Dangers.**—**Beacon.**—Port Ellen, on the southern coast of Islay, is entered between Carraig Fhada (*Lat. 55° 37' 10 N., Long. 6° 13' W.*), and Rubha a' Chuinnlein, about three-quarters of a mile east-north-eastward. The entrance channel, however, is considerably narrowed by the off-lying dangers which are described below; there is a least depth of 13 feet (4 m 0) in the middle of the fairway. Sheep island, 15 feet (4 m 6) high, lies about 2 $\frac{1}{2}$ cables south-15 south-eastward of Ruhha a' Chuinnlein, with numerous rocks between.

The following objects are conspicuous and easily identified:—Ten radio masts, 338 feet (103 m 0) high, standing close together about 6 $\frac{1}{2}$ cables north-westward of Carraig Fhada lighthouse, and a white house with a grey roof, about the same distance east-north-eastward 20 of the radio masts; another white house with a red roof, 3 $\frac{1}{2}$ cables eastward of the latter, and a distillery about three-quarters of a cable farther eastward.

A light is exhibited, at an elevation of 63 feet (19 m 2), from a white square tower, 57 feet (17 m 4) in height, on Carraig Fhada, the western 25 entrance point of Port Ellen. See view facing this page.

Lurabuss head lies about three-quarters of a mile south-south-westward of Carraig Fhada, and foul ground extends, in places, 2 $\frac{1}{2}$ cables offshore from the coast between. Otter Gander reef, with a depth of less than 6 feet (1 m 8) over it, is situated, on the western side 30 of the approach, 7 cables southward of Carraig Fhada lighthouse; these dangers lie in the *red* sector of Carraig Fhada light, and the lighthouse, bearing less than 340°, leads eastward of them.

The Big Wheel reef, with a least depth of 11 feet (3 m 4) over it, lies about 3 $\frac{1}{2}$ cables south-eastward of Sheep island; McFayden's reef, 35 with a least depth of 9 feet (2 m 7) over it, lies about 3 cables southward of the same island. Sgeir Thraghaidh, which covers at high water springs, is situated about 3 $\frac{1}{2}$ cables west-south-westward of Sheep island, and Ceann nan Ribheann, 10 feet (3 m 0) high, about the same distance westward of the island; a pinnacle rock, with a depth of 40 12 feet (3 m 7) over it, lies about 1 $\frac{1}{2}$ cables southward of Ceann nan Ribheann.

A reef with six main heads, having a least depth of 12 feet (3 m 7) over them, lies in the fairway westward of Sgeir Thraghaidh, a pinnacle rock, with a depth of 12 feet (3 m 7) over it, lies 1 $\frac{1}{2}$ cables eastward of 45 Carraig Fhada lighthouse.

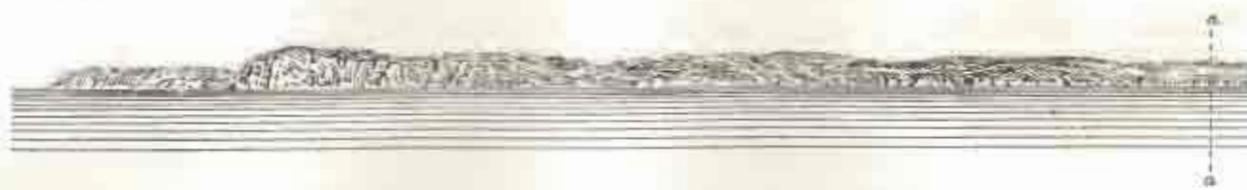
The western half of the harbour, which is indented by Kilnaughton bay, is clear of dangers, and the bottom is, for the most part, flat. In the eastern half a pinnacle rock, with a depth of 9 feet (2 m 7) over it, lies 3 cables westward of Port Ellen pier; there is foul ground between 50 the pier and the distillery on the northern shore mentioned above.

Sgeir nan Ron, 4 feet (1 m 2) high, is situated one cable westward of the pier; a small rock southward of it, is marked by a red beacon with a barrel topmark.

Pilotage.—**Directions.**—Local knowledge is necessary for entering

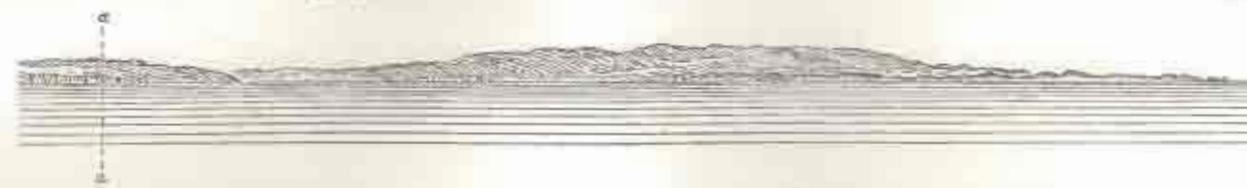
To face page 325.

Mull of Oa.



Pier Eilean.

Ardmure point.



*Craig Eilean
lighthouses
bearing $231^{\circ} \frac{1}{2}$ miles.*

Tiree (Ile)

View, in two parts, of Island of Islay from southward.

(Original dated 1856.)



*Eilean nam
Meann.*

*Fraochanair's
rock.*

*Eilean Mòr
Gormie.*

Portnahaven.

*Rhinns of Islay
lighthouses, bearing
 $054^{\circ}, \frac{1}{2}$ miles.*

South-western part of Rhinns of Islay.

(Original dated 1853.)

To face page 392.



*Rubha Dubh near Port Ellen,
bearing about NNE., 1 mile.*

Southern coast of Oa Peninsula.
(Original dated 1855.)



*Curragh
Roads.*

Port Ellen.

*Tarr serie, bearing
about SSW., 2 miles.*

Tarr island.

Port Ellen from close eastward of Otter rock
(Original dated 1855.)

Chart 2037, plan of Port Ellen.

Port Ellen. A pilot may be obtained by previous arrangements with the pier master.

A vessel should approach with Kilnaughton graveyard, bearing 326° . When the white house with the grey roof bears 350° she should steer for it on that bearing; this course leads close westward of a shoal, with a depth of 16 feet (4^m9) over it, situated about $2\frac{3}{4}$ cables east-south-eastward of Carraig Fhada, and close eastward of the pinnacle rock, with a depth of 12 feet (3^m7) over it, lying $1\frac{1}{2}$ cables westward of Carraig Fhada; the vessel should not attempt to enter the harbour unless she can clear these dangers. After passing through the entrance, and when the south-eastern corner of Port Ellen pier bears 072° , she should steer for it on that bearing, keeping its southern face just open, and passing close south-eastward of Sgeir nan Ròn beacon. (*Lat. $55^{\circ} 38' N.$, Long. $6^{\circ} 12' W.$*)

15

Sea level.—Strong, or prolonged, southerly winds frequently raise the sea level by 2 feet (0^m6), and northerly winds may lower it by the same amount.

Tidal steams.—The streams in Port Ellen are barely perceptible.
See page 130.

20

Anchorages.—There is anchorage in Port Ellen, in depths of from 3 to 6 fathoms (5^m5 to 11^m0). The bottom is generally sand, and the holding ground moderately good.

The best berth, in southerly winds, is about 2 cables westward of Rubha a' Chuinnlein, and one cable northward of Sgeir Fhada, in a depth of 6 fathoms (11^m0). In westerly or northerly winds a vessel should anchor in the middle of Kilnaughton bay, in a depth of 5 fathoms (9^m1) with The Gander rock in line with Carraig Fhada lighthouse, bearing about 200° .

Chart 3116. Larger vessels can find anchorage, with good holding ground, outside the harbour on the bank, with a depth of 9 fathoms (16^m5) over it, about $1\frac{1}{4}$ miles south-eastward of Carraig Fhada lighthouse.

30

Pier.—Lights.—In 1955, the least depth alongside the southern face of the pier was 8 feet (2^m4), and, in the berth for small coasters at the southern end of its eastern face, 5 feet (1^m5).

Lights are exhibited from the south-western and south-eastern corners of the pier when a vessel is expected.

Port facilities.—Water can be obtained at the pier, and small quantities of provisions are available in the town.

Communications.—There is communication by sea with West Loch Tarbert and Glasgow.

A regular air service operates between Port Ellen and Glasgow. The town is connected to the mainland general telephone service.

45

Trade.—Port Ellen is the chief port of Islay, the main industries of which are the distillation of whisky, and agricultural products.

Coastguard.—Life-saving.—An auxiliary watch is kept at Port Ellen; see page 10.

Chart 3116. Between Rubha nan Leacan (Leacon), the south-eastern extremity of The Oa, a peninsula, and Mull of Oa, the south-western extremity of The Oa, about $2\frac{1}{2}$ miles westward, there are no dangers beyond one cable offshore, but a spit extends about one cable south-

50

Chart 3116.

ward from Rubha nan Leacan. An obelisk stands on the summit of the Mull. (See view facing page 132.) Rubha Dubh na h-Otha lies 8 cables westward of Rubha nan Leacan.

- 5 The southern extremity of The Rhinns of Islay, the south-western peninsula of Islay, is situated about 7 miles north-westward of Mull of Oa; Orsay island lies about $1\frac{1}{2}$ cables south-westward of this point. See views facing pages 133 and 134.

Eilean Mhic Coinnich is situated close north-westward of Orsay

- 10 (*Lat. 55° 40' N., Long. 6° 31' W.*), and in the mainland abreast its southern end in the small bight is Portnahaven.

An Coire, about 2 cables southward of the lighthouse on Orsay, dries.

- Between Mull of Oa and The Rhinns of Islay is an inlet, which includes Laggan bay and Loch Indaal; the shores of Laggan bay are 15 low, and fringed with rocks extending half a mile offshore in places.

Coastguard.—Life-saving.—An auxiliary watch is kept at Portnahaven; see page 10. A line-throwing apparatus is maintained at Portnahaven and at the Mull of Oa; see page 9.

Charts 2515, 46.

- 20 **Outlying banks.—Overfalls.**—Middle bank is an extensive shoal centred about 8 miles south-south-westward of the Mull of Oa, and there is a least depth of 13 fathoms (23^m8) over it. Broken ground extends westward and south-westward from this position and there are pinnacles, some of which have depths of less than 20 fathoms 25 (36^m6) over them, in this area, the positions of which may best be seen on the charts.

A bank, with a least depth of 17 fathoms (31^m1) over it, lies about $3\frac{1}{2}$ miles south-south-westward of the Mull of Oa, and broken ground extends between this bank and Middle bank.

- 30 A bank, with a least depth of 15 fathoms (27^m4) over it, lies about 16 miles south-south-westward of the Mull of Oa, and there are other pinnacles with depths of 20 fathoms (36^m6) over them close to it.

A bank, with depths of from 14 to 19 fathoms (25^m6 to 34^m8) over it, is situated about 7 miles west-south-westward of The Rhinns of 35 Islay lighthouse, and a bank with depths of from 13 to 19 fathoms (23^m8 to 34^m7) over it, lies about 11 miles west-south-westward of the same lighthouse. A patch, with a depth of 10 fathoms (18^m3) over it, lies 4 miles farther westward. The depths in this vicinity are irregular.

- A shoal, with a depth of $8\frac{1}{2}$ fathoms (15^m5) over it, was reported, in 40 1948, to lie about $9\frac{1}{2}$ miles west-north-westward of The Rhinns of Islay lighthouse. The existence of this shoal is doubtful, but the position is surrounded by a bank with depths of 14 to 20 fathoms (25^m6 to 36^m6) over it. There are heavy overfalls over these banks in unsettled weather.

- 45 Banks, with least depths of 26 fathoms (47^m5) over them, lie 5 and $8\frac{1}{2}$ miles southward of The Rhinns of Islay lighthouse, and there are other shoals with greater depths over them in this area the positions of which can best be seen on the chart.

Chart 3116.

- 50 **Light.—Fog signal.—Storm signals.**—Rhinns of Islay light is exhibited, at an elevation of 150 feet (45^m7), from a white tower, 96 feet (29^m3) in height, situated on Orsay island. See view facing page 135.

A fog signal is sounded from the lighthouse.

To face page 154.



Rhinns of Islay lighthouse from south-eastward.



An Coire.

Rubha an
Dùin.
lighthouse, rising
about 280', 2 miles.

Rubha an
Dùin.

Gray Island from eastward.
(Original dated 1853.)



North-western coast of Ilay from northward.
(Original dated 1853.)



Eilean nam Meann, bearing about 034°.

3 miles.

(Original dated 1853.)



Rubha a Mhàil lighthouse from eastward.

(Original dated 1813.)

Chart 3116.

Storm signals are displayed at the lighthouse. *See page 6.*

Loch Indaal.—Beacons.—Loch Indaal is entered between Rhinns point (*Lat. 55° 40' N., Long. 6° 29' W.*), the southern extremity of The Rhinns of Islay, and Laggan point, $5\frac{1}{2}$ miles east-north-eastward. Within Saltpan point, $1\frac{1}{2}$ miles northward of Laggan point, the loch opens out into a shallow basin, the bead of which dries out about $7\frac{1}{2}$ cables.

Loch Indaal affords indifferent shelter. A vessel drawing 10 feet (3^m0) or less may proceed far enough in to be protected, but those of 10 greater draught must lie near the mouth of the loch, which is open to the prevailing winds.

Port Charlotte is a village on the western side of the loch about 2 miles north-westward of Laggan point.

Bruichladdich is a village, where there is a pier, situated on the western side of the loch $1\frac{1}{2}$ miles north-north-eastward of Port Charlotte.

Bowmore is a village on the south-eastern side of the loch, about $1\frac{1}{2}$ miles east-north-eastward of Saltpan point. Small quantities of provisions can be obtained; there is a small pier, close north-westward 20 of which are two beacons.

Tidal streams.—The tidal streams are not perceptible at the head of Loch Indaal.

Lights.—A light is exhibited, at an elevation of 50 feet (15^m2), from a white brick tower, 42 feet (12^m8) in height, situated on Rubh' an Dùin, on the western side of Loch Indaal, about 6 miles north-eastward of Rhinns point.

A light is exhibited, at an elevation of 20 feet (6^m1), from a column, 13 feet (4^m0) in height, situated at the head of the pier at Bruichladdich.

Dangers in approaches.—There are many above-water and sunken rocks, extending as much as $2\frac{1}{2}$ cables offshore, between Mull of Oa and Rubha Mòr, about 4 miles north-north-eastward, on the eastern side of the approach to Loch Indaal.

Sliday bank, about 2 miles westward of Rubha Mòr has a least depth of 8 fathoms (14^m6) over it, and lies in the *white* sector of Rubh' an Dùin light, between the bearings of 352° and 036°.

Cnoc Angle rock, about $1\frac{1}{2}$ miles north-north-westward of Rubha Mòr, has a least depth of $3\frac{1}{2}$ fathoms (5^m9) over it, and the sea breaks heavily on it during strong westerly winds; banks, with depths of 8 and 10 fathoms (16^m5 and 18^m3) over them, lie about 2 and $1\frac{1}{2}$ miles north-north-westward, respectively, of Rubha Mòr. This rock and banks are covered by the *red* sector of Rubh' an Dùin light, between the bearings of 251° and 352°.

The western side of the approach to Loch Indaal, between Rhinns point and Port Charlotte, $5\frac{1}{2}$ miles north-north-eastward, is free from dangers beyond $1\frac{1}{2}$ cables offshore.

From Laggan point (*Lat. 55° 43' N., Long. 6° 10' W.*), Bogha n 'tsaoir, a rocky reef, extends about $4\frac{1}{2}$ cables south-south-westward; it has depths of less than 6 feet (1^m8) over it, and is covered by the *red* sector of Rubh' an Dùin light, given above.

Cnoc Donn More, a hill 367 feet (111^m9) high, $5\frac{1}{2}$ miles north-north-eastward of Laggan point, bearing 031° and just open north-westward of Saltpan point, leads north-westward of Bogha n 'tsaoir.

Anchorages.—Dangers.—Anchorage may be obtained, in a depth

Chart 3116.

of 5½ fathoms (10^m1), with good holding ground of brown clay, with Rubh' an Dùin tower bearing 305°, distant 6 cables.

There is anchorage about one mile east-north-eastward of Bruichladdich light-column and about the same distance from the northern side of Loch Indaal, in depths of from 3 to 4 fathoms (5^m5 to 7^m3).

There is also anchorage about 1½ miles eastward of Bruichladdich light-column and about 7 cables from the south-eastern side of the loch, in a depth of 3 fathoms (5^m5).

- 10 An Curachan, about 2½ miles eastward of Bruichladdich light-column and 1½ cables offshore, dries 4 feet (1^m2); Sgeir Ruadh na h Acairseid, about 2½ cables east-north-eastward of An Curachan and 1½ cables offshore, dries 2 feet (0^m6); there is an iron post on An Curachan. These rocks are covered by the *red* sector of Bruichladdich light, between the bearings of 251° and 015°; An Curachan is also covered by the *red* sector of Rubh' an Dùin light, between the bearings of 251° and 352°, but Sgeir Ruadh na h Acairseid is situated on the dividing line between the *white* and *red* sectors of the latter light with it bearing 251°.

- 20 **Life-saving.**—A line-throwing apparatus is maintained at Port Charlotte; *see* page 9.

WESTERN AND NORTH-WESTERN SIDES OF ISLAY.—

Dangers and banks.—**Anchorage.**—The coast between Rubha na Faing, situated 1½ miles north-north-westward of The Rhinns of Islay lighthouse, and Eilean nam Meann, a remarkable promontory, 10 miles northward, forms Machir and Saligo bays (*see* views facing page 135), separated by Coul point, a promontory about 6 miles northward of Ruhha na Faing. (*Lat.* 55° 41' *N.*, *Long.* 6° 32' *W.*).

Frenchman's rocks, about 3 cables west-north-westward of Rubha na Faing, are a group of above-water rocks; some sunken rocks lie between them and Ruhha na Faing.

West bank, with depths of less than 10 fathoms (18^m3) over them, extends about 1½ miles north-westward from a position about 2½ miles north-westward of Rubha na Faing; it has a least depth of 7 fathoms (12^m8) over it.

Shore rocks, about 2½ miles southward of Coul point and about 2 cables offshore, dry.

Two conspicuous radio masts, 90 feet (27^m4) high, and 120 feet (36^m6) high, respectively, stand on the coast at the southern end of 40 Machir bay, about 1½ miles south-south-eastward of Coul point.

A shoal, with a depth of 4½ fathoms (7^m8) over it, lies about 1½ miles southward of Coul point, and 5½ cables offshore. The shores of Machir bay are bordered by a bank, which, with depths of less than 5 fathoms (9^m1) over it, extends as much as half a mile offshore.

45 From the southern extremity of Coul point a group of rocks extends about 2 cables south-westward; the rocks at the south-western end of this group are called Eilean an Tannais-sgeir.

Between Coul point and Eilean nam Meann a bank, with depths of less than 3 fathoms (5^m5) over it, extends as much as 2½ cables offshore.

Ardnave point lies about 5 miles north-eastward of Eilean nam Meann. An Clachan, about 2 cables north-westward of Eilean nam Meann, is a group of above-water rocks.

A bank, about 6 cables north-north-westward of Eilean nam Meann

Chart 3116.

(Lat. $55^{\circ} 51' N.$, Long. $6^{\circ} 27' W.$), has a least depth of 9 fathoms (16^m5) over it. A bank, about $1\frac{3}{4}$ miles north-eastward of Eilean nam Meann and about three-quarters of a mile offshore, has a least depth of 8 fathoms (14^m6) over it.

5

Nave island is situated about $3\frac{1}{2}$ cables north-north-westward of Ardnave point; from its south-western end foul ground extends about $1\frac{1}{4}$ miles south-westward; Eilean Beag lies at about the centre of this foul area; the area between Eilean Beag and Nave island, on the north-western side, and the north-western side of Islay, on the ¹⁰ south-eastern side, is foul; the north-western side of Nave island is foul for about $1\frac{1}{2}$ cables offshore and from the north-eastern end of this island Na Peileirean, a rocky reef, extends about $1\frac{1}{2}$ cables north-eastward. A shoal, with a depth of 2 fathoms (3^m7) over it, lies about 5 cables north-eastward of Ardnave point.

15

Balach rocks, about $1\frac{1}{2}$ miles north-eastward of Nave island, dry.

Gortantaooid farm, about three-quarters of a mile south-eastward of Gortantaooid point (see below), in line with Beinn Bhreac, a hill 937 feet (285^m6) high, $1\frac{1}{4}$ miles south-eastward, bearing about 131° , leads through the fairway between the north-eastern end of Nave island ²⁰ and the south-western end of Balach rocks; the south-eastern extremity of Nave island in line with the bluff of Eilean nam Meann, bearing 237° , leads close south-eastward of Balach rocks.

Anchorage can be obtained by small vessels about $1\frac{1}{4}$ cables from the south-eastern side of Nave island, with the north-eastern extremity of Ardnave point in line with the western extremity of the low Killanallau point, bearing about 160° , in a depth of 3 fathoms (5^m5); the holding ground is good.

Tràigh Baile Aonghais bay is entered between Ardnave point and Gortantaooid point, 2 miles eastward. At the south-western end of ³⁰ Tràigh Baile Aonghais bay is the entrance to Loch Gruinart, a narrow and shallow loch, extending about 3 miles southward.

Between Gortantaooid point and Post rocks, $4\frac{1}{4}$ miles north-eastward, there are no dangers beyond $2\frac{1}{2}$ cables offshore.

Charts 2481, 3116.

35

Bàgh an dà Dhoruis is entered between Rubha Bholsa about $3\frac{1}{4}$ miles north-eastward of Gortantaooid point (Lat. $55^{\circ} 53' N.$, Long. $6^{\circ} 16' W.$), and a point about one mile east-north-eastward. Foul ground extends about $3\frac{1}{2}$ cables offshore on the western side of the entrance to this bight; the foreshore of the bight is cliffy and from ⁴⁰ 50 to 150 feet (15^m2 to 45^m7) high, rising steeply to Beinn Thrasda, about one mile south-westward of Rubha a' Mhail lighthouse, which attains an elevation of 851 feet (259^m4); the coast between Bàgh an dà Dhoruis and Rubha a' Mhàil is foul for as much as $3\frac{1}{2}$ cables offshore in places.

45

Post rocks, a group of dark rough rocks, lie about half a mile from the northern coast of Islay, and $1\frac{1}{2}$ miles west-north-westward of Rubha a' Mhàil lighthouse. A small portion at the northern end is one foot (0^m3) high; but the greater part dries about 6 feet (1^m8).

Foul ground, with kelp, surrounds the group, which is steep-to on ⁵⁰ its northern side; it should not be approached in thick weather, as sounding gives little warning.

The south-eastern extremity of Nave island in line with the bluff of Eilean nam Meann, bearing 237° , leads northward of Post rocks.

Charts 2481, 3116.

The area between Post rocks and the mainland southward is foul.
Chart 2481.

Light.—Storm signals.—A light is exhibited, at an elevation of 5 147 feet (44^m8), from a white tower, 113 feet (34^m4) in height, situated on Rubha a' Mhàil. (See view facing page 135.) This lighthouse shows up very distinctly on certain bearings against the dark background of heather-covered slopes, and is also a prominent landmark from within the Sound of Islay.

- 10 Storm signals are displayed from a flagstaff near the lighthouse. See page 6.

Coastguard.—Life-saving.—There is a coastguard station at Kilchoman, about 1½ miles south-eastward of Coul point (*Lat. 55° 48' N., Long. 6° 29' W.*) (see page 10). A line-throwing apparatus is maintained at Kilchoman; see page 9.

Chart 3116.

Submarine cables.—Submarine cables are laid in an area extending northward from Rubha a' Mhàil; see page 7.

Tidal streams.—Off Orsay and Frenchman's rocks the north-west-going stream begins +0530 Oban (H.W. Dover), the south-east-going stream begins -0040 Oban (-0610 Dover); the streams are very strong, the spring rates in both directions being about 8 knots off Orsay and Frenchman's rocks and about 6 knots over West bank. The rate of the stream decreases progressively farther from the coast and 25 about 5 miles south-westward of Orsay the spring rate is only about 3 knots. There are heavy races off Orsay and Frenchman's rocks, and overfalls on West bank during the south-east-going stream. An eddy runs southward along the coast between Lossit point and Rubha na Faing during the north-west-going stream, and along this coast the 30 stream runs continuously southward. Outside the eddy, and along the coast, generally to Eilean nam Meann, the streams begin as off Orsay, spring rate in each direction being from 2 to 2·5 knots; eddies run southward in Machir bay and Saligo bay during the north-going stream and an eddy runs westward along the northern shore of Machir 35 bay during the south-going stream.

Between Eilean nam Meann and Rubha a' Mhàil the streams run generally in the direction of the coast; the north-east-going stream begins +0500 Oban (-0030 Dover), the south-west-going stream begins -0100 Oban (+0555 Dover); the spring rate in each direction 40 is about 2 knots. There are probably eddies in the bays and little or no stream in the inner part of Tràigh Baile Aonghais. In the entrance to Loch Gruinart the in-going stream begins about +0610 Oban (+0040 Dover), and the out-going stream begins about -0030 Oban (-0600 Dover).

45 About one mile north-north-eastward of Rubha a' Mhàil the stream is affected by the stream of the Sound of Islay (see page 142); the north-going stream, spring rate about 2 knots, begins +0500 Oban (-0030 Dover) and runs in directions changing from about 350° to 010° till about -0255 Oban (+0400 Dover), and to about 045° by 50 -0155 Oban (+0500 Dover); between the latter time and -0055 Oban (+0600 Dover) the stream changes direction through east to about south-east, and by +0130 Oban (-0400 Dover) the south-going stream, spring rate 2·5 knots, is running in a direction about 170°; the south-going stream becomes weak and the change to the north-

Chart 3116.

going stream, through west, begins about +0430 Oban (-0100 Dover). The north-going stream from the Sound of Islay forms an eddy about half a mile northward of Rubha a' Mhàil, which turns westward and then southward back towards the point. 5

Chart 2418.

ORONSAY AND COLONSAY.—The southern extremity of Oronsay, the southern island, is situated about 6 miles north-westward of Rubha a' Mhàil lighthouse (page 138); these two islands are separated by a narrow channel, which dries. The coasts of both ¹⁰ islands are much indented, and there are numerous off-lying rocks and reefs.

Beinn Oronsay, the highest hill in Oronsay, about $1\frac{1}{4}$ miles northward of its southern extremity, attains an elevation of 299 feet (91^m1); it may be identified by its wedge-like appearance, and is precipitous ¹⁵ on its western side with a gentle slope eastward; Càrnán Eoin, about $1\frac{1}{4}$ miles south-south-westward of the northern extremity of Colonsay, is 465 feet (141^m7) high, and is the highest hill in that island; a conspicuous stone tower, 5 feet (1^m5) high, stands on its summit. (See view on chart 2418.) In Colonsay there are several freshwater ²⁰ lakes.

There are no anchorages on the western sides of Colonsay and Oronsay.

Tidal streams.—The streams around the islands, in positions about one mile or so offshore, are more or less rotatory clockwise and ²⁵ run north-westward about -0500 Oban (+0155 Dover), north-eastward about -0200 Oban (+0455 Dover), south-eastward about +0100 Oban (-0430 Dover), and south-westward about +0400 Oban (-0130 Dover); the spring rate in all directions off the north-western side of the islands is about one knot; off the south-eastern side the streams ³⁰ are weak. Though, in general terms, the streams run about as stated, the directions and times given are subject to great irregularities.

Near the land the streams are weak and run north-eastward and south-westward in the direction of the coast; the times at which they begin are not known; there appear to be eddies off the north-eastern ³⁵ point of Colonsay (*Lat. 56° 07' N., Long 6° 08' W.*).

Western coast.—Dangers.—From the south-western extremity of Oronsay a rocky ledge extends about one mile west-south-westward, and a shoal bank extends about $1\frac{1}{2}$ cables westward from the south-western edge of this rocky ledge; Eilean nan Ròn is situated on this ⁴⁰ rocky ledge. Bogha Chubaidh, about $7\frac{1}{2}$ cables south-westward of the south-western extremity of Eilean nan Ròn, has a least depth of one foot (0^m3) over it.

Chart 2515.

Beinn an Oir (page 147), being 116° and showing over Rubha a' Mhàil, leads close south-westward of Bogha Chubaidh. 45

Charts 3116, 2418.

A group of shoals, with a least depth of $4\frac{1}{2}$ fathoms (8^m7) over them, is situated about $3\frac{1}{2}$ miles from the south-western end of Oronsay. 50

Chart 2418.

Between Eilean nan Ròn and the promontory $4\frac{3}{4}$ miles northward, abreast Kilchattan, there are numerous shoals and rocks, which extend as much as $1\frac{1}{2}$ miles offshore in places.

Chart 2418.

Cailleach Uragaig, a precipitous cliffy promontory, 122 feet ($37^{\text{m}}2$) high, lies about $2\frac{1}{2}$ miles south-westward of Meall a Chuilbh, the northern extremity of Colonsay.

5 Bogha na Tuaidh, about $2\frac{1}{2}$ miles south-westward of Cailleach Uragaig (*Lat. $56^{\circ} 06' N.$, Long. $6^{\circ} 13' W.$*) and 2 cables offshore, dries 6 feet ($1^{\text{m}}8$) ; about $1\frac{1}{2}$ cables south-south-eastward of Bogha na Tuaidh is another rock, which dries 6 feet ($1^{\text{m}}8$). The coast for 2 miles south-westward of Cailleach Uragaig consists of steep rocky 10 cliffs, rising to elevations of over 400 feet ($121^{\text{m}}9$), in places, one cable inland.

Kiloran bay is entered about three-quarters of a mile eastward of Cailleach Uragaig ; at its head is a belt of sand, which covers the country inland for about 3 cables. From the north-eastern entrance 15 point of this bay to Eilean Dubh, a small rock above water, situated about half a cable northward of Meall a Chuilbh, the coast is rugged and broken.

20 Bogha enil na Sulair, about one mile north-eastward of the western entrance point of Kiloran bay and $1\frac{1}{2}$ cables offshore, has a least depth of 3 feet ($0^{\text{m}}9$) over it ; between Bogha enil na Sulair and Meall a Chuilbh there are several steep-to, detached rocks, extending as much as $1\frac{1}{2}$ cables offshore.

25 Eastern coast.—*Islets and dangers.—Light.*—Ceann Riobha, an islet 16 feet ($4^{\text{m}}9$) high, situated about 7 cables south-eastward of the southern extremity of Oronsay, is the south-westernmost of a chain of islets and rocks extending about $1\frac{1}{2}$ miles north-eastward. Foul ground extends about 2 cables south-westward from Ceann Riobha, and about $3\frac{1}{2}$ cables south-westward of this islet is a shoal with a depth of $2\frac{1}{2}$ fathoms ($4^{\text{m}}1$) over it. Eilean Ghaoideamal is the north-30 easternmost and largest islet of this group ; from the north-eastern end of Eilean Ghaoideamal a shoal spit extends $1\frac{1}{2}$ cables northward.

Between the western side of this group and the south-eastern side of Oronsay is Caolas Mör, with a least width of $1\frac{1}{2}$ cables, and depths of from 4 to 7 fathoms ($7^{\text{m}}3$ to $12^{\text{m}}8$).

35 About one mile north-eastward of the southern extremity of Oronsay is a low and rocky point, with rocky spurs extending about one cable offshore ; there is a boat-house on the point. Between this point and Eilean Treadhrach, a low sandy point, $8\frac{1}{2}$ cables east-north-eastward, is a bay with sandy beaches interspersed with rocky spurs and 40 detached rocks.

The southern end of Eilean Treadhrach is bordered by foul ground extending about $2\frac{1}{2}$ cables southward and 3 cables south-westward. About $2\frac{1}{2}$ cables north-north-eastward of the northern side of Eilean Treadhrach there is a small rock, which dries 3 feet ($0^{\text{m}}9$) ; between 45 this rock and Meall an Arbhair, $7\frac{1}{2}$ cables north-north-eastward, are several above-water and sunken rocks, lying within the 3-fathom ($5^{\text{m}}5$) line.

About $4\frac{1}{2}$ cables northward of Eilean Treadhrach (*Lat. $56^{\circ} 01' N.$, Long. $6^{\circ} 13' W.$*) is the eastern entrance to the narrow channel separating Oronsay and Colonsay.

Between Meall an Arbhair and Eilean Mhàrtain, one mile north-north-eastward, a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extends about $1\frac{1}{2}$ cables offshore ; Scalasaig light, bearing more than 354° , is obscured over this shoal water. A shoal, with a

Chart 2418

depth of 5 fathoms ($9^{\text{m}}1$) over it, about 2 cables south-eastward of Eilean Mhàrtain, lies in the *white* sector of Scalasaig light, between the bearings of 230° and 354° .

From the coast north-westward of Eilean Mhàrtain foul ground extends about $1\frac{1}{2}$ cables north-eastward, and a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extends a short distance eastward and north-eastward from Eilean Mhàrtain. The eastern edge of this foul area lies in the *white* sector of Scalasaig light, between the bearings of 230° and 354° .
10

Loch Staosnaig is entered between Eilean Mhàrtain and Rubha Duhh. (*Lat.* $56^{\circ} 03' N.$, *Long.* $6^{\circ} 11' W.$).

Scalasaig light is exhibited, at an elevation of 25 feet ($7^{\text{m}}6$), from a white building, 9 feet ($2^{\text{m}}7$) in height, on Rubha Dubh.

A stone obelisk stands on Cnoc na Faire, a hill 263 feet ($80^{\text{m}}2$) high, 15 4 cables west-south-westward of the light-tower. This obelisk is difficult to distinguish until a vessel is close inshore.

The coast between the northern entrance point of Scalasaig harbour and Eilean Olmsa, about $1\frac{1}{2}$ miles north-eastward, is rocky, but there are no dangers beyond $1\frac{1}{2}$ cables offshore. Eilean Olmsa lies on the 20 coastal reef about one cable offshore; a bank, with a depth of $2\frac{1}{2}$ fathoms ($4^{\text{m}}6$) over it, extends about three-quarters of a cable south-eastward from Eilean Olmsa, and a patch, with a depth of 5 fathoms ($9^{\text{m}}1$) over it, lies $2\frac{1}{2}$ cables south-south-eastward of the same islet; this patch is covered by the *red* sector of Scalasaig light, between the 25 bearings of 218° and 230° .

Charts 2118, 2515.

Shoals, with least depths of 7, $4\frac{1}{2}$, and $4\frac{1}{2}$ fathoms ($12^{\text{m}}8$, $8^{\text{m}}2$, and $8^{\text{m}}2$) over them, are situated about 2 miles east-north-eastward, and $3\frac{1}{2}$ and $3\frac{1}{2}$ miles eastward, respectively, of Scalasaig lighthouse.
30

A patch, with a depth of 3 fathoms ($5^{\text{m}}5$) over it, lies about one cable offshore, $1\frac{1}{2}$ miles north-north-eastward of Eilean Olmsa. About one mile farther northward is Rubh' a' Geadha. Foul ground extends about $1\frac{1}{2}$ cables offshore about $2\frac{1}{2}$ cables northward of Rubh' a' Geadha, and a patch with a depth of 4 fathoms ($7^{\text{m}}3$) over it, lies about 4 cables 35 northward of the same point, and $1\frac{1}{2}$ cables offshore. The bight close northward of this point has a smooth sandy beach at its head.
Chart 2515.

A patch, with a depth of 9 fathoms ($16^{\text{m}}5$) over it, lies about $4\frac{1}{2}$ miles east-north-eastward of Meall a Chuilbh.
40
Chart 2418.

Submarine cables.—Beacon.—Submarine cables are landed northward of Loch Staosnaig: (see page 7.) A beacon marks the landing place.

Anchorages.—The bay north-westward of Eilean Ghaoideamal 45 is sometimes used as a temporary anchorage, the best position being about $3\frac{1}{2}$ cables west-north-westward of the northern extremity of Eilean Ghaoideamal, in depths of from 4 to 5 fathoms ($7^{\text{m}}3$ to $9^{\text{m}}1$), gravel.

There is also temporary anchorage for small craft in the north-50 eastern part of the bay, about $5\frac{1}{2}$ cables northward of the northern extremity of Eilean Ghaoideamal and about $1\frac{1}{2}$ cables offshore, in depths of from 2 to 3 fathoms ($3^{\text{m}}7$ to $5^{\text{m}}5$); about $1\frac{1}{2}$ cables westward of this anchorage is a rock which dries one foot ($0^{\text{m}}3$).

Chart 2418.

Loch Staosnaig affords anchorage during offshore winds, about $5\frac{3}{4}$ cables southward of Scalasaig lighthouse and $2\frac{1}{4}$ cables offshore, with Glas Airde farmhouse, about $5\frac{1}{2}$ cables northward of Scalasaig lighthouse, bearing about 006° and just open eastward of Scalasaig lighthouse, in depths of from 6 to 7 fathoms (11^m0 to 12^m8), sand.

Scalasaig harbour, close northward of Loch Staosnaig, affords anchorage to small vessels about $1\frac{1}{2}$ cables eastward of the pier, in a depth of about 4 fathoms (7^m3), sand. This anchorage is open 10 eastward.

In westerly winds, larger vessels can obtain safe anchorage, in a depth of 10 fathoms (18^m3), mud, with Scalasaig light-tower bearing 315° , distant 6 cables; care, however, should be taken to avoid the submarine cables in this vicinity, *see page 7*.

15 Vessels from Firth of Clyde call here regularly.

Small quantities of provisions can be obtained at Scalasaig.

Coastguard.—Life-saving.—An auxiliary watch is kept at Colonsay; *see page 10*. A line-throwing apparatus is maintained; *see page 9*.

*20 Chart 3116.***EASTERN COAST OF ISLAY.—Anchorages.—Banks.**

Light.—Port Mòr (Ardmore), Aros and Claggain bays, situated within 2 miles northward of Ardmore point (page 131), are free from dangers in the fairway, and afford temporary anchorage to small vessels.

25 Rubha Liath, $2\frac{1}{4}$ miles northward of Ardmore point, is fringed with foul ground. Sgeir Lachan, the easternmost of the dangers in this locality, is situated about $1\frac{1}{2}$ cables east-south-eastward of Rubha Liath, and dries about one foot (0^m3).

About 3 cables north-north-westward of Rubha Liath is Rubha Bhealaich Ghaoithe, and close off the latter is Sgeir an Fhèidh, which is awash.

Chart 2481.

Proaig bay, about $1\frac{1}{4}$ miles north-north-westward of Rubha Bhealaich Ghaoithe, affords sheltered anchorage during westerly winds, but the 35 holding ground, of gravel, sand and rock, is not good.

McArthur's head, a steep cliffy promontory, lies about $2\frac{1}{4}$ miles northward of Rubha Bhealaich Ghaoithe.

A light is exhibited, at an elevation of 128 feet (39^m0), from a white tower, 42 feet (12^m8) in height, situated on McArthur's head. *See 40 view facing this page.*

A bank, with a least depth of 44 feet (13^m4) over it, lies about one mile south-eastward of McArthur's head (*Lat. $55^{\circ} 46' N.$, Long. $6^{\circ} 03' W.$*) and about $6\frac{1}{2}$ cables offshore.

A bank, with a depth of 51 feet (15^m5) over it, and a bank, with a 45 depth of 12 fathoms (21^m9) over it, lie about $5\frac{1}{2}$ cables eastward and $1\frac{1}{4}$ miles north-eastward, respectively, of Rubha Bhealaich Ghaoithe.

SOUND OF ISLAY.—Sound of Islay, the southern entrance to which is between McArthur's head and Rubha na Tràille, $3\frac{1}{2}$ miles east-north-eastward, separates the islands of Islay and Jura.

50 The sound is used by vessels to avoid the open sea westward of Islay, but vessels of deep draught are not recommended to use it on account of a rocky bank, with a least depth of 31 feet (9^m4) over it, which is

To face page 142.



Skerrysgaf.
Island
Sea).

Mull of Kintyre, western coast.
(Original dated 1881)

Mull of Kintyre lighthouse,
bearing about 150°, $\frac{1}{2}$ mile.



McArthur's Head lighthouse
from northward.
(Original dated 1913.)



Chart 2481.

situated in the fairway, and extends for about $2\frac{1}{2}$ miles southward from the northern entrance, and also on account of the strength of the tidal streams.

The sound is not recommended for anchorage, except during fine weather in the summer, as the tidal streams are strong, and the bottom of gravel, rock, and shells, encumbered with long seaweed, and which is very uneven in places, is not good holding ground. 5

About 3 cables northward of Rubha na Tràille and close to the coast is Creag nan Sgarbh, a conical hill, 159 feet (48^m5) high, on the summit 10 of which is a cairn.

Tidal streams.—In the southern entrance to the Sound of Islay the streams near the land northward of Ardmore point and westward of Rubha na Tràille run in the general direction of the coast ; in mid-channel between Ardmore point and Rubha na Tràille, and inwards 15 to Am Fraoch eilean, the streams are rather irregular but run in general westerly and north-westerly directions during the north-going stream, and in general south-easterly and easterly directions during the south-going stream. In the sound the streams in mid-channel run generally in the direction of the channel. 20

In both entrances, and throughout the sound, the north-going stream begins +0440 Oban (-0050 Dover), the south-going stream begins -0140 Oban (+0515 Dover) ; the spring rate in each direction in mid-channel is 1.5 knots off McArthur's head, 3.8 knots off Black rock, 4.8 knots off Glas eilean, 5 knots off Feolin, 4.5 knots off Bunna- 25 habhan hay, and 2.8 knots off Sgeir Tràighe (*Lat. 55° 55' N., Long. 6° 05' W.*).

There are overfalls off McArthur's head during the south-going stream. Both streams are weak in the bay between Brosdale island and Am Fraoch eilean, on the northern side of the southern entrance 30 to the sound, but run fairly strongly at the anchorage north-westward of Am Fraoch eilean. In McDougall's bay, on the eastern side of the sound, about half a mile southward of Feolin, an eddy runs southward during the north-going stream ; in Whitefarland bay, also on the eastern side about three-quarters of a mile northward of Feolin, an 35 eddy runs northward during the greater part of the south-going stream ; eddies run southward during the north-going stream in the bay at Caol Ila distillery and in Bunnahabhan hay, and probably elsewhere in the sound.

The coast streams are weak outside the northern entrance, and the 40 streams running from and to the sound are noticeable nearly out to Tarhert bank.

Islets and dangers in the southern part of the sound.—**Light-buoy:**—Brosdale island (*Lat. 55° 47' N., Long 5° 59' W.*), 114 feet (34^m7) high, is situated about one mile west-south-westward of Rubha na Tràille, and is separated from the mainland northward by a narrow channel, with a least depth of 24 feet (7^m3) in the fairway. A shoal, with a least depth of 20 feet (6^m1) over it, lies about 2 cables eastward of the island. The western side of the island is foul for about $1\frac{1}{2}$ cables offshore, and from the south-western end of the island a chain 45 of shoals extends about $3\frac{1}{2}$ cables south-south-westward, with a least depth of 9 feet (2^m7) over them. A shoal, with a least depth of 16 feet (4^m9) over it, lies about 6 cables westward ; and a shoal, with a least depth of 10 feet (3^m0) over it, lies about 6 cables north-westward 50

Chart 2481.

of the southern extremity of Brosdale island. All these shoals are covered by the *red* sector of McArthur's head light, between the bearings of 159° and 244° .

- 5 The centre of Am Plot, a rock 14 feet (4^m3) high, lying close offshore, $1\frac{1}{2}$ miles west-north-westward of the southern extremity of Brosdale island, in line with the north-easternmost of three summits on the skyline of Islay, bearing about 307° , leads close south-westward of the shoals extending south-south-westward, and those lying 7 cables 10 westward of the southern extremity of Brosdale island.

Am Fraoch eilean, about $1\frac{1}{2}$ miles westward of Brosdale island, is about $1\frac{1}{2}$ cables from the mainland of Jura, and attains an elevation of 70 feet (21^m3). From the southern side of Am Fraoch eilean foul ground extends about $1\frac{3}{4}$ cables southward, and from its western side 15 foul ground extends about $1\frac{1}{2}$ cables westward. There is a least depth of 4 feet (1^m2) in the fairway of the channel between the north-eastern side of Am Fraoch eilean, south-westward, and Am Plot and the southern side of Jura, north-eastward.

A patch, with a depth of 43 feet (13^m1) over it, lies about $7\frac{1}{2}$ cables 20 south-south-westward of Am Fraoch eilean.

A reef, partly above water, lies with its south-eastern end about 3 $\frac{1}{2}$ cables westward of Am Fraoch eilean, on the north-eastern side of the fairway; Black rock, on the western edge of this reef, dries 6 feet (1^m8). A rock, with a depth of 5 feet (1^m5) over it, lies about 25 three-quarters of a cable south-south-westward; and a shoal, with a depth of 10 feet (3^m0) over it, lies about $1\frac{1}{2}$ cables north-north-eastward of Black rock. A conical light-buoy, painted black, fitted with a radar reflector, and exhibiting a *white flashing* light *every five seconds*, is moored $2\frac{1}{2}$ cables south-south-westward of Black 30 rock.

The southern extremity of Am Fraoch eilean in line with the northern extremity of Brosdale island, bearing about 087° , leads southward of this reef, and the western extremity of the western side of Jura, bearing about 345° , and open westward of Glas eilean (see below), leads westward of it.

McPhaill rock, about $5\frac{1}{2}$ cables west-north-westward of Am Fraoch eilean (*Lat.* $55^{\circ} 47' N.$, *Long.* $6^{\circ} 02' W.$), dries 2 feet (0^m6).

The boathouse on Am Far-eilean, a point $1\frac{3}{4}$ cables north-eastward of Am Fraoch eilean, in line with the southern fall of Brosdale island, 40 bearing 109° , leads close northward of McPhaill rock.

A narrow shoal, with depths of less than 18 feet (5^m5) over it, extends about $3\frac{1}{4}$ cables north-westward from a position about $8\frac{1}{2}$ cables west-north-westward of Am Fraoch eilean; it lies about $2\frac{3}{4}$ cables from the southern side of Jura, and has a least depth of 13 feet 45 (4^m0) over it; there is a navigable channel north-eastward of this shoal.

All the dangers described above are covered by the *red* sector of McArthur's Head light, between the bearings of 159° and 244° .

Polanfheinn rock, situated on the western side of the sound, about 50 $2\frac{1}{2}$ miles north-westward of McArthur's head and three-quarters of a cable offshore, is awash.

Glas eilean, lying close off the eastern side of the sound about $1\frac{1}{2}$ miles north-westward of Am Fraoch eilean, is a narrow grassy islet, 26 feet (7^m9) high, which is joined to the coast of Jura by a reef;

Chart 2481.

From the south-eastern end of this islet foul ground extends about $1\frac{1}{2}$ cables south-south-eastward.

Carraigataidh rock, on the western side of the sound, about $1\frac{1}{2}$ miles north-north-westward of Polanfheinn rock, and three-quarters of a cable offshore, is awash. Polaiginnean rock, about 7 cables farther northward and about three-quarters of a cable off the western shore, has a depth of 13 feet (4^m0) over it. Ruhha a' Mhàil lighthouse (page 138), bearing about 352° and just open eastward of Carraig Mòr, leads eastward of this rock. 5

Light.—A light is exhibited, at an elevation of 23 feet (7^m0), from a tower, 23 feet (7^m0) in height, situated on Carraig Mòr, on the western side of the Sound of Islay, in the southern approach to Port Askaig, about 5 miles north-north-westward of McArthur's Head light. 10

Dangers in the northern part of the sound.—Light-and-bell-buoy.—Between Carragh an t'Sruith, on the eastern side of the sound, about $1\frac{1}{2}$ miles northward of Feolin, and Rubha Bàrr nan Gobag, $1\frac{1}{2}$ miles farther northward, depths of less than 36 feet (11^m0) extend about $2\frac{1}{2}$ cables offshore. 15

Between Rubha Bàrr nan Gobag and Rubh' Aird na Sgitheich, $3\frac{1}{2}$ miles north-north-eastward, the eastern shore of the sound is fringed by a reef, with depths of less than 3 fathoms (5^m5) over it, which extends about $3\frac{3}{4}$ cables offshore; Sgeir Tràighe, situated near the edge of this reef, about $1\frac{1}{2}$ miles north-north-eastward of Rubha Bàrr nan Gobag, dries 11 feet (3^m4). 20

A conical light-and-bell-buoy, painted black, fitted with a radar reflector, and exhibiting a white group flashing light, giving three flashes, each of half a second duration, every fifteen seconds, is moored 3 cables west-north-westward of Rubha Bàrr nan Gobag. 25

Caol Ila distillery, about $8\frac{1}{2}$ cables north-north-westward of Carraig Mòr (*Lat. $55^\circ 50' N.$, Long. $6^\circ 06' W.$*), which has a tall chimney and a number of white buildings, in line with Dun Bhararaic, $2\frac{1}{2}$ miles south-south-westward, bearing about 194° and just open westward of Rubha Bàrr nan Gobag, leads close westward of the shoal bank westward of Sgeir Tràighe. 30

Between Rubh' Aird na Sgitheich and the entrance to Loch Tarbert, $1\frac{1}{2}$ miles north-eastward, the north-eastern shore is fringed by rocky ledges and sunken rocks, which extend about 2 cables offshore. 35

A bank, with depths of less than 6 fathoms (11^m0) over it, extends about 7 cables north-north-westward of Rubh' Aird na Sgitheich, and a shoal, with a depth of 6 fathoms (11^m0) over it, lies about 9 cables northward of the same point. The rocky bank in the fairway of the sound between Ruhha a' Mhàil lighthouse and Rubh' Aird na Sgitheich is described on page 142. Rubha a' Mhàil is fringed by a rocky bank extending almost $1\frac{1}{2}$ cables offshore, and a rocky ledge, with depths of less than 6 fathoms (11^m0) over it, extends about 5 cables eastward and $1\frac{1}{4}$ miles north-eastward from Rubha a' Mhàil. 40

Submarine cable.—Beacons.—A submarine cable, the direction of which is indicated on the chart, crosses the Sound of Islay about $2\frac{1}{2}$ miles southward of Rubha a' Mhàil. The landing places of the cable are each marked by a pole beacon, painted red and surmounted by a diamond. *See page 7.* 50

Anchorages.—Life-saving.—There is anchorage, with good shelter from northerly winds, on the north-eastern side of the Sound of Islay,

Chart 2481.

in a bay on the southern side of Jura, about 6 cables east-north-eastward of the south-eastern extremity of Am Fraoch eilean and 2½ cables offshore, in depths of from 7 to 8 fathoms (12^m8 to 14^m6), but like all anchorages in the vicinity the holding ground is not very good. There is practically no tidal stream.

From the western entrance point of this anchorage foul ground extends about 1½ cables offshore. Care should also be taken by a vessel approaching this anchorage to avoid the shoals westward of 10 Brosdale island (see page 143).

Jura house stands at the head of this bay, about 1½ cables inland.

There is well-sheltered anchorage off the south-western side of Jura, about 3 cables north-westward of the northern extremity of Am Fraoch eilean (*Lat. 55° 47' N., Long. 6° 02' W.*) and about the same distance 15 offshore, out of the strength of the tidal streams, in depths of from 6½ to 8 fathoms (11^m9 to 14^m6). The holding ground is not reliable.

McDougall's bay, on the eastern side of the sound, about 1½ miles north-north-westward of Glas eilean, affords good anchorage to small vessels about one cable offshore, out of the strength of the tidal streams, 20 in a depth of about 4 fathoms (7^m3); as soon as the western extremity of Carragh an t'Sruith bears less than 354° and is shut in by the point on the eastern shore 1½ miles southward of Carragh an t'Sruith, abreast Feolin ferry buildings, the anchor should be dropped.

Port Askaig, on the western shore, immediately opposite Feolin, 25 in Jura, with which it communicates by motorboat ferry, is a small bight with depths of 2 fathoms (3^m7) close to the shore; it affords shelter for two or three small vessels alongside the quays. There is periodical communication by sea with Glasgow, and a regular service with West Loch Tarbert.

30 A motor lifeboat is stationed at Port Askaig. See page 9.

Small quantities of provisions can be obtained here.

Whitefarland bay, on the eastern side of the sound, about three-quarters of a mile northward of Feolin, affords sheltered anchorage out of the strength of the tidal streams, but the bottom, sand, rock, and 35 weeds, is not good holding ground. The best berth is about 1½ cables offshore, in a depth of 5 fathoms (9^m1), with Carragh an t'Sruith in line with Rubha a' Mhail lighthouse, bearing about 347°, and abreast a large boulder on which a large anchor is cut; there is a ring on this boulder, to which a hawser can be secured if desired. This boulder can be 40 easily identified by a white mark on the cliff immediately behind it.

Bunnahabhan bay, on the western side of the sound, about 2½ miles north-north-westward of Port Askaig, affords good anchorage during westerly winds, and is useful as a temporary anchorage for vessels awaiting slack water; the holding ground is better than in Whitefarland bay. There is a small pier at the southern end of Bunnahabhan bay, at the distillery. The best berth is with the distillery chimney bearing 197°, distant 3 cables, in a depth of about 5½ fathoms (10^m1).

Directions.—A vessel entering the Sound of Islay from southward should steer with the left hummock of a ridge on the western shore 50 in line with a distant rounded hill, bearing 321°, until westward of and abreast Black Rock light-buoy, whence she should steer in mid-channel through the sound until abreast Bunnahabhan distillery (*Lat. 55° 53' N., Long. 6° 07' W.*), thence she should bear westward, and bring the chimney of the distillery in line with the centre of a conspicuous dip

Chart 2481.

in the distant hills, bearing 197° , astern, which leads close westward of the rocky bank lying in the fairway of the northern entrance.

Charts 2481, 2515.

JURA.—Jura is separated from Islay by Sound of Islay ; these two islands together extend nearly 40 miles north-north-eastward from the southern end of The Oa, the southern peninsula of Islay.

Jura contains little arable land considering the area of the island. The inhabitants are employed in fishing, or in rearing cattle and sheep.

On the eastern coast are some spacious caves, with dry level floors 10 and lofty arched roofs.

Aspect.—The general aspect of Jura is that of a continuous mountainous range uninterrupted by any visible plain or valley, the south-western part rising to The Paps, three conical peaks, of which Beinn an Oir, 2,566 feet ($782^{\text{m}1}$) high and situated $2\frac{1}{2}$ miles south-eastward 15 of Rubh' Aira na Sgitheich (*Lat. $55^{\circ} 56' N.$, Long. $6^{\circ} 03' W.$*), the north-western extremity of the island, is the highest.

Tidal streams.—On the eastern side of the northern entrance to the Sound of Islay, between about Sgeir Tràighe and a little eastward of the eastern side of Tarbert bank, the streams run about northward 20 and southward ; there is little stream off the coast between Sgeir Tràighe and Loch Tarbert and off the entrance to the loch. In the outer part of Loch Tarbert, in the bay westward of Eilean Gleann Righ, the stream usually runs north-westward between about +0130 and -0455 Oban (-0400 and +0200 Dover), and in northerly and 25 easterly directions between about -0355 and -0055 Oban (+0300 and +0600 Dover) ; the spring rate is about one knot ; at other times the tidal stream is weak and irregular or slack. There are no perceptible regular streams in other parts of the outer loch. In the channel between the outer and inner lochs the in-going stream begins 30 about -0605 Oban (-0050 Dover) and the out-going stream begins about -0010 Oban (-0540 Dover) ; the spring rate in each direction is about one knot. In the inner loch the streams are imperceptible.

Chart 2515.

Off Shian islet the tidal streams are weak and the spring rate does 35 not exceed half a knot. The streams are also much affected by wind and with strong south-westerly or north-easterly winds may run continuously north-eastward or south-westward along the coast.

Charts 2481, 3116, 2515.

Loch Tarbert.—Loch Tarbert is entered between Rubh' a' Chrois- 40 aoinidh, about $4\frac{1}{2}$ miles east-north-eastward of Rubha a' Mhàil lighthouse (page 138), and Rubh' an t-Sàilein, about $1\frac{1}{2}$ miles northward. From the entrance the loch gradually contracts towards the Narrows, 2½ miles up, at which point it is only about one cable wide, with shoals in the fairway.

45

In the centre of the Narrows, which are named Cumhann Mòr, is an islet, 13 feet ($4^{\text{m}0}$) high; rocks extend about 40 yards ($36^{\text{m}6}$) from the islet, narrowing the channel to about 40 yards ($36^{\text{m}6}$), with depths of from 16 to 22 feet ($4^{\text{m}9}$ to $6^{\text{m}7}$).

A rock, which dries 5 feet ($1^{\text{m}5}$), lies half a cable westward of the 50 islet ; this channel should not be attempted without local knowledge, especially as the tidal streams run strongly.

Above the Narrows the loch widens, and trends about $1\frac{1}{2}$ miles

Charts 2481, 3116, 2515.

east-north-eastward to the upper Narrows, named Cumhann Beag, which are about 50 yards ($45^{\text{m}}7$) wide and 12 feet ($3^{\text{m}}7$) deep ; above the upper Narrows the loch is only available for boats. The upper portion of the loch is separated from Tarbert bay, on the eastern coast of Jura, by an isthmus, about three-quarters of a mile across.

Chart 2481.

Rubh' an t-Sàilein (*Lat. $55^{\circ} 58' N.$, Long. $6^{\circ} 00' W.$*) is a rocky headland, about 70 feet ($21^{\text{m}}6$) high, marked by a cairn. The eastern face is grassy, but the western is bare dark cliff. There is good landing in a small rocky cove in its eastern side, and also in the sandy bight close eastward.

Islets and dangers in outer part of loch.—A shoal, with a least depth of 36 feet ($11^{\text{m}}0$) over it, lies about $1\frac{1}{2}$ miles westward of Rubh' an t-Sàilein. Bo Mòr, about $3\frac{1}{2}$ cables south-south-westward of Rubh' an t-Sàilein, has a least depth of 7 feet ($2^{\text{m}}1$) over it ; close southward of Bo Mòr is a shoal, with a least depth of 26 feet ($7^{\text{m}}9$) over it.

The southern extremity of Aird Reamhar, a promontory 10 feet ($3^{\text{m}}0$) high, on the northern side of the loch, about $1\frac{1}{2}$ miles within the entrance, bearing about 091° and open southward of Eileanan Gleann Righ, leads close southward of the 26-foot ($7^{\text{m}}9$) shoal.

Eileanan Gleann Righ, about 8 cables east-south-eastward of Rubh' an t-Sàilein, are a group of islets and rocks extending about $3\frac{1}{2}$ cables from the northern shore of the loch. The islets are covered with grass and heather, and there is no navigable channel northward of them. The southernmost and highest islet is 21 feet ($6^{\text{m}}4$) high. About $3\frac{1}{2}$ cables west-north-westward of the southernmost islet are some shoals, with a least depth of 12 feet ($3^{\text{m}}7$) over it, and foul ground extends about 2 cables westward from Eileanan Gleann Righ.

Sgeir Agleann, about $6\frac{1}{2}$ cables eastward of Rubh' an t-Sàilein, consists of a number of above-water and sunken rocks, extending about 5 cables off the southern shore ; a detached rock, with a depth of 4 feet ($1^{\text{m}}2$) over it, lies about $8\frac{1}{2}$ cables east-north-eastward of Rubh' an t-Sàilein.

Boghachan Bâite, lying in the approach to the Narrows, about $4\frac{1}{2}$ cables east-south-eastward of Aird Reamhar, is a group of rocks, some of which dry from 3 to 7 feet ($0^{\text{m}}9$ to $2^{\text{m}}1$). Sgeirean an Rubha Liath, about $5\frac{1}{2}$ cables eastward of Aird Reamhar, and three-quarters of a cable west-north-westward of Rubha Liath, a promontory on the northern side of the loch, is an islet about 10 feet ($3^{\text{m}}0$) high ; rocks extend about 80 yards ($73^{\text{m}}2$) south-westward from this islet. A shoal bank extends about three-quarters of a cable south-westward and half a cable southward from Rubha Liath. Sgeirean Bhudragain, about $2\frac{1}{2}$ cables south-south-eastward of Rubha Liath and about 2 cables from the southern shore, is a rocky islet, about 10 feet ($3^{\text{m}}0$) high ; foul ground extends about three-quarters of a cable northward and 2 cables eastward from this islet. Kelp surrounds all these dangers.

The channel separating Boghachan Bâite from Rubha Liath is about 150 yards ($137^{\text{m}}2$) wide, with depths of from 26 to 31 feet ($7^{\text{m}}9$ to $9^{\text{m}}4$), while the channel separating them from the shoal bank extending from the southern shore and Sgeirean Bhudragain has a least width of about one cable, with depths of from 19 to 31 feet ($5^{\text{m}}8$ to $9^{\text{m}}4$).

Chart 2481.

The northern shore of the loch, between Rubha Liath and the Narrows, consists of two bights, with an islet, $3\frac{1}{2}$ cables east-south-eastward of Rubha Liath and 20 feet (6 m 1) high, between them ; the shore is rugged and high, backed by steep slopes, and in the western bight are a few rocks which dry.

The navigable channel southward of this 20-foot (6^m1) islet is about 130 yards (118^m9) wide, with depths of from 14 to 28 feet (4^m3 to 8^m5).

The southern shore of the loch, from abreast Sgeir an Bhudragain (*Lat. 55° 57' N., Long 5° 57' W.*) to the Narrows, is a shallow bight with a stony foreshore sandy at low water; within the 3-fathom (5^m.5) line there are several rocks.

Anchorages.—About $1\frac{1}{2}$ miles of the outer part of the loch is available for anchorage of small vessels, but with the exception of Glenbatrick bay, on the southern side, about one mile within the entrance, there is no shelter from westerly winds.

There is also anchorage towards the head of the loch, about 5 cables above Cumhann Mòr, in depths of from 5 to 6 fathoms (9^m1 to 11^m0), but this should not be attempted without local knowledge.

In the fairway of the western half of Outer Loch Tarbert the depths are about 9 fathoms (16m5), sand, which would afford anchorage for large vessels during offshore winds. There is no indraught.

The bay between Rubh' an t-Sàilein and Eileanan Gleann Right should be avoided, as a heavy swell frequently sets into it.

Bàgh Gleann Righ Mòr is an indentation eastward of Eileanan Gleann Righ: it is easy of access, and has good holding ground in a depth of about 6 fathoms (11^m0). The best berth is in a depth of 6 fathoms (11^m0), with Rubh' an t-Sàilein bearing 289°, and the southern extremity of Eileanan Gleann Righ bearing 239°. There is very little tidal stream at this anchorage. Westerly gales send in a 30 heavy sea, and anchorage should then be sought in Glenbatrick bay.

Glenbbrick bay is entered between Sgeir Agleann and Rubh' a' Bhaillein, $6\frac{1}{2}$ cables eastward; it affords anchorage about $3\frac{1}{2}$ cables west-north-westward of the northern extremity of Rubh' a' Bhaillein in depths of from 6 to 7 fathoms (11^m0 to 12^m8), sand.

This anchorage is more sheltered from the prevailing south-westerly winds than the anchorages on the northern shore, but the latter are to be preferred during northerly winds.

The head of the south-western part of Glenbatrick bay dries out about 2 cables, and in this part of the bay there is a small pier which 40 small rowing boats can go alongside at high water.

Gleann Righ Beag, a bight immediately north-eastward of Airc Reamhar, affords anchorage, except during westerly winds, with Airc Reamhar bearing not less than 270° , in depths of about 5 fathoms (9^m1).

There is good anchorage, for small vessels with local knowledge, ~~at~~ out of the tidal streams, $5\frac{1}{2}$ cables eastward of the islet 13 feet (4^m0) high in Cumhann Mòr.

Directions.—A vessel proceeding into Loch Tarbert should steer in mid-channel with Aird Reamhar (*Lat. 55° 58' N., Long. 5° 58' W.*) bearing about 070°, and if bound for one of the anchorages on the southern or northern shores can, after passing southward of Eileanan Gleann Righ, steer for the desired anchorage.

A vessel proceeding towards the Narrows should, after passing southward of Eileanan Gleann Righ, steer to pass close southward of

Chart 2481.

Aird Reainhar, and bring the southern extremity of that point in line with the northernmost of the above-water rocks of Eileanan Gleann Righ, bearing 291° , astern, which leads between Boghachan Bâite, 5 on the south-west, and Sgeircean an Rubha Liath and Rubha Liath on the north-east. After passing southward of Rubha Liath she should keep on the northern side of the loch, but when passing through the Narrows she should steer a mid-channel course between the islet 13 feet (4^m0) high and the southern shore, which leads through the 10 Narrows in a least depth of 18 feet (5^m5), but this channel should only be used by small vessels with local knowledge.

Chart 2515.

North-western coast of Jura.—The coast between Rubh' an t-Sàilein and Shian islet, about $3\frac{1}{2}$ miles north-north-eastward, is 15 rocky with moorland slopes above. Here there are a great many raised beaches, which appear as large grey patches against the heather, the highest being elevated about 136 feet (41^m4).

The coast is foul to the 3-fathom (5^m5) line, and should be approached with caution.

20 Shian bay is small and shallow, and there are several rocks in it. It is much exposed, and a heavy swell frequently sets on to the shore. Landing can be effected in fine weather, on the southern side of a point 2 $\frac{1}{2}$ cables southward of Shian islet.

Charts 2326, 2515.

25 Between the point northward of Shian islet and the northern extremity of Jura, there are several indentations.

Chart 2326.

Glendebadel and Glengarrisdale bays, $6\frac{1}{4}$ and $8\frac{1}{4}$ miles, respectively, north-eastward of Shian bay, are small, but have moderate depths, and 30 are easily accessible as temporary anchorages. As southerly gales very frequently veer to some northerly point, no anchorage can be deemed safe if open in that direction.

Bàgh uamh nan Giall, which is entered about $8\frac{1}{2}$ cables north-eastward of the eastern entrance point (*Lat. $56^{\circ} 07' N.$, Long. $5^{\circ} 47' W.$*) 35 of Glengarrisdale bay, is a small bight, free from dangers, with depths of from 2 to 3 fathoms (3^m7 to 5^m5).

About $9\frac{1}{2}$ cables north-north-eastward of Bàgh uamh nan Giall is Glentrosdale bay, open north-westward; Buige rock, about three-quarters of a cable northward of the north-eastern entrance point of 40 Glentrosdale, dries about 10 feet (3^m0).

Eilean Mòr, about 3 cables north-westward of the north-eastern entrance point of Glentrosdale, is 85 feet (25^m9) high, and is steep-to, except on its north-western side, where there is a sunken rock about half a cable offshore. A vessel can pass either eastward or westward 45 of Eilean Mòr.

Bàgh Gleann nam Muc, entered about 4 cables east-north-eastward of Glentrosdale, is a small bight, free from dangers in the fairway, with depths of from 6 to 8 fathoms (11^m0 to 14^m6), but there are rocky shoals off both entrance points. This bight, being open north-50 ward, is subject to a heavy swell.

Charts 3116, 2515.

Off-lying bank.—Tarbert bank, with depths of from $5\frac{1}{2}$ to 10 fathoms (10^m5 to 18^m3) over it, extends about 4 miles north-eastward from a position about 2 miles north-north-eastward of Rubha a'

Charts 3116, 2515.

Mhàil lighthouse. The bottom is smooth and hard, and covered with sand and broken shells.

Chart 2144.

MULL OF KINTYRE TO SOUND OF GIGHA.—Dangers.—*5*
The coast between Mull of Kintyre and Glenacardoch point, about 17 miles northward, is bleak and rugged, with sandy beaches in the bays, and is open to the Atlantic swell which breaks heavily on the coast even during calm weather. See view facing page 142.

Rubha Dùin Bhàin is situated about $3\frac{1}{2}$ miles northward of Mull *10* of Kintyre lighthouse, and Leac Bhuidhe lies 3 miles north-north-eastward of Rubha Dùin Bhàin.

Machrihanish bay is entered close eastward of Uisaed, about one mile north-north-eastward of Leac Bhuidhe ; it is shallow, with some sunken rocks at the head of the bay, and though it affords some *15* shelter from southerly and south-westerly winds, is not used as an anchorage. A conspicuous framework tower stands on Uisaed. Skerrinagal, a rock, with a depth of less than 6 feet (1^m8) over it, lies close offshore about $1\frac{1}{4}$ miles northward of Rubha Dùin Bhàin.

Skerrivore, about $2\frac{1}{2}$ cables north-westward of Uisaed, has a depth *20* of less than 6 feet (1^m8) over it. This rock is almost invariably marked by breakers, and there is generally a heavy swell northward of it, which makes the rock appear of greater extent than it really is. Rubha Dùin Bhàin (*Lat.* $55^{\circ} 22' N.$, *Long.* $5^{\circ} 48' W.$), bearing about 188° and open westward of the coast about $1\frac{1}{2}$ miles northward, leads *25* westward of this rock.

At night, Mull of Kintyre light is obscured over these dangers.

Malcolm rock, awash, lies on the edge of the coastal reef about $6\frac{1}{2}$ miles northward of Uisaed.

A patch, with a depth of 28 feet (8^m5) over it, lies about half a mile *30* offshore, $1\frac{1}{2}$ miles southward of Glenacardoch point.

Charts 2144, 46.

Submarine cables.—Beacon.—Submarine cables, the directions of which are indicated on the chart, are laid between a point about 8 cables north-eastward of Glenacardoch point and Islay. See page 7. *35* A beacon marks the landing place.

Tidal streams.—Near the coast close northward of Mull of Kintyre the north-going stream begins +0400 Oban (-0130 Dover) and the south-going stream begins -0225 Oban (+0430 Dover) ; the spring rate in each direction is about 5 knots. Close southward of Glena- *40* cardoch point the north-going stream begins +0430 Oban (-0100 Dover) and the south-going stream begins -0155 Oban (+0500 Dover) ; the spring rate in each direction is about 2.5 knots. There are races off Rubha Dùin Bhàin, Skerrinagal and Skerrivore.

Close inshore between Skerrivore and Port Lub na h-Uamha, about *45* $4\frac{1}{2}$ miles north-north-eastward, an eddy runs southward during part of the north-going stream. In the eddy the north-going stream begins about +0230 Oban (-0300 Dover) and runs for about 3 hours ; the south-going stream begins about -0530 Oban (H.W. Dover) and runs for about $9\frac{1}{2}$ hours. *50*

Caution.—Heavy overfalls occur, in unsettled weather, over a bank, with a least depth of 20 fathoms (36^m6) over it, situated about $11\frac{1}{2}$ miles west-north-westward of Mull of Kintyre.

Charts 2159, 3674, 2515, 1577, 2635, 1824a.

Chart 2037, plan of Sound of Gigha.

SOUND OF GIGHA.—Beacon.—Sound of Gigha is entered from southward between Glenacardoch point and Mull of Cara, about 3 miles north-north-westward. The eastern shore of the sound is low, but rises to hills of moderate elevation a short distance inland. Rhunahaorine point, on which stands a tower, $6\frac{1}{2}$ miles northward of Glenacardoch point, is the extremity of a long projecting flat a few feet high. A bank, with depths of less than 6 feet (1^m8) over it, extends about $4\frac{1}{2}$ cables north-westward from Rhunahaorine point.

Caution.—There are so many shoals in the Sound of Gigha that its navigation should never be attempted without local knowledge. Strangers should always pass westward of the island.

Tidal streams.—The north-going stream begins +0430 Oban 15 (-0100 Dover) and the south-going stream begins -0155 Oban (+0500 Dover); the spring rate in each direction is about 1.5 knots. In Caolas Gigalum, between Cara and Gigha islands, the spring rate is also about 1.5 knots.

Gigha Island.—Gigha island, the southern extremity (*Lat. $55^{\circ} 39' N.$, Long. $5^{\circ} 46' W.$*) of which is situated about $4\frac{1}{2}$ miles north-north-westward of Glenacardoch point, together with Gigalum and Cara islands, form the western side of the Sound of Gigha; Gigalum island, lying about 6 cables east-north-eastward of the southern extremity of Gigha island, is 42 feet (12^m8) high; Cara island, the 25 northern extremity of which is about $5\frac{1}{2}$ cables south-eastward of the southern extremity of Gigha island, attains an elevation of 137 feet (41^m8). Creag Bhan, a hill about $2\frac{1}{2}$ miles from the northern end of Gigha island, attaining an elevation of 329 feet (100^m3), is the summit of this island.

30 Gigha and Cara islands had a population of 190 in 1951.

Dangers off western side of Gigha island.—Light-boat.—Dearg sgeir, about $3\frac{1}{2}$ cables west-north-westward of the southern extremity of Gigha island, dries $3\frac{1}{2}$ feet (1^m1); foul ground lies between Dearg sgeir and the point $2\frac{1}{2}$ cables north-north-eastward. Dubh sgeir, about 4 cables north-westward of the point just mentioned, is 11 feet (3^m4) high, and a spit, with a depth of 28 feet (8^m5) over its outer end, extends about $1\frac{1}{2}$ cables south-south-westward from its southern end and foul ground extends about $1\frac{1}{2}$ cables northward from its northern end; between Dubh sgeir and the shore eastward and north-eastward there are a number of above-water and sunken rocks.

Càth sgeir, the westernmost of the off-lying dangers on the western side of Gigha island, is a reef, above-water and sunken, situated about $1\frac{1}{4}$ miles north-westward of the southern extremity of Gigha island.

A light-boat, with a conical superstructure, painted red, fitted with 45 radar reflectors, and exhibiting a *white flashing light every six seconds*, is moored close westward of the northern end of Càth sgeir. There is a channel, with depths of from 11 to 31 fathoms (20^m1 to 56^m7) in the fairway between Càth sgeir and Dubh sgeir.

Outer Red rock and Inner Red rock, about $1\frac{1}{4}$ miles south-westward 50 and south-south-westward, respectively, of the southern end of Eilean Garbh, which is situated one mile south-westward of the northern extremity of Gigha island, lie about $4\frac{1}{2}$ and 3 cables, respectively, of the western side of Gigha island; Outer Red rock has a least depth of 13 feet (4^m0) over it, and Inner Red rock a depth of less than 6 feet

Chart 2037, plan of Sound of Gigha.

(1^m8) over it. Toe rock, about one cable south-south-westward of Outer Red rock, has a least depth of 4 fathoms (7^m3) over it.

Eilean Garbh (*Lat. 55° 43' N., Long. 5° 44' W.*) is joined by a narrow neck of land to Gigha island; it attains an elevation of 155 feet (47^m2), and is steep-to on its western side.

Charts 2037, plan of Sound of Gigha, 2159.

Dangers in southern part of Sound of Gigha.—Buoy.—A long narrow shoal, with a least depth of 2½ fathoms (4^m1) over it, the southern end of which is situated about 6½ cables north-north-eastward of Glenacardoch point, extends about one mile parallel with the coast and about 6½ cables offshore; there is a channel between this shoal and the coast, which can be used by small vessels with local knowledge; Sgeir an Tru, about 1½ miles northward of Glenacardoch point and about 7½ cables offshore, dries 3 feet (0^m9). . . . 15

Chart 2037, plan of Sound of Gigha.

A 'Chléit is situated 2½ miles north-north-eastward of Glenacardoch point and has a church on it. Between A 'Chléit and Rhunahaorine point, 4 miles northward, the coast is bordered by a bank, which, with depths of less than 18 feet (5^m5) over it, extends from 2 to 8 20 cables offshore. Several above-water and sunken rocks lie on this bank.

Alert rocks, situated on the western side of the Sound of Gigha, about three-quarters of a mile southward of Mull of Cara, the south-eastern extremity of Cara island, have a least depth of 27 feet (8^m2) 25 over them.

Cara rock, about 6½ cables eastward of Mull of Cara, has a depth of 11 feet (3^m4) over it; there are many other shoal heads in this vicinity.

Cara flat, which extends about 4 cables from the eastern side of 30 Cara island, has depths of from 18 to 36 feet (5^m5 to 11^m0) over it; a shoal, with a depth of 15 feet (4^m6) over it, lies on this flat, about 5 cables east-north-eastward of Mull of Cara.

Cara rocks, from 3 to 8 feet (0^m9 to 2^m4) high, extend about 3½ cables westward from the north-western side of Cara island. Cara 35 reef extends about 2 cables northward from the northern extremity of the same island.

Caolas Gigalum is the narrow and intricate channel encumbered with rocks above and below water, between the south-eastern side of Gigha island and Gigalum island; the least depth in the fairway 40 is 10 feet; it is only available for small vessels with local knowledge.

Rhu Mhurachy rocks, about 8½ cables east-south-eastward of Gigalum island, have a least depth of 12 feet (3^m7) over them; there are many other shoals in this vicinity.

Gigalum rocks, about 4½ cables eastward of Gigalum island, dry 45 about 3 feet (0^m9); a spherical buoy painted red and white in horizontal bands, and surmounted by a triangle, marks the northern end of this reef.

Wee rocks, about one mile eastward of Gigalum island (*Lat. 55° 39' N., Long. 5° 44' W.*), have depths of less than 6 feet (1^m8) over them. 50 Flat rock, about 1½ miles east-north-eastward of Gigalum island, has a least depth of 10 feet (3^m0) over it.

Sgeir Gigalum, about 6½ cables east-north-eastward of Eilean Liath, an islet, 13 feet (4^m0) high, close off the eastern side of Gigha island,

Chart 2037, plan of Sound of Gigha.

about 7 cables north-north-eastward of the northern extremity of Gigalum island, is awash.

Sgeir Dhnbh, about $5\frac{1}{2}$ cables northward of Eilean Liath, in line with the inn at Ardmish, $4\frac{1}{2}$ cables west-north-westward, bearing about 290° , leads northward of Sgeir Gigalum.

Northward of Sgeir Dhnbh, between that rock and Ardmish point, one mile north-north-eastward, there are several rocks and shoals.

10 Dangers in the northern part of Sound of Gigha.—Buoy.—On the eastern side of the sound a bank, with depths of less than 18 feet (5^m5) over it, extends about $1\frac{1}{2}$ miles northward from Rhunahaorine point and one mile offshore. Sgor Cainnteach, 5 feet (1^m5) high, lies on this bank about 9 cables northward of Rhunahaorine point.

Druimyeon reef, partly above water, extends about $4\frac{1}{2}$ cables north-north-eastward from Ardmish point. About 4 cables farther northward is Sgeir Blath-shuileach, 3 feet (0^m9) high, lying at the northern extremity of another reef on which there are some rocks 20 above water.

Sgeir Nuadh, situated on the western side of the fairway, about $6\frac{1}{2}$ cables north-eastward of Ardmish point (*Lat. $55^\circ 41' N.$, Long. $5^\circ 43' W.$*), dries 3 feet (0^m9). Badh rock, lying in the middle of the sound, about $1\frac{1}{2}$ miles north-eastward of Ardmish point, has a 25 depth of less than 6 feet (1^m8) over it, and is marked on its northern side by a spherical buoy, painted in red and white horizontal bands. There are other shoals in this vicinity.

Vessels can pass on either side of Badh rock, but the western side is the usual channel; the channel eastward of Badh rock has a least 30 width of about $2\frac{1}{2}$ cables, and the fairway is deep.

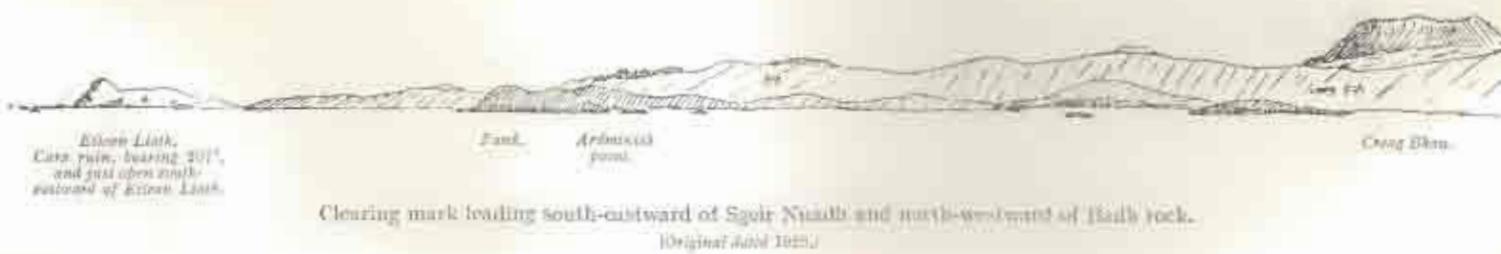
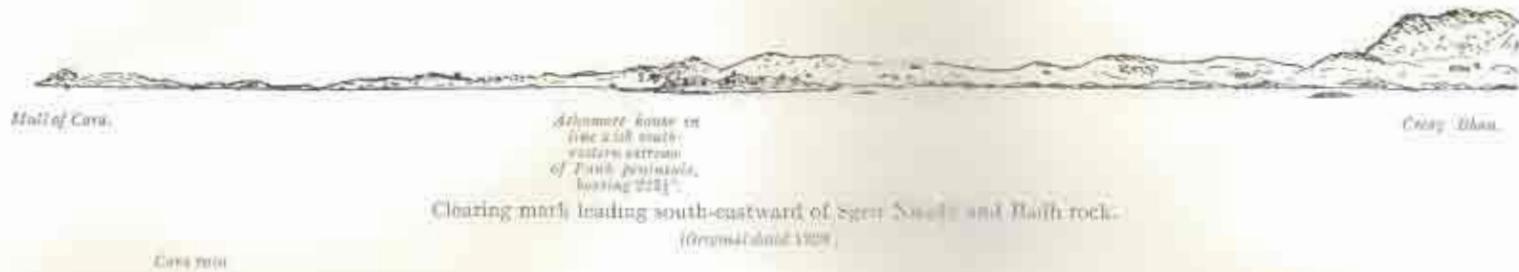
The south-eastern extremity of Fank peninsula, of which Ardmish point is the north-eastern extremity, in line with Achamore house, situated $1\frac{1}{2}$ miles south-westward of Ardmish point, bearing $225\frac{1}{2}^\circ$, leads close south-eastward of Sgeir Nuadh and Badh rock (see view 35 facing this page). Cara ruin, at the northern end of Cara island, bearing 207° and just open south-eastward of Eilean Liath, leads south-eastward of Sgeir Nuadh and north-westward of Badh rock (see view facing this page). Sgeir Blath-shuileach in line with Cnoc Largie, a hill 217 feet (66^m1) high, 7 cables westward, bearing about 274° , leads 40 between Sgeir Nuadh and Badh rock. The roof and chimneys of Tarbert farm, about $2\frac{1}{2}$ cables west-north-westward of Cnoc Largie, bearing 254° and showing over the shoulder of Cnoc Largie, lead northward of Badh rock.

Gmhna Gigha, situated in the northern entrance of the sound, 45 about one mile east-north-eastward of Rubh' a' Chairn Bhain, the north-eastern extremity of Gigha island, is an above-water and sunken reef, the highest part of which has an elevation of 8 feet (2^m4).

From the north-eastern end of Gigha island a bank, with depths of from 23 to 35 feet (7^m0 to 10^m7) over it, extends about $5\frac{1}{2}$ cables 50 east-north-eastward.

An Dubh-sgeir, about 5 cables northward of the northern extremity of Gigha island, is a group of above-water and sunken rocks, the highest of which has an elevation of 11 feet (3^m4). There is a channel, about one cable wide between the northern end of Gigha island and

To face page 154.





Gava I.

Gigalum I.

Summit of Eilean Liath
in line with Arminieh
point, bearing 013°.

Sgeir
Gigalum.

Leading mark for channel westward of Sgeir Gigalum, sound of Gigha.
(Original dated 1930.)



Luing Island.

College.

Coleura.

Dow
Challenger.

Shuna cottage, bearing 098° and open westward of Coleura.
(Original dated 1930.)



Dunna na
Glacche farm.

Conspicuous
boulder.

Caiste Sgeiran.

Loch Sween.
(Original dated 1937.)

Chart 2307, plan of Sound of Gigha.

An Dubh-sgeir, with depths of from 36 to 42 feet (11^m0 to 12^m8) in the fairway, but is only available for small vessels with local knowledge. A shoal, with a least depth of 27 feet (8^m2) over it, lies about 9 cables eastward of An Subh-sgeir. 5

Chart 2477.

In the northern approach to Sound of Gigha, about $1\frac{1}{4}$ and $2\frac{1}{2}$ miles north-eastward, $1\frac{1}{2}$, $2\frac{1}{2}$ and 3 miles north-north-eastward of the northern extremity of Gigha island, respectively, are shoals with least depths of 29, 29, 33, 31 and 27 feet (8^m8 , 8^m8 , 10^m1 , 9^m4 and 8^m2) 16 over them; the depths in this area are very irregular.

Chart 2037, plan of Sound of Gigha.

Submarine cable.—Beacons.—Submarine cables are laid across Sound of Gigha from the north-eastern side of Ardmish bay, about three-quarters of a mile south-westward of Ardmish point (*Lat. 55° 41' N., Long. 5° 43' W.*), east-south-eastward to the opposite short and eastward to Rhunahaorine point; the landing place on each side is marked by a beacon, painted in red and white vertical stripes. 15

See page 7.

Anchorages.—Ardminish bay and Druimyeon bay, on the eastern 20 side of Gigha island, close southward and northward of Ardmish point, respectively, are good anchorages, well sheltered from westerly winds, but, on account of the numerous shoals in their approaches, they should only be used by vessels with local knowledge.

There is a pier at Ardmish, and vessels from West Loch Tarbert 25 call regularly.

Small quantities of provisions can be obtained here.

Directions.—Only a small vessel with local knowledge should attempt to proceed through Sound of Gigha, but if obliged to do so the following directions may be found useful. 30

From a position about 3 cables south-eastward of Mull of Cara a vessel should steer for the summit of Eilean Liath in line with the eastern extremity of Ardmish point, bearing about 013° , which leads through the fairway between Cara and Gigalum islands, on the west, and Cara and Gigalum rocks, on the east, clear of all dangers, to 35 within about 3 cables of the southern end of Eilean Liath. *See view facing this page.*

The vessel should thence steer to pass not less than one cable eastward of Eilean Liath, and, thence with Cara ruin, bearing 207° , astern, and just open south-eastward of Eilean Liath, which leads through the 40 fairway, passing south-eastward of Sgeir Nuadh and Gamhna Gigha, and north-westward of Badh rock. *(See view facing this page.)*

It should be noted that this leading line leads close north-westward of a shoal with a depth of 18 feet (5^m5) over it, situated $5\frac{1}{2}$ cables north-north-eastward of Eilean Liath; close south-eastward of a 45 shoal, with a depth of 20 feet (6^m1) over it, $8\frac{1}{2}$ cables north-north-eastward of the same islet; and close south-eastward of a shoal with a depth of 24 feet (7^m3) over it, about $1\frac{1}{4}$ miles north-eastward of Ardmish point.

Chart 2477.

50

WEST LOCH TARBERT.—West Loch Tarbert is entered between Ronachan point, $4\frac{1}{2}$ miles eastward of the northern extremity of Gigha island, and Ardpatick point, $1\frac{1}{4}$ miles north-north-westward. The

Chart 2477.

loch is separated from East Loch Tarbert by a low isthmus three-quarters of a mile across.

In the narrows south-eastward of Eilean Tràighe, about three-quarters of a mile eastward of Ardpatick point, there are depths in the fairway of from 19 to 32 feet (5^m8 to 9^m8). About half a mile north-eastward of Eilean Tràighe, there is a small area, with depths of from 10 to 18 fathoms (18^m3 to 32^m9).

The least depth in the fairway of the loch as far as a position about 10 half a mile above Dunmore, a village on the north-western shore, about $3\frac{3}{4}$ miles north-eastward of Ardpatick point, is 4 fathoms (7^m3) ; thence the depths gradually decrease.

Small quantities of provisions can be supplied at Clachan, about $1\frac{1}{2}$ miles east-north-eastward of Ronachan point (*Lat.* $55^{\circ} 44' N.$, $15^{\circ} Long. 5^{\circ} 36' W.$).

There is a small pier at Portachoillan, $1\frac{1}{2}$ miles north-eastward of Ronachan point, and another on the opposite shore north-westward of it.

Tidal streams.—In mid-channel in the entrance to West Loch Tarbert the in-going stream, spring rate 0·8 knot, begins +0530 Oban (H.W. Dover) ; the out-going stream, spring rate 1·4 knots, begins -0030 Oban (-0600 Dover). The streams are rather irregular in both direction and rate. In the loch the streams are barely perceptible. See also Table of tidal streams for station West Loch Tarbert (A) in Tidal Streams European Waters, Part II, 1948.

Islets and dangers.—A shoal, with a depth of 24 feet (7^m3) over it, lies about $3\frac{1}{2}$ cables south-westward of Ardpatick point.

Eilean Tràighe, 12 feet (3^m7) high, lies with its south-western extremity about $5\frac{1}{2}$ cables eastward of Ardpatick point. The north-western side of this islet is connected with the north-western shore of the loch by a bank of gravel and boulders, which dries ; several rocks, above-water and sunken, extend about 2 cables southward and south-south-westward from the south-western end of the islet ; from the eastern side foul ground extends about $2\frac{1}{2}$ cables eastward.

35 The south-eastern side of the loch is fringed by a reef, which extends about $3\frac{1}{2}$ cables offshore, about $4\frac{1}{2}$ cables north-eastward of Corran point (*Lat.* $55^{\circ} 46' N.$, *Long.* $5^{\circ} 34' W.$), about 2 miles north-eastward of Ronachan point ; the rocks at the northern edge of the reef dry 2 feet (0^m6).

40 Rubh' a' Bhàrr Ruaidh lies on the north-western shore, about $1\frac{1}{2}$ miles east-north-eastward of Ardpatick point. Sgeir Mhein, which dries 4 feet (1^m2), lies on the edge of the coastal reef about $1\frac{1}{2}$ miles east-north-eastward of Rubh' a' Bhàrr Ruaidh.

Above Sgeir Mhein, the north-western shore of the loch is fringed 45 by a reef extending from half a cable to one cable offshore.

Black rocks, on the south-eastern side of the loch, about 3 miles north-eastward of Corran point and $1\frac{1}{2}$ cables offshore, dry 4 feet (1^m2). A shoal, with a depth of 15 feet (4^m6) over it, lies in the fairway of the loch, about $3\frac{1}{2}$ cables northward of Kilchamaig point, a promontory 50 on the south-eastern shore abreast Dunmore. The channel is 2 cables wide between Kilchamaig point and Dunmore.

Sgeir an t-Snidh, about $9\frac{1}{2}$ cables north-north-eastward of Kilchamaig point, and 2 cables from the north-eastern shore, is 4 feet (1^m2) high ; about $1\frac{1}{2}$ cables southward of Sgeir an t-Snidh is a shoal.

Chart 2477.

with a depth of 17 feet (5^m2) over it ; and there are several shoals, with a depth of 3 fathoms (5^m5) over them, lying in the fairway between a position $3\frac{1}{2}$ cables south-south-eastward of Sgeir an t-Snidh and 8 cables east-north-eastward of the same islet. 5

Between Sgeir an t-Snidh and Eilean a Mhadaidh, 17 feet (5^m2) high, about $8\frac{1}{2}$ cables north-eastward, there are several detached sunken rocks lying as much as 4 cables off the north-western shore.

Eilean Eòghainn, 17 feet (5^m2) high, and steep-to on its north-western side, lies almost one cable south-westward of Rhu point, 10 which is situated 4 cables eastward of Eilean a Mhadaidh.

Sgeir na Bile, about $4\frac{1}{2}$ cables north-eastward of Eilean a Mhadaidh and about one cable from the north-western shore, is one foot (0^m3) high.

Sgeir Liath, 4 feet (1^m2) high, lies on the north-western side of the 15 fairway about $4\frac{1}{2}$ cables north-eastward of Sgeir na Bile ; rocks, which dry one foot (0^m3), lie within half a cable north-westward and southward of it. Eilean dà Ghallagain, close off the north-western side of the loch, about $3\frac{3}{4}$ cables north-eastward of Sgeir Liath, is 31 feet (9^m4) high. 20

Between Eilean dà Ghallagain and the head of the loch the channel is free from dangers in the fairway.

Ferry.—A ferry crosses the loch between Kilchamaig point and Dunmore. (*Lat. $55^{\circ} 48' N.$, Long. $5^{\circ} 31' W.$.*)

Anchorages.—There is good anchorage for small vessels on the 25 north-western side of the loch, about $5\frac{1}{2}$ cables north-eastward of the north-eastern extremity of Eilean Tràighe, and about $2\frac{1}{2}$ cables eastward of the ferry pier under Cnoc a' Mhòr shir, in a depth of 5 fathoms (9^m1).

Good temporary anchorage can be obtained by small vessels between 30 Black rocks and Eilean Eòghainn, with Corran point bearing about 227° and seen midway between the narrows of Dunmore, in depths of from 3 to 4 fathoms (5^m5 to 7^m3), mud.

Small vessels can obtain good anchorage about one cable east-north-eastward of the northern extremity of Eilean dà Ghallagain, 35 in depths of from $1\frac{1}{2}$ to 2 fathoms (2^m7 to 3^m7).

Directions.—A vessel entering West Loch Tarbert should steer with the south-eastern extremity of Eilean Tràighe in line with Rubh' a' Bhàrr Ruaidh, bearing about 037° , until Ardpatick point is in line with the extremity of the land north-westward, bearing about 324° . 40 Thence she should steer for Dun Skeig, an isolated hill, 468 feet (142^m6) high, on the south-eastern shore, abreast Eilean Tràighe, and on which is a vitrified fort, bearing 074° , until within about 2 cables of the shore ; whence she should follow the south-eastern shore, at a distance of from $1\frac{1}{2}$ to 2 cables, until close to Portachoillan pier. 45 Thence she should steer for Ardpatick house, $7\frac{1}{2}$ cables north-north-westward of Portachoillan pier, bearing about 349° , until within about 2 cables of the shore under Cnoc a' Mhòr shir. From abreast this hill the vessel should follow the north-western shore at a prudent distance until abreast Sgeir Mhein, whence a mid-channel course can be steered 50 through Dunmore narrows.

From abreast Dunmore the vessel should steer for Eilean Eòghainn, with Corran point bearing about 227° , astern, and seen midway between the narrows of Dunmore.

Chart 2477.

Above Eilean Eoghainn the channel becomes contracted and gradually shoals, but vessels of 15 feet (4^m6) draught can ascend to Eilean da Ghallagain, and those of 9 feet (2^m7) draught to the head 5 of the loch.

It would be advisable for a stranger to enter the loch at half-tide, when the reefs awash at high water would be visible, rather than at high water.

Charts 2326, 2159, 2515.

10 SOUND OF JURA.—This sound, which lies between the western side of Peninsula of Kintyre and the eastern side of Jura, is entered, from southward, between Ardpatick point (*Lat. 55° 46' N., Long. 5° 37' W.*) and Rubha na Tràille (page 42), 12 miles westward. The sound presents no difficulties to navigation.

15 Tidal streams.—In mid-channel in the southern part of Sound of Jura, the north-going stream begins +0600 Oban (+0030 Dover), and the south-going stream begins II.W. Oban (-0530 Dover); the spring rate in each direction increases from about 2 knots at the southern entrance to from 3 to 3·5 knots near Skervuile, and the rather irregular 20 streams in the southern entrance become gradually more regular, and more nearly rectilinear, nearer Skervuile.

The streams close inshore on either side begin to run about one hour earlier than in mid-channel.

In mid-channel between Skervuile and Ruadh sgeir the north-going 25 stream begins about +0540 Oban (+0010 Dover), and the south-going stream begins -0040 Oban (-0610 Dover); spring rate in each direction is from 4 to 4·5 knots. Off the eastern shore of the channel the streams begin about 1½ hours earlier, and off the western shore about three-quarters of an hour earlier, than in mid-channel. Towards the 30 northern end of the sound, off Ruadh sgeir, the streams also begin considerably earlier than in mid-channel in the sound generally.

On the eastern side of the sound, between Ardpatick point (*Lat. 55° 46' N., Long. 5° 37' W.*) and Point of Knap, the spring rate of the stream in each direction is about 2 knots.

35 Between Point of Knap and Rubha na Cille, the north-going stream begins +0450 Oban (-0040 Dover), the south going stream begins -0110 Oban (+0545 Dover). The north-going stream runs, from off Point of Knap, across the entrance to Loch Sween, past and between MacCormaig isles, to off Rubha na Cille; the spring rate is about 1·5 40 knots off Point of Knap, about 3 knots south-westward and westward of Eilean Mòr and between the isles, 3·5 knots between Eilean Ghamhna and the mainland, and 3 knots off Rubha na Cille. The south-going stream runs in about the opposite directions; the spring rate is about 3 knots off Rubha na Cille, about 4 knots south-westward of 45 Eilean Mòr and between the isles, 2·5 knots between Eilean Ghamhna and the mainland, and 1·5 knots off Point of Knap. An eddy runs strongly north-eastward off the southern coast of Eilean Mòr during the south-going stream, and there are eddies round the isles generally, during the streams in both directions; overfalls and races occur 50 when the streams are running strongly.

In the entrance to Loch Sween the in-going stream begins about +0550 Oban (+0020 Dover), and the out-going stream begins about -0030 Oban (-0600 Dover); the spring rate in each direction is from

Charts 2326, 2159, 2515.

one to 1·5 knots. The streams lose strength rapidly inside the entrance and are imperceptible in the loch, but in-going and out-going streams run strongly in the narrow entrances to Linne Mhurich and Caol Scotnish.

Between Rubha na Cille and the coast eastward of Ruadh sgeir the north-going stream begins +0425 Oban (-0105 Dover), the south-going stream begins -0155 Oban (+0500 Dover); the spring rate in each direction is from 3 to 4 knots.

About a quarter of a mile offshore the streams run in the direction 10 of the coast but there are eddies nearly everywhere near the land: Thus, between Leth sgeir and the islets north-north-eastward of it, and the mainland, an eddy runs northward during the south-going stream; eddies run southward during the north-going stream, and northward during the south-going stream, across the entrance to 15 Carsaig bay; other eddies may also be experienced.

About three-quarters of a mile to seaward of the eastern coast of Jura near Small isles, the north-going stream begins +0545 Oban (+0015 Dover), the south-going stream begins -0015 Oban (-0545 Dover); the spring rate in each direction is about one knot, increasing 20 eastward to from 3 to 3·5 knots in mid-channel in the southern part of Sound of Jura. Between The Small isles and the coast of Jura the north-going stream runs in southward of Eilean nan Gabhar and out northward of Eilean Bliride, the south-going stream runs in the opposite direction; the north-going stream begins +0400 Oban 25 (-0130 Dover), the south-going stream begins -0225 Oban (+0430 Dover).

Farther northward, off Lussa bay, the north-going stream begins +0455 Oban (-0035 Dover), the south-going stream begins -0125 Oban (+0630 Dover).

Off this coast generally the streams run in the direction of the coast; they are weak close inshore but their rates increase farther to seaward.

In the channel eastward of Ruadh sgeir, the north-going stream begins +0400 Oban (-0130 Dover), the south-going stream begins -0205 Oban (+0450 Dover); the spring rate in each direction is 35 about 4 knots.

Near the land on the eastern side of the channel the streams run in the direction of the coast and across the entrance to Loch Crinan. In mid-channel the north-going stream runs in about the direction of the channel, but, off Eilean nan Coinean (*Lat. 56° 07' N., Long. 5° 35' 40 W.*), on the northern side of the entrance to Loch Crinan, it turns north-westward and westward and runs through Dorus Mòr; the east-going stream from Dorus Mòr runs in the opposite direction, turning south-eastward and southward off Eilean nan Coinean. The east-going stream from Dorus Mòr forms an eddy, which turns westward in about mid-channel off Loch Crinan and runs northward along the eastern side of the islets from Eilean na h-Eairne to Garbh Rèisa. On the western side of the channel the streams run between and across the rocks and reefs and between the islets from Ruadh sgeir to Garbh Rèisa, in directions to and from the Gulf of Corry- 45 vreckan.

In Dorus Mòr the west-going stream begins +0330 Oban (-0200 Dover), the east-going stream begins -0215 Oban (+0440 Dover); the spring rate in each direction is from 4 to 5 knots. During the west-

Charts 2326, 2159, 2515.

going stream an eddy sets eastward along the northern shore, and there are heavy overfalls between the stream and the eddy ; the east-going stream runs strongest on the southern side of the channel, and is relatively weak between mid-channel and the northern shore. From Dorus Mòr the west-going stream runs mostly between Coiresa and Rèisa an t-Sruith to the Gulf of Corryvreckan, but a relatively weak branch runs northward between Rèisa Mhic Phaidean and the mainland, and another weak branch runs south to the westward of Garbh Réisa, forming a south-going eddy during the north-going stream in the channel westward of Ruadh sgeir (*see below*), and then turns north-westward and rejoins the main stream between Coiresa and Rèisa an t-Sruith. The east-going stream from the Gulf of Corryvreckan runs between Coiresa and Rèisa an t-Sruith and is joined by the south-going stream from between Rèisa Mhic Phaidean and the mainland ; a weak branch runs south to the westward of Garbh Réisa, but the main body of the stream continues eastward through Dorus Mòr.

The streams in the channels among the islets and rocks between Garbh Réisa and Ruadh sgeir run in directions to and from the Gulf of Corryvreckan ; the spring rate in each direction is up to about 4 knots. Eddies and heavy overfalls occur near the islets and rocks.

In the channel westward of Ruadh sgeir the streams run in directions to and from the Gulf of Corryvreckan ; the times at which they begin are not known, and probably differ considerably in different parts of the channel, but, on the average, the north-going stream appears to begin about +0430 Oban (-0100 Dover), and the south-going stream about -0150 Oban (+0505 Dover). The streams run strongly on the eastern side of the channel from and to the channels between the rocks northward of Ruadh sgeir, but appear to be weak near the coast of Jura. During the north-going stream (west-going stream in Dorus Mòr) an eddy runs southward along the western side of Garbh Réisa, but turns westward and north-westward to the west of Eilean na Cille and rejoins the main stream between Coiresa and Rèisa an t-Sruith ; during the south-going stream an eddy runs northward along the Jura coast between Port an Tiobairt and Sgeir na Maoile (*Lat. 56° 07' N., Long. 5° 37' W.*).

A weak branch of the west-going stream from Dorus Mòr runs southward past the western side of Garbh Réisa (forming a south-going eddy during the north-going stream in the channel westward of Ruadh sgeir), and turns westward and north-westward and rejoins the main stream between Coiresa and Rèisa an t-Sruith ; a weak branch of the east-going stream also runs southward past the western side of Garbh Réisa. Except for these streams, there is no connection between the streams in this area and those in the channel westward of Ruadh sgeir.

In the area comprised between Garbh Réisa, the north-eastern coast of Jura, Rubha da Una, Rubh Aird, Luing, Shuna point, Eilean Ona and Craignish point, the west-going stream from Dorus Mòr runs mostly between Coiresa and Rèisa an t-Sruith to the Gulf of Corryvreckan ; a relatively weak branch of the stream, however, runs northward between Rèisa Mhic Phaidean and the mainland, and this branch divides and runs to the Sound of Luing and Loch Shuna ; the Loch Shuna branch again divides and runs to Loch Shuna and Shuna sound. A relatively weak branch of the main stream, after passing between Coiresa and Rèisa an t-Sruith, runs northward to

Charts 2326, 2159, 2515.

the Sound of Luing. The streams in the opposite directions, from the Gulf of Corryvreckan, the Sound of Luing, Shuna sound and Loch Shuna, meet, and run eastward through Dorus Mòr ; lines of ripples or overfalls extending south-eastward from Rubha da Una and southward from Rubh Ard Luing indicate the meeting of the Gulf of Corryvreckan and the Sound of Luing streams, and of the Sound of Luing and Loch Shuna streams. 5

In the above-mentioned area the streams turn nearly simultaneously ; they begin to run in westerly and northly direction away from Dorus Mòr, +0345 Oban (-0145 Dover), and begin to run in easterly and southerly direction towards Dorus Mòr, -0215 Oban (+0440 Dover) ; the rates of the streams differ greatly in all parts of the area, and eddies, races and overfalls occur where they are strong. Between Coiresa and Rèisa an t-Sruith spring rate in both directions is 15 about 5 knots ; during the west-going stream there is turbulence over the whole area between Dorus Mòr and Coiresa and Rèisa an t-Sruith ; the streams run very strongly to and from the Gulf of Corryvreckan and the rate in both directions increases towards the gulf ; the branch of this stream which runs to and from the Sound of Luing is relatively weak, about 2 knots at springs in each direction. In mid-channel between Rèisa Mhic Phaidean and the mainland the spring rate of the north-going stream is about 2 knots, and of the south-going stream about 3 knots ; during the north-going stream there is a race off the eastern side of Rèisa Mhic Phaidean and a south-going eddy along the mainland coast ; during the south-going stream overfalls extend across the northern end of the channel and southward along the mainland coast and across the entrance to Dorus Mòr. Farther northward the streams lose strength and the branches running to the Sound of Luing and Loch Shuna do not exceed from about one to 30 1·5 knots at springs in both directions ; a large eddy forms round Hutcheson rock. 20

Chart 2037, plan of The Small isles and Approaches.

Lights.—A light is exhibited, at an elevation of 30 feet (9^m1), from a white structure, 35 feet (10^m7) in height, situated on Na Cùiltean, about 2 miles east-north-eastward of Rhubha na Tràille. 35

A light is exhibited, at an elevation of 73 feet (22^m3), from a white tower, 83 feet (25^m3) in height, situated on Skervuile, a rock, about 4½ miles north-eastward of Na Cùiltean light-structure. 25

Chart 2326.

A light is exhibited, at an elevation of 44 feet (13^m4), from a white beacon, 26 feet (7^m9) in height, situated at the southern end of Ruadh sgeir, about 13½ miles north-north-eastward of Skervuile light. 40

A light is exhibited, at an elevation of 41 feet (12^m5), from a white cylindrical beacon on a concrete base, 18 feet (5^m5) in height, situated at the south-western end of Rèisa an t-Srnith, about 3½ miles northward of Ruadh sgeir light. 45

Charts 2477, 2159, 2515.

Dangers in the southern part of the sound.—Beacon.—Light-buoy.—Only the dangers in or near the fairway of the Sound of Jura 50 are described below ; those farther inshore are described with the anchorages and lochs on pages 166–175.

The shoals extending north-eastward from Gigha island (*Lat. 55° 44' N., Long. 5° 43' W.*) are described on page 154.

Charts 2477, 2159, 2515.

The depths on the eastern side of the Sound of Jura between Loch Stornoway and Loch Caolisport, about 6 miles northward, for a distance of $1\frac{1}{2}$ miles offshore, are very irregular. Although rocks do not extend beyond $1\frac{1}{2}$ cables offshore, the shore should not be closed to less than 3 cables.

Charts 2037, plan of The Small isles and Approaches, 2481.

Between Rubha na Tràille and Rubha na Caillich, $2\frac{1}{2}$ miles north-north-eastward, the western side of Sound of Jura is free from dangers ¹⁰ beyond 2 cables offshore, with the exception of Na Cùiltean.

Chart 2037, plan of The Small isles and Approaches.

Na Cùiltean, about $1\frac{1}{2}$ miles south-eastward of Rubha na Caillich, is a reef, partly above-water, marked by a light-structure; the highest rock has an elevation of 5 feet (1^m5). There is a channel, ¹⁵ about one mile wide, between this reef and the eastern side of Jura, but a shoal, with a depth of 7 fathoms (12^m8) over it, lies 8 cables westward of Na Cùiltean light-structure. Na Cùiltean is covered by the red sector of McArthur's Head light, between the bearings of 159° and 244° . A shoal, with a depth of $4\frac{1}{2}$ fathoms (8^m2) over it, lies ²⁰ about $1\frac{1}{2}$ miles north-north-eastward of Na Cùiltean light-structure.

From a position about $4\frac{1}{2}$ cables north-north-eastward of Rubha na Caillich, The Small isles extend about 2 miles north-north-eastward; these islets, in order from southward, are:—Eilean nan Gabhar, 89 feet (27^m1) high, Eilean nan Coinein, Eilean Diomhain, Pladda, and ²⁵ Eilean Bhride.

About $2\frac{1}{2}$ cables south-westward of the southern extremity of Eilean nan Gabhar, Liath sgeirean, a rocky spur, extends about $1\frac{1}{2}$ cables north-eastward from the coast and a shoal bank extends about three-quarters of a cable farther in the same direction; a black iron pillar ³⁰ surmounted by a ball marks the north-eastern edge of this bank. A patch, with a depth of $1\frac{1}{2}$ fathoms (2^m7) over it, lies one cable southward of the southern extremity of Eilean nan Gabhar; it has not been examined.

Goat rock, about $2\frac{1}{2}$ cables east-north-eastward of the southern ³⁵ extremity of Eilean nan Gabhar, dries one foot (0^m3).

The iron pillar marking Liath sgeirean, bearing 260° and open southward of Eilean nan Gabhar, leads close southward of Goat rock, and Eilean Diomhain in line with Cnoc Soilleir, a hill 293 (89^m3) high, $1\frac{1}{2}$ miles north-north-eastward, bearing 021° , leads close eastward of ⁴⁰ it.

There is a narrow channel between Eilean nan Gabhar (*Lat. $55^\circ 50' N.$, Long. $5^\circ 56' W.$*), on the south, and Eilean nan Coinein and Pladda on the north.

The south-eastern side of Eilean Bhride is almost steep-to, but a ⁴⁵ bank, with depths of less than 3 fathoms (5^m5) over it, extends half a cable southward, $1\frac{1}{2}$ cables westward and one cable northward from this islet. There is a narrow channel northward of Eilean Bhride, with depths of from 3 to $4\frac{1}{2}$ fathoms (5^m5 to 8^m2).

A shoal, with a depth of $3\frac{1}{2}$ fathoms (6^m4) over it, lies about $1\frac{1}{2}$ miles east-south-eastward of Eilean Bhride.

Nine-foot rock, about $1\frac{1}{2}$ miles north-eastward of Eilean Bhride and about 3 cables south-south-eastward of the north-eastern entrance point of Lowlandman's bay, has a least depth of 9 feet (2^m7) over it, and is marked on its southern side by a light-buoy, painted red and

Charts 2037, plan of The Small isles and Approaches, 2481.
white in horizontal bands, and exhibiting a white group flashing light
every ten seconds.

The north-eastern fall of Cnoc Soilleir in line with the south-western shoulder of Beinn an Oir (page 147), bearing 292° , leads close southward of Nine-foot rock ; and the summit of Eilean nan Gabhar in line with Crackraig hill, 409 feet ($124^{m}7$) high, and situated $1\frac{1}{2}$ miles south-westward, bearing 220° , leads about $1\frac{1}{2}$ cables south-eastward of it. These clearing marks can only be used in clear weather, and a stranger might not be able to identify them. 10

Skervuile, about 2 miles eastward of the eastern entrance point of Lowlandman's bay, is an above-water and sunken reef, marked by a light-beacon.

Chart 2326.

On the eastern side of the Sound of Jura, rocks extend about 4 cables westward and $5\frac{1}{2}$ cables north-westward of Point of Knap, the north-western entrance point of Loch Caolisport. A bank, with a depth of 7 fathoms ($12^{m}8$) over it, lies about one mile south-westward of Point of Knap. Bow of Knap, about $3\frac{1}{2}$ cables west-south-westward of Point of Knap, is awash ; about three-quarters of a cable south-eastward of Bow and Knap is Back Bow, a rock with a depth of less than 6 feet ($1^{m}8$) over it. Ruadh na Brogg, about 5 cables west-north-westward of Point of Knap, has a depth of less than 6 feet ($1^{m}8$) over it. Between Ruadhi na Brogg and the eastern shore is Glas eilean, a rocky islet, 22 feet ($6^{m}7$) high, connected with the shore by a reef. 25

The eastern extremity of Eilean nan Leac, about 2 miles north-north-westward of Point of Knap (*Lat. $55^{\circ} 53' N.$, Long. $5^{\circ} 41' W.$*), in line with Danna na Cloiche (Danna house), $1\frac{1}{2}$ miles farther northward, bearing about 004° , leads close westward of the dangers westward of Point of Knap. 30

Carraig an Daimh (page 164), bearing not less than 338° , and open westward of the southern extremity of Corr eilean in the MacCormaig group, leads south-westward of Bow of Knap and the dangers in the vicinity. 35

MacCormaig isles, about $2\frac{1}{2}$ miles north-westward of Point of Knap, are a group of grassy islets and rocks. Eilean Mòr, the westernmost and largest of this group, has, near its southern end, a mound surmounted by a broken cross, and near the middle the ruins of an ancient chapel. Two detached rocks, 13 feet ($4^{m}0$) high, extend about 2 cables south-westward from the south-western end of Eilean Mòr, and a rocky ledge, with depths of less than 6 fathoms ($11^{m}0$) over it, extends about 5 cables northward from the northern extremity of the island. Rocks, with depths of less than 6 feet ($1^{m}8$) and 3 fathoms ($5^{m}5$) over them, lie about half a cable east-south-eastward and 2 cables south-eastward, respectively, of the north-eastern extremity of the island. At the northern end of the island is an indentation, sheltered from all but northerly winds, which is much used as an anchorage by fishermen from Gigha. 45

Corr eilean and Eilean Ghàmhna, the two inner islets of the group, lie close together, and are separated from Eilean Mòr by a passage 3 cables wide. The depths in this passage are very irregular and eddies are formed by the strong tidal streams ; the centre of the passage, at the northern end, is obstructed by Corr rocks, with depths of less

Chart 2326.

than 6 feet (1^m8) over them, situated about 3 cables westward of the northern extremity of Corr Eilean ; the passage is not recommended to vessels without local knowledge. Rocks, with depths of 8 and 12 5 feet (2^m4 and 3^m7) over them, lie about one cable northward and $2\frac{1}{2}$ cables north-north-westward, respectively, of the northern extremity of Corr eilean and depths of less than 6 fathoms (11^m0) extend about 4 cables northward from the same point.

Point of Knap, bearing 143° and open south-westward of the 10 southern extremity of Corr eilean, leads close south-westward of Corr rocks.

The eastern shore of Sound of Jura northward of MacCormaig isles as far as Loch na Cille, about $1\frac{1}{2}$ miles northward, is foul for about 15 3 cables offshore ; Danna rock, about $8\frac{1}{2}$ cables northward of the northern extremity of Corr eilean and 3 cables offshore, has a least depth of 5 feet (1^m5) over it ; Keills rock, about 9 cables northward of the northern extremity of Corr eilean and about $4\frac{1}{2}$ cables offshore, has a least depth of 4 feet (1^m2) over it.

The southern extremity of Eilean nan Leac, about 7 cables eastward 20 of Corr eilean, in line with the 285-foot (86^m9) summit, about $3\frac{1}{2}$ cables north-eastward of Point of Knap, bearing about 149° , leads between the dangers northward of Corr eilean and those south-westward of the southern end of Island of Danna. The limekiln house on the western extremity of Island of Danna, about 2 miles north-north-eastward of 25 the northern extremity of Corr eilean, in line with the western extremity of Liath eilean, situated $1\frac{1}{2}$ miles north-north-eastward of the northern extremity of Corr eilean, bearing 029° , leads between Danna and Keills rock. The extremity of the land northward of Rubba na Cille (*Lat. $55^\circ 57' N.$, Long. $5^\circ 43' W.$*), the north-western entrance 30 point of Loch na Cille, bearing 021° and open westward of Rubba na Cille, leads about $2\frac{1}{2}$ cables westward of Keills rock.

Carraig an Daimh (Carraig nan Damb), about one mile westward of Rubba na Cille, is the larger and western of two rocky islets, which are separated by a narrow channel with depths of from 2 to 7 fathoms (3^m7 35 to 12^m8). A rock, awash, lies close off the northern extremity of Carraig an Daimh ; the smaller islet is fringed, except on its eastern side, by a reef.

Dangers in the northern part of the sound.—At about 4 miles north-north-eastward of Rubba na Cille is Leth (Liath) sgeir, a rocky 40 islet from which a chain of islets and rocks extends about $1\frac{1}{2}$ miles north-north-eastward ; the western side of this chain is steep-to, with the exception of a rock awash lying close off the north-western side of Eilean Dubh, about $1\frac{1}{2}$ miles north-north-eastward of Leth sgeir, from which depths of less than 3 fathoms (5^m5) extend about three-quarters 45 of a cable northward. Between this chain and the mainland eastward is a narrow and intricate channel, which can be used by small vessels with local knowledge.

Carsaig island, which is situated about $3\frac{1}{2}$ cables north-north-eastward of the northern end of the chain of islets just described, 50 is a narrow island lying about $1\frac{1}{2}$ cables offshore. Ruadh Mòr rock, about 2 cables north-north-eastward of the northern extremity of Carsaig island and about one cable offshore, is awash. Between Carsaig island and the mainland there is a narrow and intricate channel.

A shoal, with a depth of $1\frac{1}{2}$ fathoms (3^m2) over it, lies about 2 miles.

Chart 2326.

westward of Ruadh Sgeir light-beacon and about $2\frac{1}{2}$ cables from the western shore of Sound of Jura. The north-eastern extremity of Jura in line with Druim na Dubh Ghlaic (page 185), about 7 miles north-eastward, bearing 023° , leads about 2 cables south-eastward of this rock. 5

Ruadh sgeir, about $1\frac{1}{2}$ miles north-north-westward of the northern end of Carsaig island, is one of a group of rocky islets, and is marked by a light-beacon ; a shoal, with a depth of $1\frac{1}{2}$ fathoms (2^m7) over it, lies about $1\frac{1}{2}$ cables south-westward of Ruadh Sgeir light-beacon. 10 From Ruadh sgeir rocky ledges extend about $1\frac{1}{2}$ miles north-north-eastward ; a rock, awash, and two rocks, with depths of less than 6 feet (1^m8) over them, lie about $3\frac{1}{2}$ cables north-eastward of Ruadh sgeir. South rock, about $8\frac{1}{2}$ cables north-eastward of Ruadh Sgeir light-beacon, has a least depth of $2\frac{1}{2}$ fathoms (4^m6) over it ; North 15 rock, near the northern end of this cbain, about $1\frac{1}{2}$ miles north-north-eastward of Ruadh Sgeir light-beacon, has a least depth of $1\frac{1}{2}$ fathoms (3^m2) over it ; there is a rock, with a depth of $3\frac{1}{2}$ fathoms (6^m9) over it, about $1\frac{1}{2}$ miles north-north-eastward of Ruadh Sgeir light-beacon. 20

The channel between the shoal banks, which, with depths of less than 5 fathoms (9^m1) extend northward from North rock and southward from Eilean na h-Eairne (Eairne rock), $1\frac{1}{2}$ miles north-north-eastward, is free from dangers.

Craignish castle, $5\frac{1}{2}$ miles north-north-eastward of Ruadhi Sgeir 25 light-beacon, bearing 032° , and just open north-westward of Craignish point (*Lat. $56^\circ 08' N.$, Long. $5^\circ 36' W.$*), $1\frac{1}{2}$ miles south-south-westward of the castle, leads about half a mile north-westward of the chain of rocks just described. The south-western extremity of Craignish point in line with the western side of the islets lying about $1\frac{1}{2}$ miles south- 30 south-westward of the point, bearing 016° , leads about $1\frac{1}{2}$ cables eastward of South rock. The conspicuous house at Crinan, bearing 098° and open northward of Ardnoe point, the promontory half a mile westward of Eilean da Mhèinn, leads northward of Ruadh Sgeir ledges. 35

At night, after passing Skervuile light, a vessel should steer with it bearing 204° , astern, which leads between the rocky ledges described above and the eastern side of Jura, passing about 9 cables westward of Carraig an Daimh and about $4\frac{1}{2}$ cables westward of Ruadh Sgeir light-beacon. 40

Garbh Rèisa (Garraeasar), the northerm extremity of which is situated about $3\frac{1}{2}$ cables south-south-westward of Craignish point, attains an elevation of 145 feet (44^m2). From the southern end of Garbh Rèisa a chain of islets and rocks extends about $8\frac{1}{2}$ cables south-south-westward. Eilean na h-Eairne lies at the southern end of this chain, and a reef, which dries 2 feet (0^m6), is situated about one cable eastward of it. Sgeir na Maoile (Maoile rock), 3 feet (0^m9) high, lies about 4 cables west-south-westward of the southern extremity of Garbh Rèisa in the centre of a narrow reef, extending about 4 cables parallel with the cbain of islets extending south-south-westward of the southern 50 end of Garbh Rèisa ; this reef is steep-to, and there is a deep channel between it and Garbh Rèisa group.

Dorus Mòr, the channel northward of Garbh Rèisa, is deep ; a patch, with a depth of 3 fathoms (5^m5) over it, lies about one cable

Chart 2326.

southward of Craignish point. The tidal streams in this channel are very strong (see page 161).

A shoal, about $5\frac{1}{2}$ cables north-westward of Sgeir na Maoile, has a least depth of $4\frac{1}{2}$ fathoms ($8^{\text{m}}2$) over it. Shuna white cottage, about $4\frac{1}{2}$ miles northward of Craignish point, bearing 008° , and just open westward of Coiresa (Corr-easar), an islet $8\frac{1}{2}$ cables north-north-westward of the south-western extremity of Craignish point, leads through the fairway between this shoal and Sgeir na Maoile. See 10 view facing page 155.

Rèisa an t-Sruith, on the south-western end of which is a light-beacon, lies about one mile westward of Craignish point (Lat. $56^\circ 08' N.$, Long. $5^\circ 36' W.$), and attains an elevation of 80 feet ($24^{\text{m}}4$). A reef, which dries 2 feet ($0^{\text{m}}6$) in places, extends about three-quarters of 15 a cable southward from the southern end of this island.

Maol eilean, close off the north-eastern end of Jura, is a small above-water rock.

Chart 2477.

ANCHORAGES AND LOCHS IN SOUND OF JURA.—Ceann 20 an-t-sailein and Loch Stornoway.—Ceann an-t-sailein and Loch Stornoway are entered about three-quarters of a mile and $1\frac{1}{2}$ miles northward, respectively, of Ardpatrick point (page 155).

Ceann an-t-sailein, a small bight open westward, is constricted by a chain of rocks which dry and extend halfway across from the southern 25 shore.

Loch Stornoway, to enter which it is dangerous for vessels without local knowledge, is about $3\frac{1}{2}$ cables wide; the head of the loch dries out about $1\frac{1}{2}$ cables. Sgeir Choigreach is a group of rocks lying about 30 2 cables westward of the south-eastern entrance point of the loch; Montgomerie rocks, with depths of less than 6 feet ($1^{\text{m}}8$) over them, lie $1\frac{1}{2}$ cables off the north-western side of the entrance.

Chart 2326.

Loch Caolisport.—Islands and dangers.—Loch Caolisport is entered south-eastward of Point of Knap (page 163); its head dries 35 out about half a mile. The south-eastern shore of the loch is free from dangers beyond $1\frac{1}{2}$ cables offshore as far north-eastward as Eilean a 'Mhadaidh (Maaey), a grassy islet situated close off the south-eastern shore, about $1\frac{1}{2}$ miles from the head of the loch.

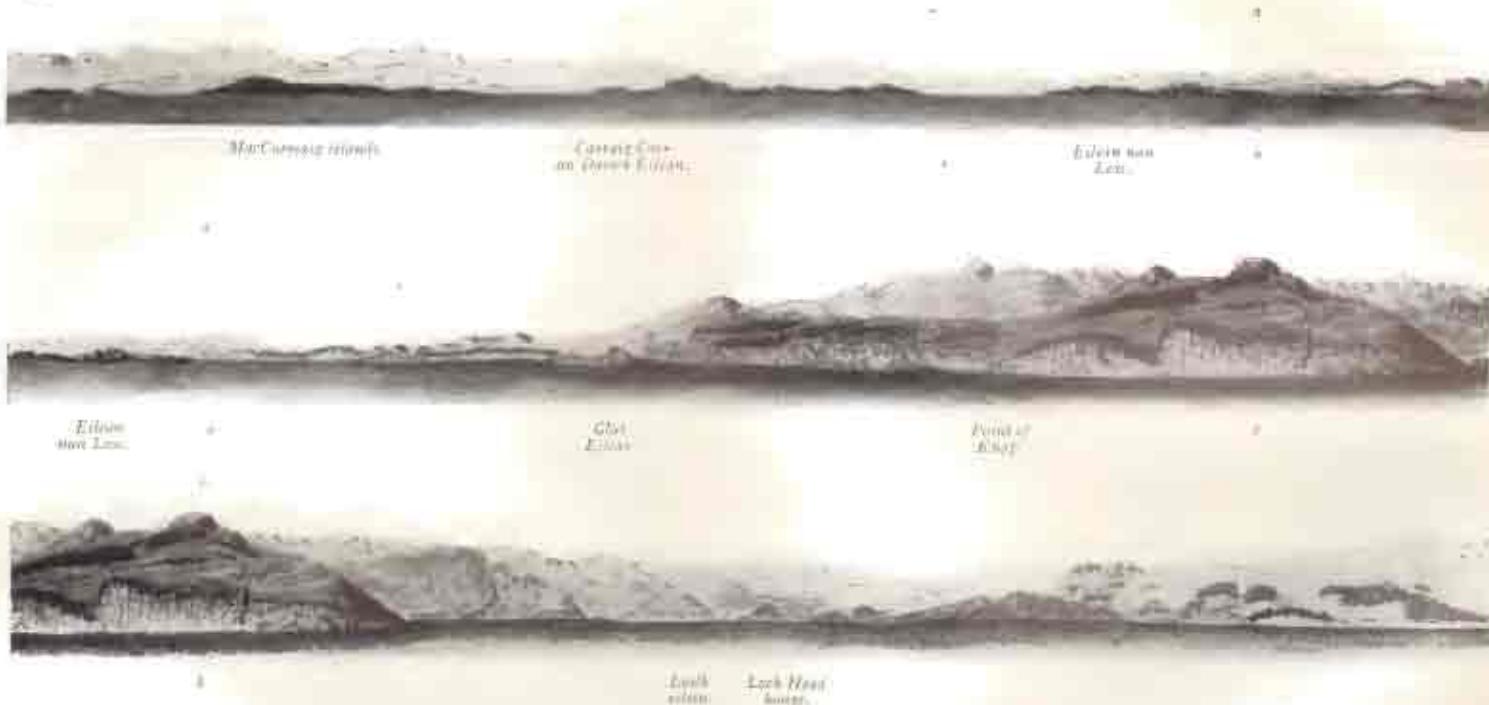
Point of Knap, though steep-to on its southern side, has several 40 rocks westward and north-westward of it, described on page 163. A shoal, with a depth of 6 fathoms ($11^{\text{m}}0$) over it, lies about $7\frac{1}{2}$ cables southward of the point.

Liath eilein, about 7 cables east-north-eastward of Point of Knap, is a rocky islet about 2 cables from the north-western shore of the 45 loch. Foul ground extends about $1\frac{1}{2}$ cables south-south-westward from the south-western end of Liath eilein; about one cable eastward of the south-western extremity of Liath eilein is a rock, which dries. About three-quarters of a cable eastward of the north-eastern extremity of Liath eilein is a detached rock, with a depth of 4 feet ($1^{\text{m}}2$) over it, 50 and about half a cable westward of the same point is an above-water rock.

Lochead house, a large white building at the head of the loch, in line with the south-eastern rock of Liath eilein, bearing about 046° ,



To face page 161.



View, in three parts, of Loch Head house in line with the south-eastern point of Loath eilein, bearing 046°.
(Original dated 1807.)

Chart 2326.

leads south-eastward of the southernmost danger southward of Point of Knap. See view facing this page.

Eilean Tràighe is the name of two grassy islands ; one, 19 feet ($5^{\text{m}}8$) high, lies about one cable from the south-eastern shore of the loch and about $1\frac{1}{2}$ miles eastward of the south-western extremity of Liath eilein ; the other is situated about $4\frac{1}{2}$ cables north-eastward of the north-eastern extremity of Liath eilein and close to the north-western shore of the loch. Both these islands are joined to the mainland at low water, the former by a natural causeway of sand and boulders, 10 and the latter by boulders which dry.

Lach Caolas, situated in the fairway of the loch, about $6\frac{1}{2}$ cables eastward of the north-eastern extremity of Liath eilein, has a least depth of $2\frac{1}{2}$ fathoms ($4^{\text{m}}6$) over it. A rock, with a depth of 4 fathoms ($7^{\text{m}}3$) over it, lies about 2 cables northward of Lach Caolas. Lochead 15 house in line with the point of land about $1\frac{1}{2}$ cables south-westward of Eilean a 'Mhadaidh, bearing about 038° , leads about $2\frac{1}{4}$ cables south-eastward of Lach Caolas.

Eilean nam Muc, a grassy islet, lies close off the north-western shore of the loch about one mile north-eastward of the north-eastern extremity 20 of Liath eilein ; a detached rock, about 3 feet ($0^{\text{m}}9$) high, lies close eastward, and two rocks, with depths of less than 6 feet ($1^{\text{m}}8$) over them, lie about three-quarters of a cable eastward of the islet. A rock, with a depth of 4 fathoms ($7^{\text{m}}3$) over it, lies in the fairway about $9\frac{1}{2}$ cables north-eastward of Eilean nam Muc. Eilean Fada, a grassy 25 island, lies about $1\frac{1}{2}$ miles north-eastward of Eilean nam Muc. Eilean na h-Uainhaidh (na Huamh) is situated about $2\frac{1}{2}$ cables north-north-westward of Eilean Fada and about one cable from the north-western shore ; foul ground extends about one cable south-westward from its southern end. 30

Anchorages In Loch Caolisport.—Loch Caolisport is exposed to southerly winds, and should be only used by vessels requiring temporary anchorage. Suitable depths may be found almost anywhere in the loch, but the best anchorage for small vessels is at the head of the loch, about $4\frac{1}{2}$ cables north-eastward of the north-eastern end of 35 Eilean Fada (*Lat. $55^{\circ} 55' N.$, Long. $5^{\circ} 36' W.$*), in depths of from $2\frac{1}{2}$ to $3\frac{1}{2}$ fathoms ($4^{\text{m}}1$ to $8^{\text{m}}4$), sand.

Small vessels can also obtain good temporary anchorage in Muileann Eiteag bàgh (Mulean Eiteig bay), the bight on the north-western shore close westward of Eilean Tràighe, with shelter from westerly 40 winds, in depths of from $2\frac{1}{2}$ to 5 fathoms ($4^{\text{m}}6$ to $9^{\text{m}}1$).

Tidal streams.—The streams in Loch Caolisport are unperceptible.
Chart 2037, plan of The Small isles and Approaches.

Lights.—**Bay of Small Isles.**—Bay of Small isles, on the western side of the Sound of Jura, close westward of The Small isles (page 162) 45 affords anchorage to vessels of moderate draught in its northern part.

A pier at Craighouse, about $4\frac{1}{2}$ cables westward of the southern extremity of Eilean nan Gabhar, has a depth of about one fathom ($1^{\text{m}}8$) at its head at high water. There is another pier about 3 cables west-south-westward of the same point. 50

A light is occasionally exhibited from each of the two corners of the head of the former pier.

There is regular communication by sea with Glasgow and West Loch Tarbert. Small quantities of provisions are obtainable.

Chart 2037, plan of The Small isles and Approaches.

Anchorage.—Directions.—Small vessels can obtain good anchorage about $2\frac{1}{2}$ cables north-north-westward of the south-western extremity of Eilean nan Gabhar, in depths of from $2\frac{1}{2}$ to 3 fathoms 5 (4^m0 to 5^m5) ; the bottom, sand and gravel, is covered in many places with grass, which renders it necessary, especially in winter, to guard against the anchor dragging.

The best approach to this anchorage is between the southern end of Eilean nan Gabhar and the iron pillar marking Liath sgcirean 10 (page 162) ; the least depth in the fairway is $2\frac{1}{2}$ fathoms (5^m0).

A vessel proceeding northward through Bay of Small isles can pass through a narrow channel between the western side of Pladda and the foul ground extending about $3\frac{1}{2}$ cables from Jura. The western extremity of Eilean nan Gabhar in line with Rubha na Caillach, the 15 southern entrance point of Bay of Small isles, bearing 188° , leads through this channel in a least depth of $2\frac{1}{2}$ fathoms (4^m1).

Life-saving.—A line-throwing apparatus is maintained at Craighouse, about half a mile westward of the southern end of Eilean nan Gabhar ; see page 9.

20 **Lowlandman's bay.—Dangers.**—Between the northern entrance point of Bay of Small isles and Sròn Garbh, about $6\frac{1}{2}$ cables north-north-eastward, the coast is fronted by rocky islets and a shoal bank extending about $1\frac{1}{2}$ cables offshore. Lowlandman's bay is entered between Sròn Garbh and Rubh' an Lèim, about $2\frac{1}{2}$ cables east-north- 25 eastward. On the eastern shore of the bay, about 8 cables north-eastward of Sròn Garbh, is the lighthouse establishment for Skervuile.

Lowlandman's bay is a refuge in westerly gales, but, although the best anchorage on the eastern coast of Jura, it is exposed to southerly winds, and with northerly winds fierce squalls are experienced.

30 **The head of Lowlandman's bay** dries out about one cable, and a bank, with depths of less than 3 fathoms (5^m5) over it, extends a further 2 cables southward and about $1\frac{1}{2}$ cables from both sides of the bay.

Nine-foot rock, $2\frac{1}{2}$ cables south-south-eastward of Rubh' an Lèim 35 (*Lat. $55^\circ 53' N.$, Long. $5^\circ 53' W.$*), and the light-buoy marking it, are described on page 162. A shoal, with a depth of $5\frac{1}{2}$ fathoms (9^m6) over it, lies $2\frac{1}{2}$ cables south-eastward, and a shoal, with a depth of $5\frac{1}{2}$ fathoms (10^m5) over it, $1\frac{1}{2}$ cables eastward of Rubh' an Lèim.

There is anchorage about 4 cables north-north-westward of Rubh' 40 an Lèim, in a depth of about $4\frac{1}{2}$ fathoms (8^m7), good holding ground.

If the clearing marks for Nine-foot rock (see page 162) cannot be identified, a vessel should approach Lowlandman's bay from southward, steering for Rubh' an Lèim, bearing 003° , which leads about $1\frac{1}{2}$ cables westward of Nine-foot rock, to within about one cable of 45 the point, she should thence steer in mid-channel for the anchorage.

Chart 2326.

Kilmory bay.—Kilmory bay, entered about three-quarters of a mile northward of Point of Knap (page 163), is not suitable for anchorage as it is exposed to westerly winds.

50 **Loch Sween.**—Loch Sween is entered close northward of Kilmory bay ; about $3\frac{1}{2}$ miles within its entrance, on its north-western side, is the entrance to Linne Mhuirich (Linne Vurich), a shallow inlet close off the entrance to which is Taynish island, 40 feet (12^m2) high. See view facing page 155.

Chart 2326.

In the north-western side of the loch about $6\frac{1}{2}$ miles within its entrance, is a bight, from the head of which a narrow channel leads into Loch a' Bhealach, on the western shore of which stands the village of Tayvallich. From the northern side of the bight, Caol Scotnish, a ⁵ long and narrow arm, extends $2\frac{1}{4}$ miles north-north-eastward.

In the south-eastern side of the loch, about abreast the bight mentioned above, a landlocked inlet, on the south-eastern shore of which stands a hamlet, called Kilmichael of Inverlussa.

On the south-eastern shore of the loch, $3\frac{1}{2}$ miles north-north-eastward ¹⁰ of Point of Knap (*Lat. $55^{\circ} 53' N.$, Long. $5^{\circ} 41' W.$*), stand the ruins of Castle Sween.

Tidal streams.—The main tidal streams flow past the entrance to Loch Sween and within the loch they are negligible. Strong streams flow in and out of Linne Mhuirich and Caol Scotnish. ¹⁵

Sea level.—Owing to the narrow entrance to Loch Sween, the level of the sea inside is considerably affected by the force and direction of the wind, especially at neap tides, and at such times, a strong south-westerly wind may cause the level of the water inside the loch to rise although the tide is actually falling. ²⁰

Islets and dangers.—MacCormaig isles, off the entrance to Loch Sween, are described on page 163; a vessel can proceed on either side of these islands into Loch Sween.

Eilean nan Leac, about $1\frac{1}{2}$ miles north-north-westward of Point of Knap, is steep and rocky and lies about $3\frac{1}{2}$ cables on the eastern ²⁵ side of the southern channel into Loch Sween; Flat rock, about 2 cables south-eastward of the south-western extremity of Eilean nan Leac and $2\frac{1}{2}$ cables offshore, dries one foot (0^m3). Sgeir Beag, about $3\frac{1}{2}$ cables east-north-eastward of the south-western extremity of Eilean nan Leac and about $1\frac{1}{2}$ cables offshore, is 13 feet (4^m0) high; ³⁰ a shoal bank connects this rock with the shore; a reef extends about $1\frac{1}{2}$ cables south-westward from Sgeir Beag.

Danna and Keills rocks, on the northern side of the northern channel into Loch Sween, are described on page 164.

Eilean a' Chapuill (Eileanan Capull) is the northern islet of a group ³⁵ extending about 3 cables south-south-westward from the southern end of Island of Danna, on the north-western side of the entrance of Loch Sween. Sgeir Dhonncha is the southern islet.

Sgeir Bun an Locha (Lochfoot rock), about $4\frac{1}{2}$ cables eastward of the southern extremity of Eilean a' Chapuill, is the largest of a group ⁴⁰ of above-water rocks extending $1\frac{1}{2}$ cables south-south-westward from the north-western shore; a spit extends $1\frac{1}{2}$ cables southward from this rock. Between the southern end of this spit and Sgeir Dhonncha, about 4 cables westward, there are depths of from $2\frac{1}{2}$ to $4\frac{1}{2}$ fathoms (4^m6 to 8^m2). ⁴⁵

Midway between Sgeir Bun an Locha and Castle Sween the fairway of the loch is obstructed by a bar of stones and shell, with depths of from $3\frac{1}{2}$ to $4\frac{1}{2}$ fathoms (6^m4 to 8^m2) over it.

In the fairway, about 8 cables north-north-eastward of Castle Sween, is a bank, with a least depth of 23 feet (7^m0) over it; a shoal, ⁵⁰ with a depth of $4\frac{1}{2}$ fathoms (8^m2) over it, lies about $4\frac{1}{2}$ cables north-eastward of this bank.

Sgeirean a Mhain (Sgeir na Anma), lying in the fairway of the loch about 3 miles north-eastward of the north-western entrance point, is

Chart 2326.

a small rock one foot (0^m3) high ; a shoal bank extends about three-quarters of a cable south-westward from it, and $2\frac{1}{2}$ cables north-eastward of it is a rock, with a depth of $2\frac{1}{2}$ fathoms (5^m0) over it.

5 About $3\frac{1}{2}$ cables eastward of Sgeirean a Mhain and about three-quarters of a cable offshore, is a reef, which dries one foot (0^m3).

North-eastward of the above-mentioned $2\frac{1}{2}$ -fathom (5^m0) rocky shoal, there are no dangers in the fairway.

Eilean Loain lies with its southern extremity about $2\frac{1}{2}$ miles north-eastward of Sgeirean a Mhain ; it is 90 feet (27^m4) high and sparsely wooded ; the channel between it and the eastern shore is about one cable wide. Cala islet is grassy and lies about three-quarters of a cable westward of the northern end of Eilean Loain. A rock, with a depth of less than 6 feet (1^m8) over it, lies one cable east-south-eastward of the north-eastern extremity of Eilean Loain.

Between Eilean Loain and Rubha Cladh Èdin, about $2\frac{1}{2}$ cables north-eastward, there is a deep channel leading into the landlocked inlet described on page 169.

From Cala islet, Loch Sween continues north-eastward into Sailean Mhòr. The depths of Sailean Mhòr are generally considerable in the centre and towards the eastern shore, but off the western shore there are several rocks and shoal patches near the islands. A rock, with a depth of 10 feet (3^m0) over it, lies about $1\frac{1}{2}$ cables north-westward of Rubha Cladh Èdin (*Lat. $56^{\circ} 01' N.$, Long. $5^{\circ} 36' W.$*).

25 **Anchorages in Loch Sween.**—Small vessels can obtain good anchorage in the bight on the north-western side of Loch Sween about 6 miles north-north-eastward of the north-western entrance point of Loch Sween.

This bight is entered between Sròn Bheith and Rubh' an oib, about $30\frac{1}{2}$ cables north-north-eastward. From Sròn Bheith, a rocky ledge, with depths of from 4 to 6 fathoms (7^m3 to 11^m0) over it, extends about $1\frac{1}{2}$ cables northward to Oib rocks ; westward of this ledge vessels can obtain good anchorage, in depths of from $6\frac{1}{2}$ to $9\frac{1}{2}$ fathoms (11^m9 to 17^m4), mud, about one cable west-north-westward of Sròn Bheith.

35 The channel into Loch a' Bhealaich passes southward of a small grassy islet in the entrance to the cove and has a depth of 2 fathoms (3^m7). In the middle of Loch a' Bhealaich there is a group of rocks, the largest being 3 feet (0^m9) high, from which a shoal bank extends one cable southward ; about half a cable off the north-eastern side of **40** the cove is another rock, which dries. Small vessels can pass northward or southward of the group of rocks in the middle of the cove and anchor off Tayvallich village.

There is a quay at Tayvallich. Small quantities of provisions can be obtained.

45 In summer, a number of small craft anchor near the head of Caol Scotnisb ; the channel is very narrow and, at the south-western end, has a depth of only 8 feet (2^m4) ; the channel passes close westward of a rocky islet about $3\frac{1}{2}$ cables within the entrance ; about one mile within the entrance, and in the fairway, is a rock which dries.

50 Good anchorage can be obtained anywhere in the landlocked inlet on the north-eastern side of Loch Sween as far up as the village of Kilmichael of Inverlussa, in depths of from 6 to 12 fathoms (11^m0 to 21^m9), mud.

Directions.—A vessel can pass either south-eastward or north-

Chart 2326.

ward of the MacCormaig isles, but the former channel is the broader and straighter.

A vessel taking the southern channel should steer in mid-channel between Eilean nan Leac and Eilean Gharnha, and when entering Loch Sween keep on the south-eastern side of the loch to avoid Sgeir Bun an Locha. Sgeir Bun an Locha in line with the ruins of Castle Sween, bearing 039°, leads through the southern channel between Eilean Gharnha and Eilean nan Leac. 5

A vessel coming from northward should be careful to avoid Keills rock. The southern extremity of Eilean nan Leac in line with the 285-foot (86^m9) summit north-eastward of Point of Knap, bearing about 149°, leads through the northern channel into Loch Sween close northward of the dangers northward of Corr eilean and south-westward of Keills and Danna rocks, in a depth of about 5½ fathoms (10^m1). 10
15

In either channel, having passed the northern extremity of Eilean Gharnha (*Lat. 55° 55' N., Long. 5° 43' W.*), a vessel should steer with the southern extremity of Eilean Mòr bearing about 239°, astern, and just open southward of the southern extremity of Corr eilean, which leads south-eastward of the spit extending southward from Sgeir Bun an Locha. 20

When abeam of Sgeir Bun an Locha, she should steer with a conspicuous boulder, situated just within the high-water line on the western shore of the loch about 12 cables north-north-eastward of Sgeir Bun an Locha in line with the red roof of Old Ulva house, about 14 cables farther north-north-eastward, bearing 016°; which leads over the bar, in a depth of about 20 feet (8^m8). After crossing the bar, the vessel should steer parallel with and about 1½ cables off the western shore of the loch. After passing Sgeirean a Mhain the loch presents no difficulties to navigation. 30

Anchorages between Loch Sween and Loch Crinan.—Loch ba Cille is entered between the northern extremity of Liath eilean, situated 6½ cables north-north-westward of Eilean a' Chapuill, and Rubha na Cille, almost 3½ cables farther in the same direction; Liath eilean is connected by a reef with the western side of the Island of Danna. The head of the loch dries out about 7 cables. 35

Loch na Cille affords anchorage to moderate sized vessels about 6½ cables north-eastward of the southern extremity of Rubha na Cille, abreast the limekiln on the south-eastern shore, in a depth of about 4 fathoms (7^m3), sand and shells. This anchorage, though open south-westward, is protected from the swell during south-westerly winds by the strong tidal streams setting across the entrance to the loch (*see page 158*). 40

A vessel approaching Loch na Cille from southward should take care to avoid Keills rock (*page 164*). 45

Port Keills (*Lat. 55° 58' N., Long. 5° 43' W.*) is a shallow bight 9 cables north-north-eastward of Rubha na Cille. The entrance is obstructed by foul ground.

Sailean na h-Airde, about 1½ miles north-north-eastward of Port Keills, is a narrow inlet, with so many rocks in the entrance as to be inaccessible. 50

Carsaig bay is entered about 2 miles north-north-eastward of Sailean na h-Airde, between Eilean Tràighe, a heather-covered islet close

Chart 2326.

offshore, and Rubha na h-Airde Droighniche (aoid Droinigh), about 3½ cables north-eastward. It is open north-westward, but affords anchorage to small craft, with local knowledge, in a cove on the southern side of the entrance to this bay, about one cable east-south-eastward of the north-eastern extremity of Eilean Tràighe, in a depth of about 2 fathoms (3^m7). A vessel entering this anchorage should take care to avoid a rocky ledge extending about half a cable north-eastward and eastward from Eilean Tràighe, also a reef extending about 1½ cables south-westward from the southern extremity of Rubha na h-Airde Droighniche. The head of the bay is foul and is open westward and north-westward; it is not recommended as an anchorage. There is a small stone pier at the head of the bay.

A vessel approaching from southward along the Kintyre coast might mistake the bay close south-eastward of Eilean Tràighe for Carsaig bay, but Carsaig island, on the northern side of the entrance to Carsaig bay, is bluff, and there is a valley at the south-eastern end of this latter bay which leads to Tayvallich where houses can be seen.

20 Small vessels with local knowledge can obtain anchorage in Port an t-Sasunnach, eastward of the southern end of Carsaig island (*Lat.* 50° 03' *N.*, *Long.* 5° 39' *W.*), in depths of from 5 to 8 fathoms (9^m1 to 14^m6). This is the best anchorage during northerly winds.

Sailean Mhòr which is entered northward and eastward of Rubha nam Bàrr (na Barra), 1½ miles north-eastward of the north-eastern extremity of Carsaig island, is a narrow inlet affording anchorage to small vessels with local knowledge, in depths of about 2 fathoms (3^m7), about half a cable south-south-eastward of Rubha nam Bàrr, except during northerly winds, when a heavy swell sets in. This inlet and its approaches are free from dangers, but the head of the inlet dries out about 1½ cables.

Chart 2472, plan of Loch Crinan.

Loch Crinan.—Loch Crinan is entered between Ardnoe point, 2 miles north-eastward of Rubha nam Bàrr, and Scodaig, 1½ miles north-north-eastward. The loch is open north-westward and its head dries out about 5 cables. River Add flows into the loch, at its southern corner.

Tidal streams.—The streams run across the entrance but lose strength rapidly as the loch is entered and just inside the line joining 40 Ardnoe point and Eilean nan Coinean, though still approximately north-going and south-going, the spring rate is only about 0·3 knot. The streams in the loch are negligible.

Islets and dangers.—Eilean nan Coinean, about 2½ cables westward of Scodaig, attains an elevation of 57 feet (17^m4); there is a deep 45 channel between it and the mainland eastward.

Foul ground extends about three-quarters of a cable westward from Scodaig, and a bank, with depths of less than 3 fathoms (5^m5) over it, on which are two rocks, with depths of less than 6 feet (1^m8) over them, extends one cable south-south-westward from the same point. 50 A rock, awash, lies about a quarter of a cable offshore in the bay between Scodaig and Rubha Garbh-ard, 3½ cables south-eastward. Foul ground extends half a cable south-south-westward from Rubha Garbh-ard, and half a cable southward from Rubha na Moine, about 3½ cables farther south-eastward. A rock, 4 feet (1^m2) high, lies about

Chart 2472, plan of Loch Crinan.

three-quarters of a cable south-eastward of Rubha na Moine and there are shoals between it and the mainland.

Duntrune (Duntroon) castle, about 2 cables eastward of Rubha na Moine, has a house with a flagstaff built on its battlements and is 5 conspicuous. About half a cable south-south-westward of the castle is Sgeir an Toisich, an islet connected with the mainland by a jetty ; a reef, which dries 4 feet (1^m2), lies close southward of the islet.

Eilean da Mhèinn, about half a mile eastward of Ardnoe point, is 45 feet (13^m7) high, and is joined to the mainland by a bank, which 10 dries from one to 2 feet (0^m3 to 0^m6). A tall chimney, about $1\frac{1}{4}$ cables south-eastward of Eilean da Mhèinn, is conspicuous.

Black rock (*Lat. $56^{\circ} 06' N.$, Long. $5^{\circ} 33' W.$*), about $3\frac{1}{2}$ cables east-north-eastward of the northern extremity of Eilean da Mhèinn, is 8 feet (2^m4) high ; foul ground extends about half a cable from it. 15

Sgeireag Gaibhre and Eilean Glas, lying near the head of the loch, about 4 cables eastward and $4\frac{1}{2}$ cables east-south-eastward, respectively, of Black rock, attain elevations of 35 and 99 feet (10^m7 and 30^m2) ; they mark the edge of a broad flat of sand and mud, which dries from one to 5 feet (0^m3 to 1^m5), extending from the mouth of 20 River Add to the point on which stands Duntrune castle.

Anchorages in Loch Crinan.—**Submarine cables.**—Crinan harbour, on the southern side of Loch Crinan, between the eastern side of Eilean da Mhèinn and the mainland south-eastward, affords anchorage for small vessels ; the bottom is sand and mud. 25

Submarine cables are laid across Crinan harbour. See page 7.

Port an Deora (Gallanach bay), on the northern side of the loch, between Rubha Garbh-ard and Rubha na Moine, is open south-westward ; the head of the bay dries out about $2\frac{1}{2}$ cables, but southward of An-tinalin, an islet, 16 feet (4^m9) high, 4 cables northward of 30 Rubha na Moine, there are depths of from one to 3 fathoms (1^m8 to 5^m5), sand.

Crinan.—The village of Crinan, on the southern shore of Loch Crinan, about 3 cables eastward of Eilean da Mhèinn, is situated round the entrance to the Crinan canal (page 126). There is a large 35 hotel, which is conspicuous. There is a pier about half a cable eastward of the canal entrance, with a depth of 8 feet (2^m4) alongside.

The services of divers can be obtained on application to the canal authorities.

Communication is by road or canal to Ardrishaig (page 122), and 40 thence by sea to Greenock or Glasgow.

Small quantities of provisions can be obtained here.

Chart 2326.

Loch Craignish.—Loch Craignish is entered between Scodaig and Craignish point, about $1\frac{1}{2}$ miles north-westward. 45

From a position about three-quarters of a mile north-westward of Scodaig a chain of islands and islets extends $3\frac{1}{2}$ miles north-eastward, parallel with the south-eastern shore of the loch, at a distance of from a quarter to half a mile. The main entrance is north-westward of these islands. 50

There is a deep channel south-eastward of this chain of islands and islets, which affords good anchorage in places to small vessels with local knowledge.

Tidal streams.—Though weak streams run in the entrance from

Chart 2326.

and to the channel eastward of Ruadh sgeir they are imperceptible one mile and more inside the entrance.

Islands and dangers.—The foul ground westward of Scodaig,
5 and Eilean nan Coinean, 3 cables westward of this point, are described
on page 172.

The names of the principal islands and islets off the south-eastern shore, named from southward, are Liath-sgeir Mhòr, Macaskin island, 210 feet (64^m0) high, Eilean nan Gabhar, and Eilcan Righ,
10 185 feet (56^m4) high. There is no navigable channel between these islands and islets.

A bank, with depths of less than 8 fathoms (11^m0) over it, extends about 1½ cables from the south-eastern side of Macaskin island; a vessel using the channel between the island and the south-eastern
15 shore of the loch should keep close to the south-eastern shore.

Two detached rocks, with depths of less than 6 feet (1^m8) over them, are situated about one cable eastward of the north-eastern end of Eilean Righ; the navigable channel, which is south-eastward of these rocks, is about 1½ cables wide.

20 Sgeir Dhuhb Mhic Lartai (Black rock), situated on the western side of the fairway of the main channel, about 4½ cables north-north-westward of the south-western extremity of Eilean Righ, is one foot (0^m3) high; shoals extend about three-quarters of a cable southward from it. A shoal, with a depth of 3½ fathoms (6^m4) over it, lies in 25 mid-channel about 3½ cables eastward of the southern extremity of Eilean Dubh (*Lat. 56° 10' N., Long. 5° 33' W.*), and a shoal, with a depth of 4½ fathoms (8^m7) over it, lies about 2 cables south-eastward of the same point.

Eilean Dubh, about one cable from the north-western shore of the 30 loch, is 170 feet (51^m8) high, with islets extending three-quarters of a cable north-eastward from its north-eastern extremity. Eilean Buidhe,
35 feet (10^m7) high, close westward of Eilean Dubh, is connected with the shore by a reef, which dries; islets and a rocky spit extend 1½ cables south-westward from Eilean Buidhe.

35 Eilean Mhic Chrion lies with its south-western extremity about 1½ cables north-eastward of the north-eastern extremity of Eilean Dubh and is about 2½ cables from the north-western shore of the loch; it attains an elevation near its northern end of 195 feet (59^m4).

There is a narrow channel, with a depth of 2½ fathoms (4^m6), close 40 southward of Eilean Mhic Chrion; the channel on the north-western side of that island dries.

Sgeir Dhuhb (Black rock), about 1½ cables south-eastward of the north-eastern extremity of Eilean Mhic Chrion, is 2 feet (0^m6) high and a shoal bank extends half a cable all round it. A shoal, with 45 a depth of 16 feet (4^m9) over it, lies about midway between Sgeir Dhuhb and the south-eastern shore, and a shoal, with a depth of 3½ fathoms (6^m4) over it, lies about 3 cables eastward of the north-eastern extremity of Eilean Mhic Chrion and 1½ cables from the south-eastern shore.

50 Eilean Inshaig lies about three-quarters of a cable eastward of the northern extremity of Eilean Mhic Chrion.

Anchorages in Loch Craignish.—Small vessels can obtain a good landlocked anchorage about 2 cables east-north-eastward of the north-eastern end of Eilean Righ, with the north-eastern extremity of that

Chart 2326.

island in line with the south-eastern extremity of Eilean Mhic Chrion, bearing 252°, and Sgeir Dhubh in line with the south-western extremity of Eilean Inshaig, bearing 342°, in depths of about 8 fathoms (14^m6).

There is anchorage at the head of the loch, about 3½ cables north-eastward of the north-eastern extremity of Eilean Mhic Chrion, in a depth of about 8 fathoms (14^m6), mud. 5

There is good anchorage for small vessels on the western side of the head of the loch, within Eilean Inshaig, in a depth of about 3 fathoms (5^m5), mud. 10

Small quantities of provisions can be obtained at Ardfern, a village about 1½ cables westward of the northern extremity of Eilean Mhic Chrion. There is a jetty at Ardfern.

Anchorages between Lowlandman's bay and the northern end of Jura.—Lagg bay is a shallow bight on the eastern coast of 15 Jura, about 3½ miles north-north-eastward of Rubb' an Lèim (page 168).

Tarbert bay, about 1½ miles north-north-eastward of Lagg bay, is a small inlet in which small vessels with local knowledge could obtain temporary anchorage. A shoal, with a depth of 2 fathoms 20 (3^m7) over it, is situated about 2½ cables southward of Rubha nan Crann, the eastern entrance point of Tarbert bay; several small above-water rocks lie in the entrance of the bay, and Tarbert rocks, about three-quarters of a cable southward of Rubha nan Crann, are awash.

Lussa bay (Ardlussa bay south), about 2½ miles north-north-eastward 25 of Rubha nan Crann, affords good shelter to small vessels from northerly winds. Care should be taken to avoid the reefs lying about three-quarters of a cable from the western shore of this bay.

Ardlussa bay, about one mile north-north-eastward of Lussa bay, affords temporary anchorage for small craft. 30

Dubh chamas, about 6 miles north-north-eastward of Ardlussa bay, is free from dangers, but the depths are too great to render it a desirable anchorage.

Kinuachdrach harbour, about 8½ cables northward of Dubh chamas (*Lat. 56° 06' N., Long. 5° 42' W.*), affords good anchorage to small 35 vessels, close off the northern shore, in depths of from 2 to 4 fathoms (3^m7 to 7^m3). A vessel anchoring here should be careful to avoid a shoal, with a depth of 1½ fathoms (3^m2) over it, lying about three-quarters of a cable from the southern shore of the harbour.

Port an Tiobairt, about 4 cables northward of Kinuachdrach 40 harbour, is open north-eastward, but affords good anchorage to small vessels with the wind from other directions, about 1½ cables north-north-westward of the southern entrance point, in depths of from 3 to 6 fathoms (5^m5 to 11^m0). A vessel anchoring here should be careful to avoid a shoal, with a depth of 1½ fathoms (2^m7) over it, 45 lying about one cable north-north-eastward of the southern entrance point. There is a ferry between Port an Tiobairt and Craignish, 3½ miles east-north-eastward.

OUTLYING ISLANDS AND CHANNELS BETWEEN JURA AND SEIL SOUND.—Scarba.—Scarba, an island, the southern 50 extremity of which is situated 6 cables northward of the northern extremity of Jura, is remarkable for the pyramidal formation of its central and highest peak, Cruach Scarba, which attains an elevation

Chart 2326.

of 1,466 feet (446^m8). Its southern coast is bold and steep-to, and forms the northern shore of the Gulf of Corryvreckan ; on its eastern side is Sound of Luing. There are no harbours anywhere on its bleak and rugged coasts, though sometimes vessels anchor temporarily off the eastern coast inshore of the strong offing stream (*see below*).

On the western side of Scarba there is a bay with moderate depths, but quite open north-westward. Two rocks, with depths of less than 6 feet (1^m8) over them, are situated 2½ and 4½ cables north-north-eastward, respectively, of the southern entrance point of this bay.

Gulf of Corryvreckan.—The Gulf of Corryvreckan, separating the northern end of Jura from the southern end of Scarba, is noted for its turbulent waters ; it has a least width of 6 cables ; the bottom is very uneven, but it is free from dangers in the fairway.

15 Eilean Mòr (*Lat. 56° 09' N., Long. 5° 45' W.*), situated off the northern extremity of Jura, on the southern side of the western entrance to the Gulf of Corryvreckan, is described on page 177.

Tidal streams.—The west-going stream begins +0410 Oban (-0120 Dover), the east-going stream begins -0210 Oban (+0445 20 Dover) ; the spring rate of the west-going stream is about 8·5 knots, and that of the east-going stream rather less. The west-going stream extends several miles seaward, at a gradually decreasing rate without appreciable increase in its width, but at a position 3·7 miles 232° from Garvellachs lighthouse, on or very near the direct line of the 25 west-going stream from the gulf and about 6 miles from its entrance, the stream is rotary clockwise, spring rate from 0·6 to one knot. It runs west-north-westward at about -0430 Oban (+0225 Dover), north-north-eastward in the direction of the fairway about -0100 Oban (+0555 Dover), east-south-eastward at about +0130 Oban 30 (-0400 Dover) and south-south-westward in the direction of the fairway at about +0500 Oban (-0030 Dover). The rates are irregular and the stream is no stronger in any special directions, either those of the fairway or of the Gulf of Corryvreckan, than in any other directions, though it runs in general westerly and easterly directions 35 during the west-going and east-going streams in the gulf ; eastward of the position, however, the stream becomes gradually more rectilinear and runs from and to the gulf. With strong westerly winds during the west-going stream the gulf breaks right across and heavy overfalls extend as much as 3 miles seaward of its western entrance. During 40 the east-going stream there is less turbulence in the gulf.

Eddies form on both sides of the main streams through the gulf, those of greatest importance being on the northern side during the west-going stream. During the west-going stream an eddy of great extent runs from westward of Scarba into the gulf ; the inner edge 45 of the eddy begins about 1½ miles northward of Rubha na Faoilaig, the western extremity of Scarba, and runs southward to about 2 cables westward of the point, and thence south-eastward towards the south-western extremity of Scarba and eastward along the southern coast to about Camas nam Bairneach, the southern extremity of 50 Scarba ; the outer limit of the eddy is not known but from its northern end it appears to extend south-westward to the northern edge of the west-going stream from the gulf ; whilst the eddy is running there is slack, or nearly slack, water between it and the coast of Scarba. At its northern limit the eddy is weak and begins about -0515 Oban

Chart 2326.

(+0140 Dover), but its rate increases and the time at which it begins, becomes earlier farther to the southward ; off the south-western extremity of Scarba it runs very strongly and begins about +0510 Oban (-0020 Dover) ; the eddy meets the main stream over the ⁵ inequalities of the bottom off Camas nam Bairneach where there is very violent and dangerous turbulence ; from this position very heavy overfalls extend westward and indicate the division between the eddy and the main stream ; close south of the overfalls the stream may be running as much as about 8·5 knots to the westward whilst close north-¹⁰ ward of them the eddy is running nearly as strongly to the eastward.

During the west-going stream an eddy runs eastward along the southern coast of Scarba from about 3 cables eastward of Camas nam Bairneach round the point about 5 cables farther eastward ; during the east-going stream a west-going eddy runs round this point and ¹⁵ along the coast towards Camas nam Bairneach ; during the east-going stream there is slack water in the bay westward of Uamh nan Galla, the south-eastern extremity of Scarba.

The eddies on the southern side of the channel are of little importance ; the west-going stream forms a small eddy westward of the ²⁰ northern extremity of Jura and another in the bay northward of Bâgh Gleann nam Muc ; the west-going stream is weak in the channel between Eilean Mòr (*Lat.* 56° 08' *N.*, *Long.* 5° 45' *W.*) and the land. The east-going stream runs strongly through the channel between Eilean Mòr and the land, a race forming ; from the northern end of the race ²⁵ an eddy runs westward and south-westward-northward of Eilean Mòr, and there are overfalls where the eddy meets the main stream.

Caution.—When the tidal streams are setting through the gulf navigation at times is very dangerous, and no vessel should then attempt this passage without local knowledge. The passage through ³⁰ from west to east is not so risky as that in the reverse direction.

Lunga, Fiola Meadhonach, and Rubha Flola.—Lunga is an island, situated about one cable northward of the northern extremity of Scarba ; it attains an elevation in Bidein na Iolaire (Eagle hill) of 318 feet (96^m0). The western side of Lunga is foul, dangers extending ³⁵ about 4 cables offshore.

Guirasdeal (Garbhstuaidh island), an island lying about 2 cables south-westward of the western extremity of Lunga, is 99 feet (30^m2) high ; in the channel between it and Lunga are some above-water rocks which narrow the channel to about half a cable in width. ⁴⁰

An Tudan, about 2½ cables north-north-westward of the western extremity of Lunga, is a small above-water rock, and from its north-western end foul ground extends about 1½ cables north-north-westward ; at the north-western end of this foul ground are two rocks, which dry one and 3 feet (0^m3 and 0^m9), respectively. The south-eastern side ⁴⁵ of Liath sgeir, about 5½ cables northward of An Tudan, in line with the north-western extremity of Ormsa, 1½ miles north-eastward of Liath sgeir, bearing about 036°, leads north-westward of this foul ground.

The dangers on the eastern side of Lunga are described with Sound ⁵⁰ of Luing on page 181.

Charts 2476, 2326.

Fiola Meadhonach (South Fullah) is situated close northward of Lunga, and Rubha Fiola (North Fullah) close northward of Fiola

Charts 2476, 2326.

Meadhonach ; these three islands are connected at low water. Rubha Fiola is 102 feet ($31^{\text{m}}1$) high.

Eilean Dubh Mòr and Eilean Dubh Beag.—About half a mile westward of Rubha Fiola is a group of islets and rocks ; the islets, named in order from the southward, are Liath sgeir, Eilean Dubh Mòr, 174 feet ($53^{\text{m}}0$) high, and Eilean Dubh Beag (Black islands). These islets (*Lat. $56^{\circ} 14' N.$, $5^{\circ} 43' W.$*) are separated from each other by narrow, shallow channels.

10 Charts 2326, 2515.

Bogha an t Sagart, situated about one mile south-westward of the south-western extremity of Eilean Dubh Mòr, is a reef which dries one foot ($0^{\text{m}}3$). The south-eastern side of Liath sgeir in line with the north-western extremity of Rubha Fiola, bearing 054 , leads south-eastward, and Meall a Chàise (page 184), bearing more than 041° and kept open north-westward of the north-western extremity of Eilean Dubh Beag, leads close north-westward of this reef.

Charts 2476, 2326.

From a promontory about 2 cables southward of the north-eastern extremity of Eilean Dubh Mòr, foul ground extends about one cable southward.

Sgeir nan Saidhean, about $3\frac{1}{2}$ cables northward of the north-eastern extremity of Eilean Dubh Mòr, is a reef which dries 9 feet ($2^{\text{m}}7$). About midway between Sgeir nan Saidhean and Eilean Dubh Beag is a small reef which dries one foot ($0^{\text{m}}3$). There is also a small islet with shoal water extending about half a cable from its northern extremity, situated about one cable northward of the north-eastern end of Eilean Dubh Mòr. A vessel passing between Sgeir nan Saidhean and Ormsa (page 179), should keep closer to Ormsa, which is steep-to, but should be careful to avoid the race (see page 181).

Chart 2326.

Garvellachs.—Light.—Dangers.—Garvellachs, the south-western island of which lies about $2\frac{1}{2}$ miles west-north-westward of Guirasdeal (page 177), and the north-eastern island about one mile west-north-westward of Eilean Dubh Beag, are a group of islands and islets with narrow channels between them. The principal islands and islets, from south-westward, are Eileach an Naoimh, A' Chùli, Garbh eileach and Dun Chonnuill.

Eileach an Naoimh, 247 feet ($75^{\text{m}}3$) high, has several rocks, the outer of which are above water, extending about $2\frac{1}{2}$ cables from its south-eastern side ; a shoal, with a depth of 3 fathoms ($5^{\text{m}}5$) over it, lies about one cable west-south-westward of the lighthouse at the south-western extremity of this island.

A' Chùli (*Lat. $56^{\circ} 14' N.$, Long. $5^{\circ} 47' W.$*) is 147 feet ($44^{\text{m}}8$) high. Foul ground extends about $1\frac{1}{2}$ cables south-south-eastward from its south-western end ; Sgeir nam Marag, the southernmost of these dangers, is above water ; a shoal, with a depth of 2 fathoms ($3^{\text{m}}7$) over it, lies about half a cable north-eastward ; a shoal, with a depth of 4 fathoms ($7^{\text{m}}3$) over it, lies about 2 cables north-eastward of the eastern extremity of Sgeir nam Marag, and a shoal, with a least depth of one fathom ($1^{\text{m}}8$) over it, lies $2\frac{1}{2}$ cables north-north-eastward of Sgeir nam Marag. There are some rocks above water lying in mid-channel between Eileach an Naoimh and A' Chùli. The passage between A' Chùli and Garbh eileach is foul.

Chart 2326.

Garbh eilach, 358 feet ($109^{\text{m}}1$) high, is almost steep-to. There is a landing place near the middle of its south-eastern coast ; two sunken rocks, with depths of less than 6 feet ($1^{\text{m}}8$) over them, and a small above-water rock, lie in the approach to the landing place, near which is a stone house. 5

Dun Chonnuill, 198 feet ($60^{\text{m}}3$) high, is steep-to ; it is separated from Garbh eileach by a channel three-quarters of a cable wide, which is free from dangers.

A light is exhibited, at an elevation of 69 feet ($21^{\text{m}}0$), from a white 10 beacon, 13 feet ($4^{\text{m}}0$) in height, situated on the south-western extremity of Eileach an Naoimh.

Fresh water may usually be found on all the principal islands except Dun Chonnuill.

Outlying danger.—A shoal, with a depth of $5\frac{1}{2}$ fathoms ($9^{\text{m}}6$) 15 over it, lies about 2 miles northward of the light-beacon on Eileach an Naoimh.

Chart 2476.

Islets and dangers northward of Rubha Fiola.—Anchorage.—

Lights.—Ormsa, an islet situated about $3\frac{1}{2}$ cables north-north-west- 20 ward of the northern extremity of Rubha Fiola (page 177), is 20 feet ($6^{\text{m}}1$) high. There is a strong race during the north-going stream off Rubha Fiola, which passes close westward of Ormsa, and thence northward for half a mile ; see page 181.

A shoal, with a least depth of 8 feet ($2^{\text{m}}4$) over its northern end, 25 extends about 3 cables south-south-eastward from a position about 4 cables north-eastward of the northern end of Rubha Fiola (*Lat. $56^{\circ} 14' N.$, Long. $5^{\circ} 42' W.$*).

A shoal, with a least depth of 10 feet ($3^{\text{m}}0$) over it, lies about $5\frac{1}{2}$ cables east-north-eastward of the northern end of Rubha Fiola. There 30 are several small shoals, with depths of less than 3 fathoms ($5^{\text{m}}5$) over them, lying about $2\frac{1}{2}$ cables eastward of Rubha Fiola. Shoals, with depths of 9 and 15 feet ($2^{\text{m}}7$ and $4^{\text{m}}6$) over them, lie, respectively, about $2\frac{1}{2}$ cables north-eastward and eastward of Ormsa. The shoal, with a depth of 10 feet ($3^{\text{m}}0$) over it, mentioned above, lies in the 35 white sector of Fladda light, between the bearings of 186° and 001° .

Dubh sgeir, 13 feet ($4^{\text{m}}0$) high, lies $8\frac{1}{2}$ cables east-north-eastward of Ormsa.

A light is exhibited, at an elevation of 22 feet ($6^{\text{m}}7$), from a white tank on a concrete base, 20 feet ($6^{\text{m}}1$) in height, on Dubh sgeir. 40

A rock, with a depth of less than 6 feet ($1^{\text{m}}8$) over it, lies close south-eastward of Dubh sgeir, and a bank, with depths of less than 2 fathoms ($3^{\text{m}}7$) over it, extends about half a cable farther southward. Foul ground extends about one cable northward from Dubh sgeir. The dangers closer inshore are described with Sound of Luing on pages 45 181-182.

Fladda, a low islet with a flagstaff at its southern end, lies about 4 cables west-north-westward of Dubh sgeir ; a rocky spur extends about three-quarters of a cable northward from Fladda, and a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extends half a cable 50 farther in the same direction.

A light is exhibited, at an elevation of 42 feet ($12^{\text{m}}8$), from a white tower, 42 feet ($12^{\text{m}}8$) in height, on the eastern part of Fladda. See view on chart 2326 and facing page 184.

Chart 2476.

Shoals, with depths of 14 and 15 feet ($4^{\text{m}}3$ and $4^{\text{m}}6$) over them, lie about $1\frac{1}{2}$ cables east-north-eastward and $1\frac{1}{2}$ cables eastward, respectively, of Fladda lighthouse, and in the *white* sector of that light between 6 the bearings of 186° and 001° .

Temporary anchorage can be obtained by small vessels about one cable northward of Fladda, (*Lat. $56^\circ 15' N.$, $5^\circ 41' W.$*), with the lighthouse bearing 184° , and the southern extremity of Belnahua (see below) in line with the summit of Dun Chonnuill, bearing about 269° , 10 in depths of from 5 to 6 fathoms ($9^{\text{m}}1$ to $11^{\text{m}}0$).

There is a pier extending from the south-eastern side of Fladda, and another from its northern side.

A vessel with local knowledge can proceed through the channel between Dubh sgeir and Fladda, in which there are depths of from 15 7 to 16 fathoms ($12^{\text{m}}8$ to $29^{\text{m}}3$), but there is a patch with a depth of 32 feet ($9^{\text{m}}8$) over it, about $2\frac{1}{4}$ cables south-eastward of Fladda lighthouse.

Belnahua, about $2\frac{1}{4}$ cables west-north-westward of Fladda, is 70 feet ($21^{\text{m}}3$) high. A bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) 20 over it, extends $1\frac{1}{2}$ cables from its southern side and three-quarters of a cable from its eastern side. Foul ground extends about $2\frac{1}{4}$ cables northward from the northern side of Belnahua. Fladda lighthouse in line with Rubha na Lic (chart 2326), $1\frac{1}{4}$ miles south-south-eastward, bearing 164° , leads eastward of this foul ground.

25 The channel between Fladda and Belnahua has depths of from 8 to 10 fathoms ($14^{\text{m}}6$ to $18^{\text{m}}3$) in the fairway.

Charts 2476, 2326.

Luing.—Luing lies with Rubh' Ard Luing, its southern extremity, about $1\frac{1}{2}$ miles north-eastward of the south-eastern extremity of 30 Scarba (page 175); it forms the eastern side of Sound of Luing. It is 205 feet ($62^{\text{m}}5$) high at its southern end, and 302 feet ($92^{\text{m}}0$) near its northern end. In 1951 there was a population of 219.

Sound of Luing.—Sound of Luing lies between Scarba, Lunga, Fiola Meadhonach, Rubha Fiola, and Fladda, on the west, and Luing 35 and Dubh sgeir on the east. Notwithstanding the dangers in the northern entrance to this channel, and the strong tidal streams setting through it, it is the channel generally used by vessels proceeding northward from, or southward to Sound of Jura. The southern entrance to Sound of Luing is deep and free from dangers in the fairway.

40 Tidal streams.—In Sound of Luing the north-going stream begins +0430 Oban (−0100 Dover), the south-going stream begins −0155 Oban (+0500 Dover); the spring rate in each direction is from 2·5 to 3 knots at the southern end of the sound, increasing to from 4·5 to 5 knots at the northern end, and to from 6 to 7 knots round and between 45 the islands off the northern entrance. Eddies, which are not of much importance, form on both sides of the sound; during the north-going stream an eddy runs southward round Uamh nan Galla (*Lat. $56^\circ 10' N.$, Long. $5^\circ 40' W.$*), and thence westward with the west-going stream in the Gulf of Corryvreckan; during the south-going stream an eddy 50 runs northward along the coast of Scarba both southward and northward of Sgeirean a' Mhaoil; off the eastern side of Lunga the south-going stream continues to run till about an hour after the beginning of the north-going stream in mid-channel. On the eastern side of the channel, an eddy runs southward along the coast northward of

Charts 2476, 2326.

Rubha na Lic during the north-going stream and a similar eddy runs northward along the coast southward of the point during the south-going stream. During the north-going stream a race extends from northward of Rubha Fiola, close southward and westward of Ormsa,⁵ and thence north-north-westward for about half a mile ; this probably indicates the meeting of the streams from the Sound of Luing and the channel between Rubha Fiola and Eilean Dubh Mòr.

There are eddies, races and overfalls round and between the islands off the northern end of the sound.¹⁰

Chart 2326.

Islets and dangers.—Buoy.—From a position about 5 to $6\frac{1}{2}$ cables northward of Uamh nan Galla, the south-eastern extremity of Scarba, a group of rocks, with depths of less than 6 feet (1^m8) over them, extends about $1\frac{1}{2}$ cables from the eastern side of Scarba.¹⁵

Sgeirean a' Mhaoil (Maoile rock), about $9\frac{1}{2}$ cables northward of Uamh nan Galla and about three-quarters of a cable from the eastern side of Scarba is a group of small above-water rocks.

Rubh' Ard Luing is connected with Luing by a stony reef which dries ; numerous above-water and sunken rocks extend about $1\frac{1}{2}$ cables all round ; a black conical buoy marks the western edge of these rocks. The south-eastern side of Shuna (page 185), in line with Beinn Chaorach (Ashnish hill), a hill, 835 feet (254^m5) high, $2\frac{1}{2}$ miles north-eastward of the south-eastern extremity of Shuna, bearing 047° , leads south-eastward ; and Fladda lighthouse, bearing 344° and open 25 westward of Rubha na Lic leads westward of these rocks.

Northward of Rubh' Ard Luing there are no dangers off-lying the western side of Luing, beyond one cable offshore, as far as Eilean Mhic Chiarain (McKeiran), 3 miles northward.

About $1\frac{1}{4}$ cables northward of Eilean a' Bhealaich (Bheallaich), an islet close eastward of the northern extremity of Scarba, some sunken rocks extend about three-quarters of a cable offshore. About 5 cables northward of Eilean a' Bhealaich, some above-water and sunken rocks extend about one cable offshore. Eilean nan Ceann (Gambna island), $1\frac{1}{4}$ cables eastward of the north-eastern extremity of Lunga, has a bank, with a least depth of $1\frac{1}{2}$ fathoms (3^m2) over it, extending $1\frac{1}{2}$ cables southward from it.³⁰

A patch, with a depth of 6 fathoms (11^m0) over it, lies near the fairway, about $2\frac{1}{2}$ cables castward of Eilean nan Ceann.

Chart 2476.

A shoal, with a least depth of 2 fathoms (3^m7) over it, lies in the fairway, about $3\frac{1}{2}$ cables cast-south-eastward of the northern extremity of Rubha Fiola ; the deeper channel is eastward of this shoal. Between this shoal and the northern end of Rubha Fiola is a shoal, with a depth of 14 feet (4^m3) over it, and another shoal, with a depth of 14 feet (4^m3) over it, lies about $3\frac{1}{2}$ cables north-eastward of the same point. (*Lat. $56^\circ 14' N.$, Long. $5^\circ 41' W.$*).⁴⁰

Eilean Mhic Chiarain lies close off the western side of Luing to which it is joined by a rocky spur. Sgeir na Cusha, an above-water rock, lies about half a cable westward of the south-western extremity of Eilean Mhic Chiarain, and a rocky ledge, which dries 3 feet (0^m9), lies half a cable westward of Sgeir na Cusha, and a shoal, with a depth of one foot (0^m3) over it, lies three-quarters of a cable southward of this rocky ledge. Funaich Mhòr, about one cable north-westward

Chart 2476.

of Sgeir na Cusha, is a rock above water on a sunken reef ; a shoal, with a least depth of 3 feet (0^m9) over it, lies about one cable northward of Funaich Mbòr.

- 5 Close north-eastward of Eilean Mhic Chiarain (*Lat. $56^{\circ} 14' N.$, Long. $5^{\circ} 40' W.$*) are Fraoch eilean, Eilean Loisgte and Glas eilean ; Diar sgeir, about one cable westward of Glas eilean, are two rocks, which dry about 8 feet (2^m4) ; a shoal, with a depth of less than 6 feet (1^m8) over it, lies close westward of Diar sgeir.

- 10 The channel between Diar sgeir and Dubh sgeir (page 179) is about one cable wide between the 3-fathom (5^m5) lines, and has a least depth of 20 feet (6^m1).

The islets and dangers on the western side of the sound, northward of Rubha Fiola, are described on pages 179-180.

- 15 From northward of Glas eilean, Eilean Loisgte, and Fraoch eilean, as far as Rubha Buidhe, $3\frac{1}{2}$ cables northward of the northern extremity of Fraoch eilean, there are numerous above-water and sunken rocks, of which the largest is Sgeir Buidhe.

- Culanach, about $3\frac{3}{4}$ cables west-south-westward of Cuan point, the 20 northern extremity of Luing, is a reef which dries 4 feet (1^m2) ; between Culanach and Luing are some above-water and sunken rocks.

Chart 2326.

- The western side of Dubh sgeir in line with Cruach Scarba (page 175), bearing 203° , leads close westward of Culnach, but Cruach Scarba is often obscured by mist, in which case Fladda lighthouse in line with Rubha Deireas (McPhails point), 2 miles south-south-westward, bearing about 211° , leads about $1\frac{1}{2}$ cables north-westward of this reef.

- Anchorages.**—Vessels can obtain temporary anchorage off the eastern side of Scarba, about $1\frac{1}{2}$ miles northward of Uamh nan Galla 30 and about $1\frac{1}{2}$ cables offshore, in depths of from 6 to 10 fathoms (11^m0 to 18^m3), good holding ground ; vessels are sheltered here from winds from south-west, through west, to north.

- There is an anchorage for small vessels about 6 cables north-north-westward of Eilean a' Bhealaich and half a cable from the eastern side 35 of Lunga, in the entrance to Poll nan Corran (Puill a Charrain), in depths of from $4\frac{1}{2}$ to 5 fathoms (8^m2 to 9^m1). This anchorage is only exposed eastward.

The dangers on the southern side of the entrance to this anchorage are described on page 181.

- 40 Black Mill bay, on the western side of Luing, about 2 miles north-north-westward of Rubh Ard Luing, affords good anchorage to small vessels about 3 cables south-eastward of Rubha na Lic and $1\frac{1}{2}$ cables from the head of the bay, with Rubha na Lic in line with the north-eastern extremity of Rubha Fiola (*Lat. $56^{\circ} 14' N.$, Long. $5^{\circ} 41' W.$*), 45 bearing 321° , in depths of from $2\frac{1}{2}$ to 6 fathoms (4^m6 to 11^m0). From the position of this anchorage the bay shoals rapidly towards its head.

There is a pier on the southern side of Black Mill bay at which the mail steamers between Glasgow and Oban call.

Chart 2476.

- 50 Port Mary, a small creek on the western side of Luing, about $2\frac{1}{2}$ cables south-westward of Cuan point, is too shallow and exposed to afford anchorage.

Chart 2426.

Bealach a' Choin Ghlaic.—Bealach (Bheallaich) a' Choin Ghlaic,

Chart 2426.

the channel between the northern side of Scarba, which is steep-to, and the southern side of Lunga, has a least width of one cable ; it is known also as Little Corryvreckan gulf.

It is inadvisable to pass through this channel, and it should not be attempted without local knowledge. If it is necessary to go through it, the time of slackwater is preferable, and it should be entered from westward with the east-going stream, rather than from eastward with the west-going stream. 5

Eilean a' Bhealaich is situated in the centre of the eastern entrance 10 to this channel ; the channels on both sides of this islet, which are narrow, have least depths of 4 fathoms (7^m3) in the fairway.

Tidal streams.—In Bealach a' Choin Ghais the west-going stream begins +0420 Oban (-0110 Dover), and the east-going stream begins -0205 Oban (+0450 Dover) ; the streams are stated to run at about 15 the same rates as in the Gulf of Corryvreckan. With the west-going stream a strong eddy runs round the point on the northern side of the western entrance, and thence eastward along the northern side of the channel ; with strong westerly winds during the west-going stream a race extends from a half to three-quarters of a mile westward from 20 the western entrance.

Charts 2476, 2813, 2326.

Islets and dangers westward of the northern extremity of Luing. **Buoy.**—Dubh fhéith, situated about $2\frac{1}{2}$ miles westward of Cuan point, are two small rocky islets close together and steep-to. 25

Shoals, with least depths of 21 feet (6^m4), and 15 feet (4^m6) over them, lie $1\frac{1}{2}$ cables, and half a cable, respectively, westward of Dubh fhéith. Charts 2813, 2326.

A shoal, with a depth of 23 feet (7^m0) over it, lies about $4\frac{3}{4}$ cables westward of Dubh fhéith (*Lat. $56^{\circ} 16' N.$, Long. $5^{\circ} 43' W.$*). 30

Chart 2813.

There is a bank, with a least depth of 15 fathoms (27^m4) over it, lying about $1\frac{1}{2}$ miles north-westward of Dubh fhéith, and there are depths of from 11 to 20 fathoms (20^m1 to 36^m6) within $1\frac{1}{2}$ miles northward of the same islets ; the general depths in this vicinity are very 35 irregular.

Chart 2476.

Bogha Nuadh, or Bono rock, about $1\frac{1}{2}$ miles westward of Cuan point, consists of two heads half a cable apart, with least depths of 3 and 4 feet (0^m9 and 1^m2) over them ; a red can buoy marks their eastern side. 40

Bogha Nuadh is covered by the *red* sector of Fladda light between the bearings of 169° and 186° .

Bogha Ghair, about $1\frac{1}{2}$ miles westward of Cuan point, is a small detached pinnacle rock, with a least depth of 14 feet (4^m3) over it. Shoals, with depths of 21, 32 and 26 feet (6^m4 , 9^m8 and 7^m9) over them, 45 lie about $1\frac{1}{2}$ cables north-north-westward, one cable northward and $3\frac{1}{2}$ cables north-north-eastward, respectively, of Bogha Ghair. The bottom in the vicinity of Bogha Ghair and these shoals is rocky and uneven.

Bogha Ghair and the shoals with depths of 21 and 32 feet (6^m4 and 50 9^m8) over them, mentioned above, are covered by the *red* sector of Fladda light between the bearings of 169° and 186° ; the shoal, with a depth of 26 feet (7^m9) over it, lies in the *white* sector of the same light, between the bearings of 186° and 001° .

Charts 2159, 2515, 1577, 2635.

Chart 2476.

The eastern side of Sgeir Beul na h-Uamhaidh (page 202), bearing about 007° and open westward of Easdale island (page 202), leads eastward of Bogha Ghair and the shoals in its vicinity.

6 Seil.—Seil is an island situated with Rubha Bréac, its southern extremity, 6 cables east-south-eastward of Cuan point. The south-western end of Seil is separated from the north-eastern end of Luing by Cuan sound; Seil is separated from the mainland by Seil sound. Meall a Chaise, 474 feet ($144^{\text{m}} 5$) high, in the western part of Seil, is
10 the summit of this island.

Chart 2326.

COAST.—From Craignish point to Rubh' a' Chnaip (Ashnish point), on the southern side of the entrance to Loch Melfort, about $6\frac{1}{2}$ miles north-north-eastward, the coast is much indented and fronted
15 close offshore by numerous rocky shoals and islets.

Charts 2476, 2326, 2515.

Farther offshore and for 5 miles farther northward are Scarba, Luing, Seil, Garvellachs and numerous islets, described on pages 175-178. The western sides of these islands form the south-eastern
20 side of the entrance to Firth of Lorne, while the south-eastern coast of Mull, $3\frac{1}{2}$ miles north-westward of Seil, forms the north-western shore.

Chart 2326.

Islands and dangers.—**Submarine cable.**—Coiresa (page 166)
25 lies about 7 cables offshore; about $2\frac{1}{2}$ cables south-eastward of Coiresa (*Lat. $56^{\circ} 03' N.$, Long. $5^{\circ} 38' W.$*) is a detached rock, with a depth of 2 feet ($0^{\text{m}} 6$) over it; a shoal bank extends half a cable all round it; the deep channel is eastward of this rock.

The eastern side of Réisa Mhic Phaidean (Ris an Vic Faden), close
30 northward of Coiresa, in line with Shuna white cottage (page 166), bearing 003° , leads $1\frac{1}{2}$ cables eastward of the detached rock with a depth of 2 feet ($0^{\text{m}} 6$) over it. The conspicuous hotel at Crinan (page 173), bearing 139° and just open north-eastward of Garbh Réisa (page 165), leads $1\frac{1}{2}$ cables south-westward of this rock.

35 Réisa Mhic Phaidean is foul on all sides, foul ground extending about 2 cables from its northern and southern ends. Two shoals, with depths of $1\frac{1}{2}$ and $2\frac{1}{2}$ fathoms ($2^{\text{m}} 7$ and $4^{\text{m}} 6$) over them, lie about $1\frac{1}{2}$ and $2\frac{1}{2}$ cables, respectively, south-south-eastward of the northern extremity of the island.

40 Dearg sgeir, situated about 5 cables north-north-westward of the southern extremity of Réisa Mhic Phaidean and about $2\frac{1}{2}$ cables from its western side, dries 6 feet ($1^{\text{m}} 8$); a shoal, with a depth of $1\frac{1}{2}$ fathoms ($2^{\text{m}} 7$) over it, lies about one cable southward of it. The channel between these rocks and Réisa Mhic Phaidean is deep and
45 free from dangers.

McIsaac rock, 4 cables north-westward of the north-eastern extremity of Réisa Mhic Phaidean, has a depth of less than 6 feet ($1^{\text{m}} 8$) over it.

Dùn Crutagain (chart 2476), situated about 2 miles eastward of Cuan point (page 182), bearing 016° , and open westward of Shuna
50 Mid farm, $3\frac{1}{2}$ miles south-south-westward, leads westward of Dearg sgeir and McIsaac rock (see view facing this page). The north-western entrance point of Loch Beag, situated 7 cables east-south-eastward of the north-eastern extremity of Réisa Mhic Phaidean, in line with



Fudde Island Lighthouse - [Original drawing]

Detailed description



Lung Island
[Original drawing]

Detailed description



Pun Cratagan, bearing 010° with open sky and scattered clouds mid day.
[Original drawing]

Detailed description

Duik Arikach Lighthouse.
[Original drawing]

Detailed description

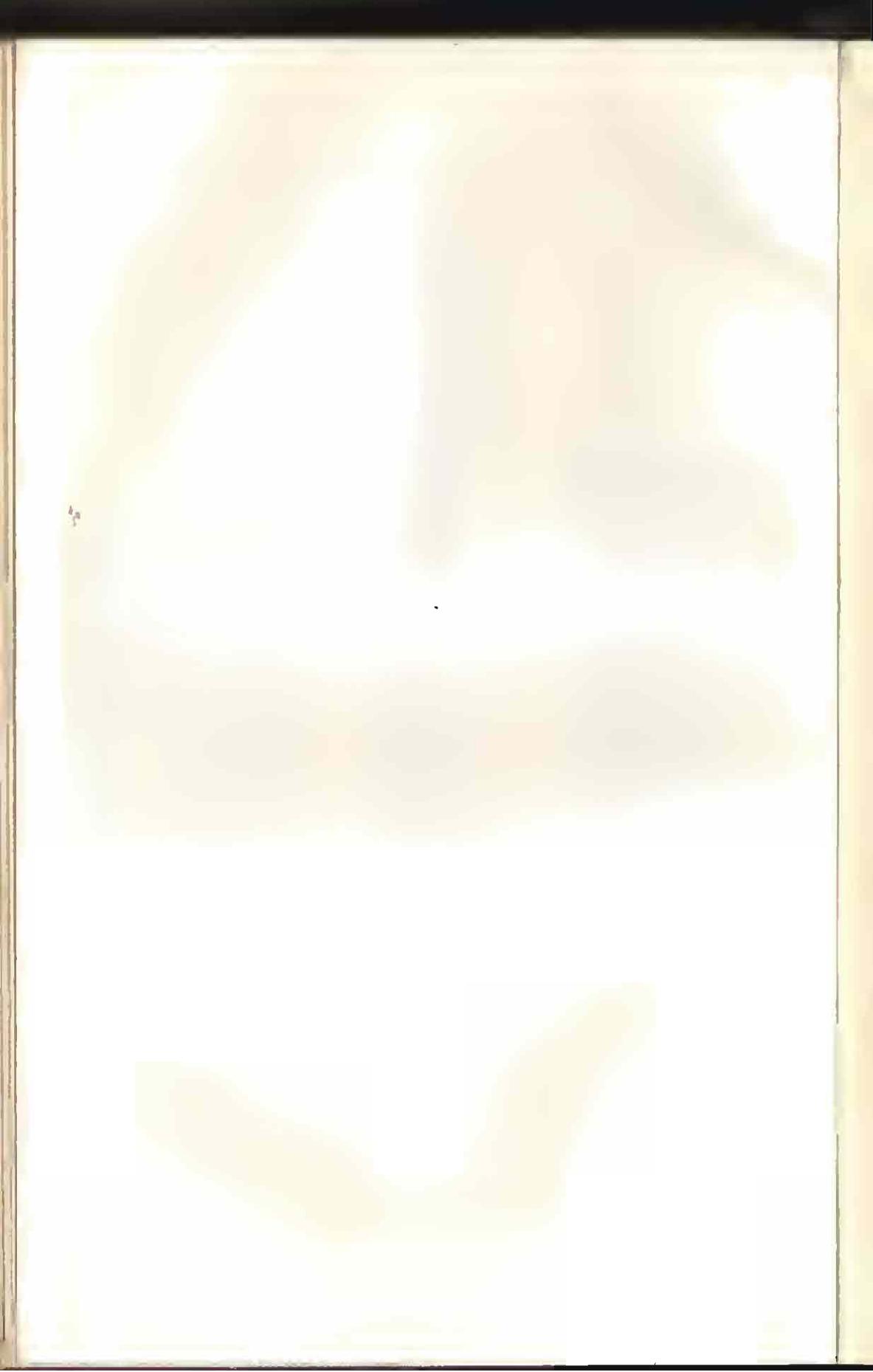


Chart 2326.

Craignish ferry house, $1\frac{1}{2}$ cables south-eastward, bearing 134° , leads north-eastward of McIsaac rock.

About $6\frac{1}{2}$ cables northward of the north-western entrance point of Loch Beag is Eilean Ona, 50 feet (15^m2) high, which is connected with the mainland north-eastward by a reef that dries; this islet is a salient feature of the coast; Black rocks, a group of above-water and sunken rocks extend about 2 cables south-south-westward from its southern side. A patch, with a depth of $2\frac{1}{2}$ fathoms (4^m6) over it, lies about $4\frac{1}{2}$ cables southward of Black rocks. The coast is foul between Loch 10 Beag and Black rocks.

Hutcheson rock, about 5 cables north-westward of Eilean Ona, has a depth of less than 6 feet (1^m8) over it, and a shoal bank extends about $1\frac{1}{2}$ cables south-south-westward from it.

Aird farm, about 3 cables south-south-eastward of the north-western entrance point (*Lat. $56^\circ 09' N.$, Long. $5^\circ 36' W.$*) of Loch Beag, bearing 151° and open south-westward of the north-western entrance point, or the north-eastern extremity of Rubha Fiola (page 177), bearing 331° and just open south-westward of the western extremity of Rubh' Ard Luing, leads south-westward of Hutcheson rock. The north-western extremity of Rèisa Mhic Phaidean in line with the south-eastern extremity of Rèisa an t-Sruith, bearing 208° , leads south-eastward of this rock.

Druim an Achanarnich, $4\frac{1}{2}$ cables north-eastward of the north-eastern end of Eilean Ona, is 219 feet (66^m7) high; it has a cairn on the summit and a cliff close to the coast.

25

Creagach Chrosgach (Cross rock), situated $3\frac{1}{2}$ cables north-north-eastward of the summit of Druim an Achanarnich, in the centre of Bàgh Bàn (Barachan bay), has a shoal bank extending about one cable westward from it.

The rocks extending about $1\frac{1}{2}$ cables around Rubh' Ard Luing are 30 described on page 180.

A group of above-water and sunken rocks, lies about $1\frac{1}{2}$ miles north-north-eastward of Creagach Chrosgach and about $2\frac{1}{2}$ cables offshore. Culbaie (Callivag rock), one of these rocks, dries 3 feet (0^m9); a shoal, with a least depth of 4 fathoms (7^m3) over it, lies about $1\frac{1}{2}$ miles north-north-eastward of Creagach Chrosgach. Rubh' a' Chnaip in line with Melfort cottage, $1\frac{1}{2}$ miles northward, bearing 010° , leads close westward of the group of rocks and the 4-fathom (7^m3) shoal. The summit of Eilean Creagach, situated about 2 miles northward of Culbaie, in line with a conspicuous white farm house at the head of Kilchoan bay 40 (page 189), bearing 011° , also leads westward of Culbaie and the 4-fathom (7^m3) shoal.

Shuna is situated with Shuna point, its southern extremity, about $2\frac{1}{2}$ miles northward of Eilean Ona; it is separated from the mainland eastward by Loch Shuna, which has a least navigable width of about $4\frac{1}{2}$ cables; it is separated from Luing westward by Shuna sound, a navigable channel with a least width of about 4 cables. A rock, with a depth of 2 fathoms (3^m7) over it, lies about $1\frac{1}{2}$ cables south-westward of Shuna point; a shoal bank extends about one cable north-north-westward from this rock. Druim na Dubh Ghlaic, 290 feet (88^m4) 50 high, is the highest peak on Shuna.

A submarine cable, the direction of which is indicated on the chart, crosses the northern end of Shuna sound; the landing places of the cable are each marked by a beacon. See page 7.

Chart 2326.

Liath sgeir (Leath rock), about 7 cables eastward of the south-eastern extremity of Sbuna and about 2 cables from the mainland, is 35 feet (10^m7) high. It is the southernmost of a group of islets extending about $1\frac{1}{2}$ miles northward and north-eastward. Foul ground extends about $1\frac{1}{2}$ cables southward from Liath sgeir, and a rock close southward of Liath sgeir dries 2 feet (0^m6).

Eilean Arsa, about $1\frac{1}{2}$ cables north-westward of Liath sgeir, is 148 feet (45^m1) high.

10 Fraoch eilean (Craobh island), 45 feet (13^m7) high, and Eilean an Dùin (Dun island), 75 feet (22^m9) high, which lie close offshore, are connected by a reef that dries. Fraoch eilean lies one cable north-eastward of Eilean Arsa (*Lat. $56^{\circ} 12' N.$, Long. $5^{\circ} 34' W.$*), from which it is separated by a channel with a least depth of 7 fathoms (12^m8) 15 in the fairway; foul ground extends half a cable southward from the south-western side of Fraoch eilean.

A rock awash lies about half a cable eastward of the eastern extremity of Eilean an Dùin; a rock, with a depth of 3 feet (0^m9) over it, lies about half a cable northward of the northern extremity of the same island.

20 Eilean Buidhe, 18 feet (5^m5) high, lies about one cable eastward of Eilean an Dùin; a shoal, with a depth of one fathom (1^m8) over it, lies about half a cable from its south-western side. Foul ground extends about 2 cables north-eastward from the northern end of Eilean Buidhe. A group of rocks, the two northern of which dry 2 and 3 feet (0^m6 and 0^m9), 25 respectively, lie from about $1\frac{1}{2}$ to 4 cables northward of Eilean Buidhe.

Eilean Creagach (Craigach island), 55 feet (16^m8) high, the southern extremity of which is situated about $4\frac{1}{2}$ cables north-westward of Eilean an Dùin, is about $5\frac{1}{2}$ cables from the eastern side of Shuna; it is narrow, and steep-to on all sides, with the exception of some foul 30 ground which extends about one cable north-north-eastward from its northern end.

Eich Donna (Each Donn), extending $2\frac{1}{2}$ cables south-westward from the southern extremity of Rubh' a' Chnaip, are a group of above-water and sunken rocks. The summit of Eilean an Dùin in line with Lunga 35 house, 9 cables south-south-eastward, bearing 167° , leads close westward of these rocks. The summit of Eilean Gamhna in line with Dun Fadaidh, situated about $1\frac{1}{2}$ miles north-north-westward, bearing 334° , leads between Eich Donna and the foul ground extending north-north-eastward from Eilean Creagach.

40 Chart 2476.

Eilean Gamhna, 54 feet (16^m5) high, situated in the entrance to Loch Melfort about 4 cables west-north-westward of Rubh' a' Chnaip, has foul ground extending about one cable east-south-eastward from its eastern extremity. A vessel can pass on either side of Eilean Gamhna. 45 Scoul eilean, lying $6\frac{1}{2}$ cables westward of Eilean Gamhna and about the same distance from the northern end of Shuna, has foul ground extending about $1\frac{1}{2}$ cables southward from its southern end, and a bank, with a least depth of 14 feet (4^m3) at its outer end, extends about 2 cables east-north-eastward from its north-eastern end. Two 50 rocks, with depths of 14 and 18 feet (4^m3 and 5^m5) over them, lie about $1\frac{1}{2}$ cables south-westward and north-westward, respectively, of the northern extremity of Scoul eilean.

Charts 2326, 2476.

Tidal streams.—In Shuna sound and Loch Shuna the north-going

Charts 2326, 2476.

stream begins +0430 Ohan (−0100 Dover), and the south-going stream begins −0155 Ohan (+0500 Dover); the streams are weak, the spring rate in both directions being from 0·5 to one knot. Northward of Shuna the streams are barely perceptible. 5

Chart 2326.

Anchorages.—Loch Beag is entered about one mile north-north-eastward of Craignish point (*Lat. 56° 08' N., Long. 5° 36' W.*) ; the head of the loch dries out about $3\frac{1}{2}$ cables. Small craft with local knowledge can obtain secure anchorage just within the entrance in *10* depths of from one to 2 fathoms (1^m8 to 3^m7). A vessel entering this anchorage should be careful to avoid a rock awash, about one cable westward of the north-western entrance point.

Craignish castle is situated close northward of the head of Loch Beag.

There is a ferry between this loch and Port an Tiohairt (page 175) *15* at the north-eastern end of Jura; the ferry house, on the south-eastern side of the entrance to Loch Beag, is painted grey.

Bàgh Bàn, a small hight on the coast, immediately northward of Druim an Achanarnich, is open westward, and is divided into two parts by Creagach Chrosgach; there are no dangers in the southern *20* part of this hight, which has depths of from one to 4 fathoms (1^m8 to 7^m3), sand and mud; in the northern part there is a rock which dries 4 feet (1^m2).

Bàgh an Tigh-Stòir (Camus Arsa) is entered about $2\frac{1}{2}$ miles north-north-eastward of Druim an Achanarnich; it is sheltered by the islets *25* in this vicinity, and affords secure anchorage to small vessels, except during strong south-westerly winds, in depths of from 2 to 3 fathoms (3^m7 to 5^m5), mud and sand. The anchorage can be approached from southward, westward and north-westward, but in the latter passage there is a rock which dries 3 feet (0^m9) about half a cable off the south-*30* ern side of Fraoch eilean. Small vessels can find anchorage $1\frac{1}{2}$ cables north-westward of the northern entrance point of Bàgh an Tigh-Stòir and $2\frac{1}{2}$ cables north-north-eastward of the northern extremity of Liath seir, in a depth of about 14 fathoms (25^m6), mud. There is a jetty at the southern entrance point of Bàgh an Tigh-Stòir. 35

There is a well-sheltered anchorage for small vessels with local knowledge about $1\frac{1}{2}$ cables south-eastward of the summit of Eilean an Dùin, in depths of from 5 to 8 fathoms (9^m1 to 14^m6), good holding ground. This anchorage can be entered either from southward or northward. If approaching from southward a vessel should keep on the western *40* side of the narrow passage, half a cable wide, between the steep-to off-lying islet south-eastward of Fraoch eilean and a rock, 14 feet (4^m3) high, close westward of the mainland; there is a least depth of 3 fathoms (5^m5) in the fairway. Approaching from northward, a vessel should steer between Eilean an Dùin and Eilean Buidhe, keeping close *45* to the eastern side of the former to avoid the shoal, with a depth of one fathom (1^m8) over it, lying half a cable off the south-western side of Eilean Buidhe.

Asknish (Ashnish) bay, close south-eastward of Ruhh' a' Chnaip, affords shelter with winds from north-west, through east, to south. *50* A vessel entering this bay should take care to avoid the rocks in the southern part of the bay (see page 186), also Eich Donna, extending from the north-western entrance point.

Good anchorage for small vessels with local knowledge can be

Chart 2326.

obtained in an inlet close eastward of Rubh' an Aoil, the northern extremity of Shuna, in depths of from 2 to 5 fathoms (3^m7 to 9^m1) ; this anchorage is sheltered from southerly winds. A vessel entering this inlet should take care to avoid the shoal bank extending half a cable northward from the eastern entrance point.

Kilchattan bay, on the eastern side of Luing, about 2 miles northward of Rubh' Ard Luing (*Lat. 56° 11' N., Long. 5° 38' W.*), affords good anchorage, in depths of from 3 to 6 fathoms (5^m5 to 11^m0) ; it is sheltered except from south-south-westerly winds. The bay shoals rapidly and its head dries out about three-quarters of a cable.

Small quantities of provisions can be obtained from Toberonochy, a village on the southern side of Kilchattan bay.

Charts 2476, 2326.

15 LOCH MELFORT.—Loch Melfort is entered between Rubh' a' Chnaip (page 184) and Degrish point, $1\frac{1}{2}$ miles north-westward ; both entrance points are steep-to. The loch is deep, but the bottom is uneven.

Tidal streams.—The streams in Loch Melfort are imperceptible.

Islets and dangers.—Scoul eilean and Eilean Gamhna, in the entrance to Loch Melfort, are described on page 186.

Campbell rock, about 7 cables north-north-eastward of Rubh' a' Chnaip, has a depth of not less than 6 feet (1^m8) over it ; a rock, with a depth of 17 feet (5^m2) over it, lies about 2 cables north-north-eastward of Campbell rock.

25 Rubh' Ard an Sturra (*see below*), bearing 068° and open northward of the northern extremity of Sgeir na Caillich, leads northward of Campbell rock and close northward of the above-mentioned rock, with a depth of 17 feet (5^m2) over it. The southern extremity of Eilean Gamhna in line with the northern extremity of Shuna, bearing about 245° , leads south-eastward of both rocks. The flagstaff near Kilchoan house, situated about three-quarters of a mile northward of Campbell rock, in line with the western extremity of the farm northward of Kilchoan bay, bearing 342° , leads eastward of both rocks. The western extremity of Rubh' a' Chnaip in line with the summit of **35 Eilean Creagach** bearing about 194° , leads westward of both rocks.

Chart 2476.

Eilean Coltair, lying with its southern extremity about $1\frac{1}{2}$ miles north-north-eastward of Rubh' a' Chnaip, is an islet, 70 feet (21^m3) high, situated about half a cable from the northern side of the loch ; a reef **40** extends about one cable southward from its southern end. About $1\frac{1}{2}$ cables east-north-eastward of the southern extremity of Eilean Coltair is a detached rock which dries 3 feet (0^m9).

Sgeir na Caillich, about $4\frac{1}{2}$ cables eastward of the southern extremity of Eilean Coltair and about $2\frac{1}{2}$ cables from the northern side of the **45** loch, is a rock 8 feet (2^m4) high ; a spit, with a depth of 29 feet (8^m8) over its outer end, extends about one cable southward from it.

Rubh' Ard an Sturra is a promontory on the northern side of the loch, about $1\frac{1}{2}$ miles eastward of Eilean Coltair ; a shoal bank extends about three-quarters of a cable south-westward from it.

50 Anchorage.—On either side of Creag Aoil (*Lat. 56° 15' N., Long. 5° 32' W.*), a promontory on the southern side of Loch Melfort, about $1\frac{1}{2}$ miles east-north-eastward of Rubh' a' Chnaip, is a bight which affords shelter from southerly winds.

Chart 2476.

Kilchoan bay, on the northern side of the loch, affords anchorage about $2\frac{1}{2}$ cables westward of the north-western extremity of Eilean Coltair, in a depth of 12 fathoms (21^m0), mud, good holding ground, but a vessel should not anchor here during strong south-westerly winds. 5

Kames bay is entered about 8 cables east-north-eastward of Creag Aoil ; it is sheltered from southerly and westerly winds. The south-western side of this bay dries out about three-quarters of a cable and foul ground extends half a cable farther north-eastward ; on the eastern side of the entrance a spit extends about three-quarters of a 10 cable westward.

A rock, which dries 6 feet (1^m8), lies close off the southern shore and another close off the eastern shore.

Loch na Cille is an inlet on the southern side of the head of Loch Melfort ; its head dries out about $1\frac{1}{2}$ cables. Foul ground extends 15 about three-quarters of a cable offshore, on the north-eastern side of the entrance. Loch na Cille affords anchorage to small vessels about 2 cables eastward of the south-western entrance point, in depths of from 3 to 5 fathoms (5^m5 to 9^m1), mud.

Fearnach bay, on the northern side of the head of Loch Melfort, 20 affords good anchorage at its head, about $5\frac{1}{2}$ cables north-eastward of Rubli' Ard an Sturra, with the eastern extremity of the western shore of the bay in line with Creag Aoil, bearing 219° , in depths of from 6 to 7 fathoms (11^m0 to 12^m8). Another good berth is, in depths of from 11 to 13 fathoms (20^m1 to 23^m8), mud, with the south-eastern 25 extremity of Ruhh' Ard an Sturra in line with the summit of Rubh' a' Chuaip, bearing 228° , and about $1\frac{1}{2}$ cables off the north-western shore of the bay.

This bay, which is the most frequented anchorage in Loch Melfort, is free from dangers in the fairway. 30

There is a pier extending a short distance from the northern shore of Fearnach bay ; a shoal bank extends about three-quarters of a cable from the head of this pier.

COAST.—Anchorage.—Islands and dangers.—Torsay, 205 feet (62^m5) high, lies with its southern extremity about three-quarters of a 35 mile westward of Degnish point, and is separated from the mainland eastward by a deep channel $2\frac{1}{2}$ cables wide, leading into Seil sound. The south-western side of the island is connected to the north-eastern side of Luing (page 180) by Torsa Beag and a reef which dries forming a bay northward of Torsa Beag, which is full of dangers. Eilean na 40 h-Eaglaise is a small peninsula at the northern end of Torsa and from it shoals extend about $2\frac{1}{2}$ cables north-eastward.

Ardinamar bay, between the north-eastern side of Luing and the south-western bend of Torsa, is a small and shallow cove, with a rock, one foot (0^m3) high, lying in the centre of the entrance. A similar 45 rock lies off the southern shore.

Sgeir a' Chleirich, two rocks which dry 5 feet (1^m5), lie close offshore about $1\frac{1}{2}$ cables north-westward of Degnish point (*Lat. $56^\circ 15' N.$, Long. $5^\circ 36' W.$*).

Seil sound.—Dangers.—From the northern end of Eilean na 50 h-Eaglaise, Seil sound extends about $3\frac{1}{2}$ miles north-north-eastward to Clachan sound. It is about $6\frac{1}{2}$ cables wide in its southern part, decreasing to about 5 cables in width just below Ardmaddy bay,

Chart 2476.

which is entered on the eastern side of the sound about 2 miles northward of Degrish point.

A shoal, with a depth of 21 feet (6^m4) over it, lies about 4 cables 5 north-north-eastward of Eilean na h-Eaglaise.

Northward of Ardmaddy bay the sound contracts, and the navigable channel, which continues for one mile northward, is further constricted by a shoal bank extending from Seil (page 184).

About $1\frac{1}{2}$ miles northward of the north-western entrance point of 10 Ardmaddy bay the width of the sound rapidly diminishes until the coasts of Seil and the mainland are only separated by a channel a few yards wide.

About $2\frac{1}{4}$ miles northward of the north-western entrance point of 15 Ardmaddy bay the mainland and Seil are connected by a bridge having a single arch with a span of $69\frac{1}{2}$ feet (21^m2), the centre of which is $40\frac{1}{2}$ feet (12^m3) above the bed of the channel.

The narrow channel extending northward from the bridge is called Clachan sound and dries 4 feet (1^m2).

Ardmaddy bay is very shallow, and the head of the bay dries out 20 about $3\frac{3}{4}$ cables ; rocks, which dry 6 feet (1^m8), extend about three-quarters of a cable south-south-westward from the north-western entrance point. Rocks, which dry about 4 feet (1^m2), lie about $2\frac{1}{4}$ cables south-eastward of the same point, and extend about one cable south-south-westward, parallel with the coast.

25 Balvicar bay is entered between Rubha nan Ròn, about 6 cables north-north-westward of the north-western entrance point of Ardmaddy bay, and Ard Sheilleach, about 7 cables north-north-eastward. Eilean Tornal, 45 feet (13^m7) high, and about $1\frac{1}{2}$ cables north-eastward of Rubha nan Ròn, fronts this bay ; small islets and rocks, which dry, 30 extend from the northern extremity of Eilean Tornal to the northern shore of Balvicar bay ; a rock, with a depth of 3 feet (0^m9) over it, lies about one cable east-south-eastward of the southern extremity of Eilean Tornal.

A rock, which dries 2 feet (0^m6), lies about 2 cables southward of 35 Ard Sheilleach, and three-quarters of a cable from the eastern shore of Seil sound.

Cuan sound.—Submarine and overhead cables.—Beacons.—Cuan sound, between the north-eastern end of Luing (*Lat. $56^{\circ} 16' N.$, Long. $5^{\circ} 38' W.$*) and the southern end of Seil, is a narrow channel 40 connecting Loch Melfort with Firth of Lorne. A ferry crosses the channel about $3\frac{1}{2}$ cables south-eastward of Cuan point (page 182).

There are slipways on either side of the sound near the ferry terminals.

A submarine cable, the inner ends of which are marked by beacons, crosses the sound from a position on the southern side of Seil about 45 one cable west-north-westward of Rubha Breac, the southern extremity of Seil ; an overhead cable crosses the sound, at a height of about 114 feet (34^m7) above high water, about 4 cables north-westward of the same point ; both cables are indicated on the chart. See page 7.

This channel should only be used by small vessels with local knowledge ; on account of the strong tidal streams and eddies, the channel is not recommended except at slack water. The navigable channel is about half a cable wide at its narrowest point, off Rubha Breac, where the least depth is about 23 feet (7^m0).

An Cleiteadh, situated on the southern side of the fairway, about

Chart 2476.

$1\frac{1}{2}$ cables southward of Rubha Breac, has at high water the appearance of two islets ; the northern islet is 2 feet ($0^m 6$) high and the southern 11 feet ($3^m 4$). Foul ground, with a rock awash, extends about half a cable southward from Rubha Breac. A vessel should be careful to 5 avoid being set on to An Cleiteadh.

Anchorages.—Balvicar bay affords anchorage to small craft about $1\frac{1}{2}$ cables west-north-westward of the south-western extremity of Eilean Tornal, in a depth of $2\frac{1}{2}$ fathoms ($4^m 6$), mud ; a narrow channel southward of Eilean Tornal, with a least depth of 11 feet ($3^m 4$), leads 10 to the anchorage. There is a jetty on the southern shore of the bay, about $2\frac{1}{2}$ cables west-north-westward of Rubha nan Ròn ; Balvicar village, where small quantities of provisions can be obtained, is westward of the jetty (*Lat. $56^{\circ} 18' N.$, Long. $5^{\circ} 36' W.$*).

Small vessels can anchor, in a depth of one fathom ($1^m 8$), mud, 15 off the jetty situated about $2\frac{1}{2}$ cables northward of Ard Sheilleach ; there is a least depth of 5 feet ($1^m 5$) in the fairway leading to the anchorage. A vessel should keep close to the eastern shore opposite Ard Sheilleach, then pass close to the islet situated about three-quarters of a cable northward and approach the jetty close to the 20 western shore.

Good anchorage for small vessels can be obtained in Cuan sound, out of the tidal streams, about 5 cables south-south-westward of Rubha Breac, over sand and rock.

Tidal streams.—In mid-channel eastward of Torsa, the north-going stream begins +0415 Oban (-0115 Dover), the south-going stream begins -0200 Oban (+0455 Dover) ; spring rate in each direction is from 0.5 to one knot.

After passing Torsa, off the northern extremity of which there are eddies, the north-going stream turns westward, and runs south- 30 westward into Cuan sound ; at the bend in the sound the stream runs westward, on both sides of An Cleiteadh, and then turns north-westward out of the sound. The south-going stream runs in the opposite directions, south-eastward into the sound, eastward on both sides of An Cleiteadh, north-eastward out of the sound, and then eastward and 35 southward past Torsa. In the sound the north-going stream (which runs south-westward, westward and north-westward) begins +0420 Oban (-0110 Dover), the south-going stream, which runs south-eastward, eastward and north-eastward, begins -0200 Oban (+0455 Dover) ; spring rate in both directions about 4 knots between Torsa 40 and Seil, about 3 knots on both sides of An Cleiteadh, and about 6 knots in the narrows between Seil and Luing. An eddy forms westward of An Cleiteadh during the north-(west-)going stream, and a similar eddy forms east of An Cleiteadh during the south-(east-)going stream.

Between the streams which run round the northern extremity of 45 Torsa, to and from Cuan sound, and the southern end of Seil sound the streams are weak and irregular. In the southern entrance to Seil sound the north-going stream begins +0525 Oban (-0005 Dover), the south-going stream begins -0055 Oban (+0600 Dover) ; the streams are very weak, spring rate in both directions not more than 50 about 0.5 knot. The streams increase northward and in Clachan sound, at the bridge, the north-going stream, spring rate about 3 knots begins +0550 Oban (+0020 Dover) ; the south-going stream, spring rate about 5 knots, begins -0025 Oban (-0555 Dover).

CHAPTER IV

IONA, SOUTHERN COAST OF MULL, AND FIRTH OF LORNE TO CALEDONIAN CANAL

Chart 2617.

IONA.—Beacon.—Iona is situated with Rubha na Carraig-géire, its southern extremity, about 14 miles north-westward of the northern extremity of Colonsay (page 139) ; it is separated from the south-western end of Mull by the Sound of Iona.

The cathedral, with its massive square tower, 70 feet (21^m3) in height, on the eastern side of Iona, about one mile from its northern extremity, is conspicuous. The village is situated close southward of the cathedral, and at the southern end of the village a pier projects 10 from the shore ; the eastern end of this pier is marked by a post, 5 feet (1^m5) high, surmounted by a ball.

There is regular communication by sea with Oban during the summer, also with Oban *via* Staffa and Tobermory. There is communication by sea with Bunessan.

15 Aspect.—Dangers.—Iona is low, with an irregular outline formed by numerous knolls, of which Dùn (*Lat. $56^{\circ} 20' N.$, Long. $6^{\circ} 24' W.$*), 325 feet (99^m1) high, $6\frac{1}{2}$ cables south-south-westward of the northern extremity of the island, is the highest, and most prominent.

From southward and westward Iona presents a barren aspect. The 20 western and north-western sides of the island have bold headlands : this coast is rugged and rocky, and should be given a wide berth, for although the locality, beyond 3 cables from the salient points, is believed to be free from dangers, other than those shown on the charts, there may be uncharted rocks.

25 A group of islets and rocks extends about 9 cables south-south-westward from the southern end of Iona. Sgeir an Oir, $5\frac{1}{2}$ cables south-westward of Rubha na Carraig-géire is the southernmost above-water rock, and a bank, with depths of less than 5 fathoms (9^m1) over it, extends $1\frac{1}{2}$ cables south-south-eastward from it. A shoal, 30 with a depth of 22 feet (6^m7) over it, and a shoal, with a depth of 6 feet (1^m8) over it, lies about $8\frac{1}{2}$ and $3\frac{1}{2}$ cables, respectively, westward of Sgeir an Oir. A shoal, with a depth of 25 feet (7^m6) over it, lies about $4\frac{1}{2}$ cables west-south-westward of Sgeir an Oir.

Off-lying islets, dangers, and banks.—Soa island, about one mile 35 south-westward of Sgeir an Oir, is the largest and highest of a group of islets, attaining an elevation of 100 feet (35^m2) ; a bank, on which there are several above-water and sunken rocks, extends about 5 cables south-westward from this island ; two detached shoals, each with a depth of 16 feet (4^m9) over it, lie about $3\frac{1}{2}$ cables north-eastward 40 of Soa island, and a patch, with a depth of 9 feet (2^m7) over it, lies $5\frac{1}{2}$ cables east-north-eastward of the eastern extremity of the island.

Chart 2617.

Greave, which dries 7 feet ($2^{\text{m}}1$), lies about 4 cables north-north-westward of the same island ; a patch, with a depth of 15 feet ($4^{\text{m}}6$) over it, lies about one cable farther in the same direction.

A shoal, with a depth of 7 fathoms ($12^{\text{m}}8$) over it, lies about $8\frac{1}{2}$ cables westward of the 109-foot ($35^{\text{m}}2$) summit of Soa island, and a shoal, with a depth of about $8\frac{1}{2}$ fathoms ($16^{\text{m}}2$) over it, lies about $1\frac{1}{2}$ miles north-westward of the same summit.

Charts 2515, 3674.

Five Fathom rock, about $2\frac{1}{2}$ miles west-north-westward of Soa ¹⁰ island, has a depth of 5 fathoms ($9^{\text{m}}1$) over it.

Iona spit, with a least depth of 40 feet ($12^{\text{m}}2$) over it, lies about $3\frac{1}{2}$ miles west-north-westward of Soa island ; a bank, with a depth of 7 fathoms ($12^{\text{m}}8$) over it, lies about 4 miles west-north-westward of the same island. A rocky shoal, with a depth of 5 fathoms ($9^{\text{m}}1$) ¹⁵ over it, lies about 6 miles west-north-westward of Soa island ; another rocky shoal, with a similar depth over it, lies 8 miles north-westward of the same island.

Rèidh eilean, bearing about 066° and well open north-westward of the north-western extremity of Iona, leads southward of these two ²⁰ 5-fathom ($9^{\text{m}}1$) shoals. Lunga (page 266), bearing about 055° , and well open north-westward of Bac Mòr or Dutchman's Cap (page 266), leads north-westward of these shoals ; Dùn (*Lat. $56^{\circ} 20' N.$, Long. $6^{\circ} 24' W.$*), bearing about 106° and well open northward of Rèidh eilean, leads northward of them. ²⁵

Bogha Rèidh, with a depth of 4 fathoms ($7^{\text{m}}3$) over it, lies about 3 miles west-north-westward of the south-western extremity of Iona.

Chart 2617.

Stac Mhic Mhurchaidh, the western and larger of two islets lying about $2\frac{1}{2}$ miles north-north-westward of the south-western extremity of ³⁰ Iona, is 103 feet ($31^{\text{m}}4$) high, and its south-western coast has a remarkable basaltic columnar formation. A rock, with a depth of 32 feet ($9^{\text{m}}8$) over it, lies $1\frac{1}{2}$ miles south-south-westward of Stac Mhic Mhurchaidh. Rèidh eilean lies about one cable east-north-eastward of Stac Mhic Mhurchaidh ; a rock, with a depth of 4 feet ($1^{\text{m}}2$) over ³⁵ it, lies about half a cable north-eastward, and a rock, with a depth of 2 feet ($0^{\text{m}}6$) over it, lies about 3 cables eastward of the north-eastern extremity of Rèidh eilean. Bo an Rèidh eilean, about $2\frac{1}{2}$ cables east-north-eastward of the north-eastern extremity of Rèidh eilean, dries 6 feet ($1^{\text{m}}8$), and close north-eastward of Bo an Rèidh eilean is a reef, ⁴⁰ with a least depth of 3 feet ($0^{\text{m}}9$) over it. Two shoals, with depths of 34 and 30 feet ($10^{\text{m}}4$ and $9^{\text{m}}1$) over them, lie about $7\frac{1}{2}$ and $8\frac{1}{2}$ cables, respectively, north-north-eastward of the north-eastern extremity of Rèidh eilean. The south-western extremity of Iona in line with the south-eastern extremity of Soa island, bearing 187° , leads eastward of ⁴⁵ Rèidh eilean and the dangers north-eastward of it.

Charts 2515, 3674.

Tidal streams.—In the Sound of Iona (page 194) the north-going stream, spring rate about 2 knots, begins +0515 Oban (-0015 Dover) ; the south-going stream, spring rate about 2.5 knots, begins ⁵⁰ -0110 Oban (+0545 Dover). Off the western coast of Iona the north-going stream begins +0600 Oban (+0030 Dover), the south-going stream begins -0015 Oban (-0545 Dover) ; spring rate in both directions about 1.5 knots.

Charts 2515, 3674, 1577, 2635.

Charts 2515, 3674.

The streams are said to run strongly across the banks about 5 to 10 miles westward of Iona, where there are dangerous overfalls in heavy weather.

5 Round and between Torran rocks (see below) the streams run in directions to and from the Sound of Iona and westward of Iona ; the streams along the south coast of Mull are weak and there is no tendency for the streams around Torran rocks to set in north-easterly or south-westerly directions. Eastward of the rocks the north-going stream begins +0415 Oban (-0115 Dover), the south-going stream begins -0210 Oban (-0445 Dover); westward of the rocks the north-going stream begins +0600 Oban (+0030 Dover), the south-going stream begins -0015 Oban (-0545 Dover); the spring rate in each direction from one to 1.5 knots both east and westward of 15 the rocks.

Chart 2617.

SOUND OF IONA.—The Sound of Iona, between the eastern side of Iona and the western end of Ross of Mull, the south-western peninsula of Mull, is only available for small vessels with local know- 20 ledge. It is used during the summer by vessels from Oban.

Charts 2515, 3674.

Islets and dangers in southern approaches.—**Light.**—**Fog signal.**—**Beacon.**—Dubh Artach, or St. Johns rock (*Lat. 56° 08' N., Long. 6° 38' W.*), about 11 miles south-westward of Soa island, is 25 fringed by a reef, and attains an elevation of 47 feet (14^m3); a bank, with a depth of 10 fathoms (18^m3) over it, lies about one mile south-eastward, and a rock awash about 120 yards (109^m7) south-westward of this islet. A group of rocks, which dries from 2 to 13 feet (0^m6 to 4^m0), extends about 2¹/₄ cables north-westward from a position 30 about 1¹/₂ cables west-south-westward of Dubh Artach; a rock, with a depth of less than 6 feet (1^m8) over it, lies about one cable eastward of the south-eastern extremity of this group.

A bank, with a depth of 11 fathoms (20^m1) over it, lies 7¹/₂ miles eastward, and a bank, with a depth of 14 fathoms (25^m6) over it, 35 lies 5¹/₂ miles west-north-westward of Dubh Artach.

A light is exhibited, at an elevation of 145 feet (44^m2), from a grey granite tower with a red band, 126 feet (38^m4) in height, on Dubh Artach. (See view facing page 184 and on charts 2515 and 3674.)

A fog signal is sounded from the lighthouse, and there is a radio 40 telephone.

Charts 2617, 2515, 3674.

Torran rocks, extending 5 miles south-westward from the south-western end of Ross of Mull, are a group of islets and above-water and sunken rocks, the positions of which may best be seen on the charts ; 45 most of the rocks are detached, with deep water between them. Na Torrain, about 3¹/₂ miles south-westward of the south-western extremity of Ross of Mull, is the largest and highest islet of this group, and attains an elevation of 74 feet (22^m6). Frasiers rock, the southern-most of the group, is a pinnacle rock, with a least depth of one foot 50 (0^m3) over it. Sgeir Dhoirbh, at the south-eastern end of this group, is an above-water and sunken reef. A rock, with a depth of 3¹/₂ fathoms (6^m9) over it, lies about 11 cables west-south-westward of Frasiers rock ; two shoals, with depths of 2¹/₂ and 2¹/₂ fathoms (4^m1

Charts 1577, 2635.

Charts 2617, 2515, 3674.

and 4^m6) over them, lie about 1½ miles west-north-westward of the same rock.

Chart 2617.

Ruadh sgeir (*Lat. 56° 15' N., Long. 6° 21' W.*), the easternmost 5 of the Torran rocks above water, is marked by a prominent stone beacon surmounted by a cross; foul ground extends about 1½ cables southward and 2½ cables south-south-westward from Ruadh sgeir. Bogha nan Ramfhear, the north-easternmost rock of this group, dries 4 feet (1^m2). Dearn sgeir, about 1½ miles south-south-westward of the 10 south-western extremity of Ross of Mull, is an above-water reef; some above-water rocks lie about 1½ cables northward, and some rocks, with a least depth of 12 feet (3^m7) over them, lie about 3½ cables westward of Dearn Sgeir. West reef, about 1½ miles westward of Na Torran, is above water and sunken; West rock, the westernmost rock of this reef, 15 dries 11 feet (3^m4). A shoal, with a depth of 7½ fathoms (13^m7) over it, lies about 7 cables north-westward of West rock.

Eilean a' Chalmain is situated about 4 cables southward of the south western extremity of Ross of Mull; some islets and rocks lie close off the south-eastern and south-western sides of this island. 20 Sgeir na Caillich, about 6 cables west-north-westward of the western extremity of Eilean a' Chalmain, is an above-water rock; a shoal, about 2½ cables west-south-westward of Sgeir na Caillich, has a least depth of 13 feet (4^m0) over it.

Islets and dangers in the sound.—Buoys.—The islets and 25 rocks extending about 1½ miles south-westward from the southern end of Iona (*Lat. 56° 19' N., 6° 25' W.*), on the western side of the southern entrance to the Sound of Iona, are described on pages 192 and 193.

Bogha hun a Chuoil, situated about 1½ miles southward of Rubha na Carrig-geire (page 192), is a pinnacle rock, with a depth of 6 feet (1^m8) 30 over it.

Rubha nam Maol Mòra (page 198), bearing about 097° and open southward of Eilean a' Chalmain, leads southward of Bogha hun a Chuoil (*see view facing page 201*). Iona cathedral tower (page 192), bearing 015° and open westward of the Free church, situated 4 cables 35 south-south-westward of the cathedral, leads westward, and bearing 009° and open eastward of the Free church, leads eastward of this rock. The north-western extremity of Dubh sgeir, an above-water rock, situated 1½ miles west-north-westward of the western extremity of Eilean a' Chalmain, in line with the southern extremity of Eilean 40 nam Muc, 2½ cables east-north-eastward of Dubh sgeir, bearing about 063°, leads northward of Bogha hun a Chuoil.

A spit, with a depth of 13 feet (4^m0) over it, extends about three-quarters of a cable southward from Dubh sgeir. From this rock a chain of islets and above-water and sunken rocks extends about 1½ miles north-north-eastward to An Caolas; these rocks extend about 6 cables westward from Erraid, the island forming the southern side of An Caolas.

Bogha Choilta, situated on the eastern side of the Sound of Iona, about 7½ cables north-westward of the north-western extremity of 50 Erraid and about 3½ cables offshore, has a depth of 8 feet (2^m4) over it, and is marked on its western side by a black conical buoy.

The eastern shore of the Sound of Iona is very foul, shoals extending as much as 3½ cables offshore.

Chart 2617.

No na Sliginach, lying on the eastern side of the sound, about 1½ cables northward of the north-western extremity of Erraid and about 2½ cables offshore, has a least depth of 3 feet (0^m9) over it ; about 5 half a cable north-eastward and 1½ cables north-north-eastward of it are two shoals, with least depths of 10 and 13 feet (3^m0 and 4^m0) over them, respectively ; a black conical buoy is moored on the northern side of the 13-foot (4^m0) shoal.

The eastern side of Iona is fringed by a reef. About 1½ miles southward of the north-eastern extremity of Iona (*Lat.* 56° 21' N., *Long.* 6° 23' W.) a sandbank, with depths of less than 12 feet (3^m7) over it, extends from the eastern side of the island across the channel to within about 1½ cables of the eastern shore ; the least depth on this sandbank is 3 feet (0^m9) ; at the southern end of this sandbank, about 15 1½ miles north-eastward of Rubha na Carraig-géire and about 3½ cables from Iona, is a rock with a depth of less than 6 feet (1^m8) over it, which is marked on its south-western side by a spherical buoy, painted in red and white horizontal bands.

Numerous shoals lie in the fairway of the sound, the positions of 20 which may be seen on the chart.

On the eastern side of the northern part of the sound a chain of islets and rocks lies parallel with and close off the western coast of Ross of Mull, extending as much as 4½ cables from it, for a distance of about 1½ miles. Eilean nam Ban is the southernmost and largest 25 of these islets.

From the north-eastern extremity of Iona a chain of islets and rocks extends about 5 cables north-eastward. Eilean Annraidi, the largest and highest of these islets, is 19 feet (5^m8) high.

Submarine cables.—Beacons.—Three submarine cables, the 30 directions of which are indicated on the chart, are laid across the Sound of Iona, about 1½ miles from the northern entrance, and a power cable about 5 cables from the same entrance. The landing places of the cables are marked by beacons. *See page 7.*

Tidal streams.—For tidal streams in the vicinity of Dubh Artach, 35 *see page 201.*

Anchorages.—Beacons.—An Caolas, close northward of Erraid, is well sheltered, but difficult of access, and should only be used by small vessels with local knowledge. The entrance is marked by a beacon on either side ; the southern beacon is situated about 2½ cables 40 west-north-westward of the north-western extremity of Erraid, and the northern beacon about 3 cables farther northward.

The lighthouse establishments for Skerryvore and Dubh Artach are situated on the northern side of Erraid, above a pier. Above the buildings is a small white tower.

45 Bull hole, between Eilean nam Ban and Ross of Mull, affords good and sheltered anchorage to small vessels about three-quarters of a cable southward of the north-eastern extremity of Eilean nam Ban, in depths of from 4 to 7 feet (1^m2 to 2^m1). Vessels should moor on account of the tidal streams ; there are mooring rings on Eilean nam 50 Ban in this vicinity.

Bull hole should be approached from southward. A vessel should keep on the eastern side of the channel to avoid a rock, awash, lying close off the eastern side of Eilean nam Bar, about 2½ cables north-eastward of its southern extremity.

Chart 2617.

Directions.—A vessel approaching from eastward and bound through the Sound of Iona should steer for the northern extremity of the Soa group (*Lat. 56° 17' N., Long. 6° 27' W.*), bearing 292° and with this group open half its own apparent breadth southward of the above-water rocks south-westward of Eilean a' Chalmain, which leads through the fairway between Bogha nan Ramfhear and Eilean a' Chalmain, and thence about 1½ cables southward of the shoal, with a depth of 13 feet (4^m0) over it, 2½ cables west-south-westward of Sgeir na Caillach. When Dubh sgeir is in line with Dùn, bearing 000°, the vessel should 10 steer for Eilean na h Aon Chaorach, 4½ cables south-westward of Rubha na Carraig-géire, bearing 324°, passing north-eastward of Bogha hun a Chuoil, until the Free church is in line with the cathedral tower, bearing 012°, which leads northward through the fairway of the southern part of the Sound of Iona until about three-quarters of a 15 mile east-north-eastward of Rubha na Carraig-géire. Local knowledge is necessary for vessels proceeding farther northward.

A vessel wishing to pass westward of Iona instead of through the sound should steer for the northern extremity of Soa group, as directed above, until the centre of Eilean a' Chalmain bears 004°, whence 20 she should steer to pass southward of the islets and dangers south-westward of the southern end of Iona ; the cleaving marks for passing southward of Bogha hun a Chuoil are given on page 195. Rubha nam Maol Mòra should be kept well open southward of Eilean a' Chalmain when nearing the southern end of Soa group. When the 25 summit of Stac Mhic Mhurchaidh bears 015° the vessel should steer for it on the bearing, which leads about one mile westward of Greave. After passing westward of Greave she can steer to pass either eastward or westward of the Stac Mhic Mhurchaidh group.

Instead of passing southward of Soa group the vessel can pass 30 northward. To do this she should follow the directions given above for vessels coming from eastward, and steer 324° for Eilean na h Aon Chaorach until Dubh sgeir is in line with the summit of Eilean a' Chalmain, bearing 112°, astern, which leads between Soa group and Iona, passing close southward of a shoal, with a depth of 25 feet (7^m6) 35 over it, 4½ cables west-south-westward of Sgeir an Oir.

Caution.—In thick or hazy weather great caution is necessary in approaching Ross of Mull from south-westward, sounding affording but little intimation of the vicinity of the reefs until very close to them. 40

Charts 2515, 3674.

MULL.—Mull, one of the Inner Hebrides, is separated from the mainland by Firth of Lorne ; it is deeply indented, and near its centre the head of Loch na Keal, which penetrates the south-western coast, is only about 2½ miles from the north-eastern coast of the island. 45 It is very mountainous ; Beinn Mòr (*Lat. 56° 26' N., Long. 6° 01' W.*), 14½ miles south-south-eastward of the northern extremity of Mull, which rises to a conical summit 3,163 feet (964^m1) high, is the loftiest of the mountains.

Tobermory, situated on the north-eastern coast, about 3 miles from 50 its northern extremity, is the only town in the island.

The inhabitants of Mull are employed in agriculture and grazing, the latter in the higher lands and mountainous districts.

Chart 2617.

Southern coast.—Aspect.—Dangers.—Beacons.—Rubha nam Maol Mòra, $1\frac{1}{2}$ miles east-south-eastward of the eastern extremity of Eilean a' Chalmain (page 195), has some above-water rocks extending about 2 cables southward from it.

Charts 2515, 3674.

Rubh' Ardalanish, about $1\frac{1}{2}$ miles eastward of Rubha nam Maol Mòra, is 104 feet (31^m7) high, with several above-water rocks, which are steep-to, to close southward of it.

- 10 The coast between Rubh' Ardalanish and Rubha nam Bràithrean, $4\frac{1}{2}$ miles east-north-eastward, is rugged and rocky, and forms Ardalanish bay and several smaller indentations, which are generally unsuitable for anchorages, as the bottom, in any moderate depths, is rocky. Numerous above-water rocks extend in places about $2\frac{1}{2}$ cables offshore.

In northerly and westerly winds, however, sheltered anchorage may be obtained, in a depth of 12 fathoms (21^m9), mud, stones, and sand, with Rubh' Ardalanish bearing 250° , distant about $1\frac{1}{2}$ miles.

Charts 2813, 2515, 3674.

- 20 Between Rubha nam Bràithrean and Leac nan Leum, $2\frac{3}{4}$ miles east-north-eastward, the coast forms a bay with rugged shores and basaltic cliffs, which may be approached to within one cable, except 8 cables north-eastward of Rubha nam Bràithrean, where a detached rock, which dries, lies about 2 cables offshore.

Chart 2813.

The precipitous cliffs on this coast attain their greatest elevation, 964 feet (293^m8), at Leac nan Leum, about 2 cables inland. Carsaig arches, a remarkable natural formation, are situated at the base of these cliffs; the most curious is a pyramidal mass of rock rising to a great elevation, perforated through the middle by an arch, and surmounted by a solitary basaltic pillar. In this locality the cliffs are lined with basaltic columns, some of them attaining a diameter of 7 feet (2^m1).

Between Leac nan Leum and Rubha Dubh, $4\frac{1}{2}$ miles east-north-eastward, the coast forms Carsaig bay, which is fronted and afforded some shelter by Gamhnach Mhòr.

Gamhnach Mhòr (*Lat. $56^\circ 19' N.$, Long. $5^\circ 58' W.$*), about $1\frac{1}{2}$ miles west-south-westward of Rubha Dubh and 3 cables offshore, is a group of above-water rocks, the highest of which has an elevation of 9 feet (2^m7). Rocks and foul ground extend about $3\frac{1}{2}$ cables westward and three-quarters of a cable eastward from the highest islet; and a shoal, with a depth of 10 feet (3^m0) over it, lies about 5 cables west-north-westward of the highest rock. Northward of Gamhnach Mhòr the coast is rocky and foul from one to 2 cables offshore; two perches mark the edge of the rocks on the north-eastern side of the approach to Carsaig quay, which is situated about $3\frac{1}{2}$ cables north-north-westward of the highest rock of Gamhnach Mhòr. The quay dries out at low water.

Carsaig bay is surrounded by high precipitous hills, and it is unsafe to anchor here, except about $1\frac{1}{2}$ cables north-eastward of the western extremity of the largest rock of Gamhnach Mhòr, where small vessels can obtain anchorage, in depths of from 4 to 5 fathoms (7^m3 to 9^m1); small quantities of provisions can be obtained here.

A rock, about one cable south-eastward of Rubha Dubh, dries 2 feet (0^m6).

Chart 2813.

Loch Buie is entered between Rubha Dubh and Rubha na Faoilinn, $1\frac{1}{2}$ miles eastward. The shores of the loch are rocky and steep-to, the land around being high, except for a small area at the head. Eilean Mòr, 13 feet (4 m 0) high, is joined to the shore at the head of the loch by 5 a neck of sand and boulders.

The low ground at the head of Loch Buie is wooded, and on it are Loch Buie house and the ruins of Moie castle. There is a small hard, which almost dries out at low water, at the eastern end of the low point below Cameron farm house, which stands about $7\frac{1}{2}$ cables west- 10 ward of Loch Buie house.

Beinn Buie, $3\frac{1}{2}$ miles north-north-eastward of Rubha Dubh, is 2,349 feet (718 m 0) high.

Loch Buie does not afford safe anchorage, except during fine weather.

Between Rubha na Faoilinn and a headland, about 2 miles east- 15 south-eastward, the coast is rocky and steep-to. About $4\frac{1}{2}$ cables south-eastward of Rubha na Faoilinn is Lord Lovat's bay, close northward of which is Lord Lovat's cave, and immediately south-eastward of it the cliffs attain an elevation of 809 feet (246 m 6).

Frank Lockwood's island, 14 feet (4 m 3) high, flat and rocky, is 20 separated from the headland mentioned above, by a channel half a cable wide with a least depth of 8 feet (2 m 4).

For a description of the western coast of Mull, *see* page 266, of the south-eastern and eastern coasts, pages 206-207, and of the north-eastern coast, pages 278-296. 25

Local magnetic anomaly.—A local magnetic anomaly has been reported in Loch Buie.

Charts 2813, 2515.

Tidal streams.—For tidal streams near Torran rocks and in Sound of Iona *see* page 194. The streams off the southern coast of 30 Mull and in Loch Buie are weak and irregular; weak currents probably run along the coast according to the direction of the prevailing wind.

Off Frank Lockwood's island the north-east-going stream begins +0430 Oban (-0100 Dover), the south-west-going stream begins -0155 Oban (+0500 Dover); the spring rate in each direction about 35 one knot. The north-east-going stream forms an eddy, which runs westward along the coast towards Loch Buie.

The streams begin later, and are stronger, along the coast farther north-eastward. A little southward of the entrance to Loch Spelve (page 206) the north-east-going stream begins about +0515 Oban 40 (-0015 Dover), the south-west-going stream begins about -0105 Oban (+0550 Dover); the spring rate in each direction is about 2 knots.

Charts 2476, 2813, 2515.

FIRTH OF LORNE.—From a line joining Frank Lockwood's island (*Lat.* $56^{\circ} 19' N.$, *Long.* $5^{\circ} 50' W.$) and the northern extremity 45 of Luing island (page 180), Firth of Lorne extends about 11 miles north-eastward to Lynn of Lorne and Lynn of Morvern, the southern arms of Loch Linnhe and the south-eastern entrance to Sound of Mull.

Tidal streams.—In the fairway of the approach to Firth of Lorne well clear of the land, the streams are more or less rotatory clockwise, 50 and are very weak. At a position 7.8 miles 270° from Eilean nan Ròn, the stream is weakest, spring rate 0.5 knot, in a direction about 310° , -0430 Oban (+0225 Dover), strongest, spring rate 1.1 knots in

Charts 2476, 2813, 2515.

a direction 045° , -0200 Oban ($+0455$ Dover), weakest, spring rate 0.3 knot in a direction about 130° , $+0030$ Oban (-0500 Dover), and strongest, spring rate 1.2 knots in a direction 215° , $+0400$ Oban (-0130 Dover).

Between Colonsay and Jura, at a position on the western edge of Tarbert bank 3-4 miles 017° from Rubha Mhail lighthouse, the spring rate varies between 0.4 and 0.7 knot; the stream runs about west-north-westward -0600 Oban ($+0055$ Dover), north-north-eastward 10 in the direction of the fairway -0230 Oban ($+0425$ Dover), east-south-eastward H.W. Oban (-0530 Dover), and south-south-westward in the direction of the fairway $+0300$ Oban (-0230 Dover); the stream is no stronger in north-north-easterly and south-south-westerly directions than it is in west-north-westerly and east-south-easterly 15 directions and, at this position, the Sound of Islay streams have no effect (see page 143).

At a position in the entrance to Firth of Lorne about midway between Colonsay and Mull, the stream is very weak. It runs in directions between about 075° and 085° between about -0100 and 20 $+0200$ Oban ($+0555$ and -0330 Dover), and in directions between about 230° and 250° between about -0430 and -0500 Oban (-0100 and $+0155$ Dover); the spring rate in each direction is about 0.4 knot.

At a position 3.7 miles 232° from Garvellachs lighthouse, the spring rate varies between 0.6 and one knot; the stream runs west-north-westward about -0430 Oban ($+0225$ Dover), north-north-eastward in the direction of the fairway about -0100 Oban ($+0555$ Dover), east-south-eastward about $+0130$ Oban (-0400 Dover), and south-south-westward in the direction of the fairway about $+0500$ Oban 25 (-0030 Dover). The rates are irregular and the stream is no stronger 30 in any special directions, either those of the fairway or of the Gulf of Corryvreckan, than in any other directions.

At these positions the times at which the streams begin to run in directions into and out from Firth of Lorne differ appreciably, and it is not possible to predict the direction and rate for a given place and 35 time with any degree of accuracy, except perhaps westward of the south-western extremity of Oronsay, where the spring rate exceeds one knot.

Charts 2476, 2326, 2159.

Between the western side of Lunga and Insh island, except where there are eddies, the streams run in the general direction of the coast; 40 the north-east going stream begins $+0430$ Oban (-0100 Dover), the south-west-going stream begins -0155 Oban ($+0500$ Dover); the rates of the streams vary greatly from place to place and there are many eddies. In mid-channel between Garvellachs and islands eastward the spring rate in both directions is from 2 to 3 knots; in Firth 45 of Lorne north-westward of Garvellachs it is about one knot; off the western side of Luing the spring rate is from 3 to 3.5 knots, decreasing to the north-eastward to from one to 1.5 knots in the Sound of Insh. On both sides of the channel between Garvellachs and the islands eastward eddies run south-westward during about the second half of 50 the north-east-going stream; westward of Eilean Dubh Mòr an eddy runs northward during the south-west-going stream; on the western side of Dun Chonnuill (Lat. $56^\circ 15' N.$, Long. $5^\circ 54' W.$), and between that island and Garbh eileach, an eddy runs southward during about the second half of the north-east-going stream.



To face page 201.



Eilean a' Chalmain.

Rubha nam Maoil Mòr

Herring about 1877.

Clearing marks for Bogha hùn a Chuoil

Rubha nam Maoil Mòr open southward of Eilean a' Chalmain

(Original date probably 1850.)



Lismore lighthouse from
east-south-eastward.
(Original date 1813.)



Corran Point lighthouse from eastward.
(Original date 1813.)

Charts 2476, 2326, 2159.

There are overfalls off the south-western extremity of Easdale island during the south-east-going stream, when also eddies run westward along the northern shore of Easdale bay and along the southern coast of Easdale island. In Easdale sound the north-west-going stream begins +0600 Oban (+0030 Dover), the south-east-going stream begins -0030 Oban (-0600 Dover); the spring rate in each direction off the pier is 1.2 knots.

Between Insh island (*Lat. 56° 19' N., Long. 5° 40' W.*) and Rubha na Feundain, the north-east-going stream begins +0430 Oban (-0100 10 Dover), the south-west-going stream begins -0155 Oban (+0500 Dover); the spring rate in each direction near Dubh sgeir and Bogha Nuadh is about 2.5 knots, but is less elsewhere; the streams are weak in the bay east of a line Rubha Garbh Airde to Rubha na Feundain, but increase towards the entrances to Clachan sound (see page 189). Loch 15 Geochan and Kerrera sound.

The streams run more strongly, and probably also more regularly, near the detached islets and shoals in the approach. Thus near Duh Artach the north-east-going stream begins +0600 Oban (+0030 Dover), and the south-west-going stream -0015 Oban (-0545 20 Dover); the spring rate in each direction is about 1.5 knots, but is more over the rocks which cover and uncover in the vicinity.

In mid-channel in the Firth the north-east-going stream begins +0430 Oban (-0100 Dover), the south-west-going stream begins -0155 Oban (+0500 Dover). In the outer part of the Firth between 25 Garvellachs and Loch Buie the stream is weak but it increases farther up the Firth to about 1.5 knots between Kerrera and Loch Don; there is no further increase north-eastward towards Lynn of Lorne but northward, between the Mull coast and the south-western extremity of Lismore, the streams run very strongly. 30

For continuation north-eastward see page 219.

Charts 2476, 3607.

Lights.—A light is exhibited, at an elevation of 45 feet (13^m7), from William Black's memorial tower, a grey granite building 30 feet (9^m1) in height, situated at the western side of the southern entrance 35 to the Sound of Mull.

A light is exhibited, at an elevation of 40 feet (12^m2), from a red circular structure on a white beacon, 40 feet (12^m2) in height, situated on Lady's rock, about 9½ cables eastward of William Black's memorial tower. 40

Lismore light is exhibited, at an elevation of 103 feet (31^m4), from a white tower, 86 feet (26^m2) in height, situated at the south-western end of Eilean Musdile, about 5½ cables north-eastward of Lady's rock light. See view facing this page.

Submarine cables.—Beacons.—For submarine cables and beacons 45 southward of William Black's memorial tower, see page 7.

Chart 2476, 2159.

Islets and dangers.—Light-buoys.—Dubh-fheith, Bogha Nuadh, and Bogha Ghair, on the south-eastern side of the entrance to Firth of Lorne, from 1½ to 2½ miles westward of the northern extremity of 50 Luing island, are described on page 183.

Sgeir nam Faoileann, about 4 cables northward of Cuan point and about one cable from the western side of Seil (page 184), is 8 feet (2^m4) high; foul ground extends about 1½ cables south-south-westward

Charts 2476, 2159.

and half a cable westward and north-westward from this rock. The eastern extremity of Easdale island (*Lat. 56° 18' N., Long. 5° 39' W.*) (see below) in line with the western extremity of Rubha Mhic Mharcuis, 5 3½ cables north-north-westward, bearing 346°, leads westward of Sgeir nam Faoileann and the foul ground in its vicinity.

A rock, with a depth of 13 feet (4^m0) over it, lies in the north-western entrance to Cuan sound, about one cable northward of Cuan point; a patch, with a depth of 28 feet (8^m5) over it, lies midway between 10 Cuan point and the south-eastern extremity of Easdale island, and about 2 cables offshore.

Between Cuan point and the eastern extremity of Easdale island the coast is foul and rocky, and should not be approached to within 1½ cables.

15 Easdale island is separated from the western extremity of Seil by Easdale sound. Easdale island is low, but in its centre is a green hill, 119 feet (36^m3) high; shoal ground extends about three-quarters of a cable south-south-westward from Rubha nam Faoileann, the south-western extremity of Easdale island.

20 Insh island lies with its southern extremity about 8½ cables north-north-westward of the north-western extremity of Easdale island; it is 224 feet (68^m3) high; and is separated from Seil by the Sound of Insh, a deep channel, about three-quarters of a mile wide, and free from dangers. Sgeir Beul na h Uamhaidh, 12 feet (3^m7) high, lies 25 about 2½ cables south-south-eastward of the northern extremity of Insh island and about three-quarters of a cable from its eastern side. Foul ground extends about 1½ cables westward, and some sunken rocks extend about 1½ cables northward, of the northern extremity of Insh island. Dubh sgeir, about 3½ cables north-eastward of the 30 northern extremity of Insh island, is a small rock, 16 feet (4^m9) high; a shoal, with a depth of 8 feet (2^m4) over it, lies about 2 cables westward of Dubh sgeir; shoals, with depths of 11 feet (3^m4) and 12 feet (3^m7) over them, lie, respectively, 2½ cables west-north-westward and 3½ cables northward of Dubh sgeir, and a rock, which dries 6 feet (1^m8), 35 lies about one cable north-eastward of Dubh sgeir.

Dubh-fheith, bearing 204° and open north-westward of Insh island, leads north-westward, and bearing 214° and open south-eastward of Insh island, leads south-eastward of Dubh sgeir and the rocks and shoals in its vicinity. The northern extremity of Eilean Duin (see 40 below), in line with Beinn Mòr, 630 feet (192^m0) high, one mile eastward of Eilean Duin, bearing 085°, leads northward of these dangers; there is a remarkable excrescence, known as the Toad of Lorne, on the north-eastern shoulder of Beinn Mòr.

A group of islets and rocks, above-water and sunken, of which 45 Eilean Duin (*Lat. 56° 20' N., Long. 5° 35' W.*), 70 feet (21^m3) high, is the northernmost, extends about 5½ cables north-west from the north-eastern end of Seil.

A shoal, with a depth of 6 feet (1^m8) over it, about 1½ miles north-eastward of the northern extremity of Eilean Duin, lies about 1½ cables offshore. Rubha Garbh Airde, 9 cables west-south-westward of Eilean Duin, bearing 230° and open north-westward of Eilean Duin, leads north-westward of this shoal.

Bogha Nuadh, about 2½ miles north-westward of Eilean Duin, has a least depth of one foot (0^m3) over it, and is marked on its southern

Charts 2476, 2159.

side by a spherical light-buoy, painted black and white in horizontal bands, and exhibiting a *white flashing light every six seconds*; a narrow ridge, with depths of from $6\frac{1}{2}$ to 20 fathoms (12^m2 to 36^m6), connects Bogha Nuadh with Insh island.

5

Dubh-sheith, bearing 204° and open north-westward of Insh island, leads westward; the south-eastern extremity of Dubh sgeir (see below), in line with the summit of Bach island (see below), bearing 035° , leads south-eastward; and the centre of Dubh sgeir in line with Rubha Seanach, 2 miles eastward, bearing 085° , leads northward, of Bogha 10 Nuadh.

Dubh sgeir is a bifurcated islet situated about 4 cables north-eastward of Bogha Nuadh. A shoal bank extends three-quarters of a cable westward from its southern end and three-quarters of a cable north-westward from its northern extremity.

15

On the north-western side of the firth, close southward of the entrance to Loch Spelve, foul ground extends $1\frac{1}{2}$ cables offshore.

Bach island, about $3\frac{1}{2}$ cables west-north-westward of Rubha na Feundain, the south-western extremity of Kerrera, is low and flat, except in the centre, where a vertical-sided knoll attains an elevation of 20 55 feet (16^m8).

Charts 1790, 2476.

Kerrera is rugged and attains an elevation at Carn Breugach, $1\frac{1}{2}$ miles east-north-eastward of Rubha na Feundain, of 612 feet (186^m5); it is separated from the mainland by Kerrera sound at the north-eastern end 25 of which is the town of Oban. Rubha Seanach, the southern extremity of Kerrera, is low, rocky, and steep-to, as is Rubha na Feundain.

Chart 1790.

Eilean nan Gamhna, about $1\frac{1}{2}$ miles west-south-westward of the northern extremity of Kerrera, is the largest of a group of islets, connected with each other at low water, which lie close off the north-western side of Kerrera. About $1\frac{1}{2}$ cables north-westward of the north-western extremity of Eilean nan Gamhna is a shoal, with a depth of 23 feet (7^m0) over it. Sgeir Dhonn, about $4\frac{1}{2}$ cables east-north-eastward of this group, in line with Ardantrive hill (*Lat. $56^\circ 25' N.$, Long. $5^\circ 30' W.$*), 7 cables farther eastward, bearing 090° , leads northward of this shoal.

Eidean nan Uan, 13 feet (4^m0) high, lies about $2\frac{1}{2}$ cables east-south-eastward of the north-eastern extremity of the Eilean nan Gamhna group and about three-quarters of a cable from the north-western side 40 of Kerrera; a reef, which dries 4 feet (1^m2), and a rock, which dries 3 feet (0^m9), lie half a cable and $1\frac{1}{2}$ cables north-north-westward, respectively, of Eilean nan Uan.

Sgeir Dhonn is a group of small rocks, 2 feet (0^m6) high; these rocks lie on a hank, with depths of less than 3 fathoms (5^m5) over it, 45 extending, in places, half a cable from them. Rubha na Lice, 2 miles north-north-eastward of Rubha nan Feundain (chart 2476), bearing about 240° and open north-westward of Eilean nan Gamhna; or Dunollie castle, about half a mile eastward of Rubh' a' Bhearnaig, the northern extremity of Kerrera, bearing 083° and seen over Rubh' 50 a' Bhearnaig, leads northward of Sgeir Dhonn.

The ruins of Dunollie castle stand on the summit of a precipitous cliff within Carraig Mhicheil, a rounded point attaining an elevation of 143 feet (43^m6); being covered with ivy the castle does not show up.

Chart 1790.

except from northward or southward. There is a flagstaff on this castle during the summer months. Dunollic house is about half a cable north-eastward of the castle.

- 5 Wilson rock, about half a cable south-westward of Rubha' a' Bhearnaig, dries about 11 feet (3^m4), and is steep-to on its western side. The southern extremity of Maiden island (page 210), bearing about 054° and open north-westward of Rubha' a' Bhearnaig, leads north-westward of this rock.

10 Chart 2476.

Close northward of Loch Don, on the western side of the Firth, foul ground extends about 2 cables offshore.

- Lady's rock (page 201) only covers during equinoctial springs ; it is surrounded by a bank, with depths of less than 3 fathoms (5^m5) over it, extending from a quarter to half a cable from it. A shoal, with a depth of 20 feet (6^m1) over it, lies about half a cable north-westward of the rock. Lady's rock and the shoals in its vicinity are covered by the red sector of the light on William Black's memorial tower, between the bearings of 261° and 275° .

- 20 Lady's rock lies nearly in the entrance to Sound of Mull, and great caution is requisite when passing near it on account of the tidal streams, which, even during fine weather, occasion a heavy race in the vicinity of the rock and across the channel between it and Eilean Musdile (*Lat. $56^\circ 27' N.$, Long. $5^\circ 36' W.$*), $4\frac{1}{2}$ cables north-eastward. With 25 strong winds and opposing tidal streams the overfalls and race are dangerous to small vessels, and should be avoided.

- Submarine cables.**—Three submarine cables, the directions of which are indicated on the chart, cross the northern end of Firth of Lorne ; the shore ends of these cables are marked by beacons each 30 surmounted by a diamond. See page 7.

ANCHORAGES AND LOCHS IN FIRTH OF LORNE.—

- Easdale sound.**—Easdale sound, between the eastern side of Easdale island and the western extremity of Seil, is a narrow channel, and is only available for small vessels with local knowledge. The rocks and 35 shoals extending from the shore contract the width of the navigable channel to about 50 feet (15^m2) in places.

Vessels are berthed, generally, on the western side of the channel, where they are out of the tidal streams. In addition to anchoring, hawsers are laid out to the shore.

- 40 There is a wooden pier, with a T-head, with a least depth, in 1936, of 9 feet (2^m7) alongside, on the eastern side of the sound, near its southern end. In 1951, this pier was in ruins ; the steps on the inshore side of the T-head are used by the motor-boat ferry to Easdale island.

- 45 There is a post office and telephone at Caolas. A small quantity of provisions can be obtained at Easdale.

- Dangers.—Beacons.**—Lord's rock, with a depth of 6 feet (1^m8) over it, situated just southward of the southern entrance to Easdale sound and about half a cable south-eastward of the eastern extremity 50 of Easdale island. East rock, lying on the eastern side of the southern entrance, about three-quarters of a cable north-north-eastward of the eastern extremity of Easdale island, dries one foot (0^m3), and is marked by a red beacon, 19 feet (5^m8) high. South rock, about one cable

Chart 2476.

north-north-westward of the eastern extremity of Easdale island, dries 2 feet (0^m6), and is marked by a black beacon, 19 feet (5^m8) high. Mid rock, in the fairway of the sound, about $2\frac{1}{2}$ cables north-north-westward of the eastern extremity of Easdale island, dries 2 feet (0^m6) and is marked by an iron pillar surmounted by a ball, painted black and 19 feet (5^m8) high ; there is a channel westward of this rock, but vessels usually pass eastward of it. An iron pillar surmounted by a ball, painted red and 19 feet (5^m8) high, stands on the outer edge of the rocky ledges extending from the eastern shore of the sound, north-eastward of Mid rock. North rock, situated in the northern entrance, about 3 cables north-north-westward of the eastern extremity of Easdale island (*Lat. $56^{\circ} 18' N.$, Long. $5^{\circ} 39' W.$*), has a least depth of 2 feet (0^m6) over it ; a shoal, with a depth of 4 feet (1^m2) over it, lies close westward of North rock. *15*

In 1936, the bank of stones on the north-eastern side of Easdale island was extending southward.

The maintenance of the navigational beacons in Easdale sound has been discontinued since 1956.

Submarine cables.—Beacons.—A submarine cable, indicated on the chart, crosses the sound ; each landing place is marked by a beacon. A submarine power cable crosses the sound close south-eastward of this submarine cable. *See page 7.* *20*

Tidal streams.—*See page 201.*

Ardencaple bay and Barrnacarry bay.—Ardencaple bay, which is entered close eastward of Rubha Garbh Airde, is not recommended, except as a temporary anchorage. A vessel should anchor with the summit of Eilean Duin bearing 025° , distant 7 cables, in a depth of 9 fathoms (16^m5), mud. A rock, with a depth of 2 fathoms (3^m7) over it, lies in the middle of the bay about $5\frac{1}{2}$ cables eastward of Rubha Garbh Airde. A shoal, with a least depth of 7 feet (2^m1) over it, lies $6\frac{1}{2}$ cables north-eastward of the same point. *25*

Small vessels with local knowledge can anchor in the bay southward of Eilean nam Beathach, situated about $1\frac{1}{2}$ cables south-eastward of Eilean Duin, with the summit of Eilean Duin bearing about $347^{\circ} 35'$ distant about $4\frac{1}{2}$ cables. *30*

A patch, with a depth of 21 feet (6^m4) over it, lies about 8 cables north-eastward of Rubha Garbh Airde. *35*

Barrnacarry bay, is entered about $1\frac{1}{2}$ miles east-north-eastward of Eilean Duin. It is a small shallow bay, encumbered with rocks, but affords anchorage to small vessels with local knowledge, with shelter from winds from west, through south, to east. *40*

Foul ground extends about $1\frac{1}{4}$ cables north-north-eastward from the western entrance point, and a shoal, with a depth of 12 feet (3^m7) over it, lies about $1\frac{3}{4}$ cables west-north-westward of the eastern entrance point. *45*

Chart 2476 with inset, Continuation of Loch Feochan.

Loch Feochan.—Loch Feochan is entered between the eastern entrance point of Barrnacarry bay, and Minard point, $2\frac{1}{2}$ cables north-north-eastward. A small steep islet, 4 feet (1^m2) high, lies about 50 $2\frac{1}{2}$ cables eastward of the southern entrance point of the bay. The head of the loch dries out about $1\frac{1}{2}$ cables. *50*

About 4 cables within the entrance there is a bar of mud and shingle. The navigable channel, which is along the northern shore of the loch,

Chart 2476, with inset, Continuation of Loch Feochan.

has a least depth of about 2 feet ($0^m 6$) ; this channel, which is only available for small vessels with local knowledge, is too narrow and tortuous to be navigated until the last quarter flood.

- 5 A second bar, about $8\frac{1}{2}$ cables within the first bar, has an islet on it lying in about mid-channel ; the deeper channel is on the northern side of this islet.

River Euchar flows into Loch Feochan, on its southern side, about $8\frac{1}{2}$ cables within the entrance.

- 10 There is anchorage on the northern side of the loch, about $2\frac{1}{2}$ cables east-south-eastward of Ardentallan house, which is situated about 11 cables east-north-eastward of Minard point (*Lat. $56^{\circ} 21' N.$, Long. $5^{\circ} 32' W.$*), in a depth of about 5 fathoms ($9^m 1$). There is a jetty on the northern shore, close to the anchorage.

- 15 **Tidal streams.**—The entrance of Loch Feochan is much obstructed and, at low water springs, the water level is about 3 feet ($0^m 9$) lower outside the loch than it is inside ; consequently the in-going stream does not begin till the tide outside the loch has risen 3 feet ($0^m 9$) from low water, but the out-going stream begins soon after high water.

- 20 In the entrance the in-going stream begins —0355 Oban (+0300 Dover), the out-going stream begins —0030 Oban (-0500 Dover) ; the spring rate in each direction is about 5 knots.

In the loch the streams are negligible.

- Anchorages on southern, western, and northern sides of Kerrera.**—The southern coast of Kerrera is too much exposed except for temporary anchorage.

- Temporary anchorage, with shelter from northerly winds, can be obtained in Ardmore bay, about $5\frac{1}{2}$ cables north-north-westward of Rubha Seanach and about $1\frac{1}{2}$ cables offshore, in a depth of about 30 11 fathoms ($20^m 1$), sand and clay.

Eilean Orasaig, on the north-western side of this bay, is connected with Kerrera by a reef that dries. The ruins of Gylen castle lie on the cliffs, about 5 cables eastward of the north-eastern extremity of Eilean Orasaig.

- 35 Port Phadruig, about 8 cables north-north-eastward, and Bar nam boc, $1\frac{1}{4}$ miles north-north-eastward of Rubha na Feundain, are two small bays on the western side of Kerrera ; they afford no anchorage.

Chart 1790.

- 40 Oitir Mhòr bay, close eastward of Eilean nan Uan, affords sheltered anchorage to small vessels, except with winds from between north-north-west to east-north-east.

The best berth for small vessels is with Rubh' a' Bhearnaig in line with the summit of Maiden island (page 210), bearing about 047° , 45 and the southern extremity of Eilean nan Uan in line with the southern edge of the hill, 61 feet ($18^m 6$) high, in the centre of Eilean nan Gamhna, bearing about 264° , in a depth of 6 fathoms ($11^m 0$), mud. Larger vessels may obtain anchorage, in a depth of 10 fathoms ($18^m 3$), mud, with the north-western extremity of Maiden island bearing 051° , 50 distant 8 cables.

Chart 2813.

Loch Spelve.—Loch Spelve is entered between Rubha na Faoilinn, about 7 miles north-eastward of Frank Lockwood's island (*Lat. $56^{\circ} 19' N.$, Long. $5^{\circ} 50' W.$*), and Rubha nan Sailthean, about 4 cables

Chart 2813.

westward. Within the entrance, the navigable channel is contracted to a width of about 50 yards (45^m7), by a bank with depths of less than 3 fathoms (5^m5) over it, extending about 2 cables from the southern shore. About one mile within the entrance the loch opens out, and divides into two arms ; one arm extends about $2\frac{1}{2}$ miles west-south-westward and the other about $1\frac{1}{2}$ miles northward. 5

The head of the south-western arm is 3 cables eastward of Loch Uisg, a narrow lake of fresh water, the surplus water from which flows into the head of Loch Buie (page 198). 10

There is a pier at Croggan on the southern shore of Loch Spelve, about one mile within the entrance to the loch, with depths of 9 feet (2^m7) alongside its head.

The best anchorage is in a bight on the western side of the head of the northern arm, about $1\frac{1}{4}$ miles north-north-westward of the 15 pier at Croggan.

Local magnetic anomaly.—A local magnetic anomaly has been reported in Loch Spelve.

Tidal streams.—In the entrance the in-going stream begins about —0530 Oban (+0125 Dover) and the out-going stream begins about +0015 Oban (—0515 Dover) ; the spring rate in each direction is from 3.5 to 4 knots. There are strong eddies and overfalls in the channel.

In the loch the streams are negligible.

Chart 2476.

Loch Don.—Loch Don is entered about $2\frac{1}{4}$ miles north-north-eastward of Rubha na Faoillinn ; it is narrow and shallow, and is only used by small vessels waiting for the favourable tidal stream to enter the Sound of Mull. The head of the loch dries out about $7\frac{1}{2}$ cables. 25

Just within the southern entrance point of Loch Don, there is a boat pier and a small white cottage. 30

Charts 2476, 2515.

Shelter can be obtained from winds between south-west and north-west off the entrance to the loch, in a depth of about 6 fathoms (11^m0), with the north-eastern extremity of Garvellachs (page 178) bearing 197° and just open eastward of the extremity of the land southward of the entrance to the loch. The anchorage is very limited as the depths increase suddenly from 6 to 13 fathoms (11^m0 to 23^m8), in which depths the tidal streams attain a rate of from $2\frac{1}{2}$ to 3 knots at springs. 35

Tidal streams.—Off the entrance to Loch Don the north-going stream begins +0600 Oban (+0030 Dover), and the south-going stream begins —0015 Oban (—0545 Dover) ; the spring rate in each direction from 2.5 to 3 knots. 40

Overfalls extend about half a mile eastward from the entrance to Loch Don during the north-going stream. 45

Chart 1790.

OBAN AND APPROACHES.—Kerrera sound.—Kerrera sound, between Kerrera (page 203) and the mainland eastward, is about a quarter of a mile wide, opening out abreast Oban (*Lat. $56^\circ 25' N.$, Long. $5^\circ 28' W.$*) to a width of about three-quarters of a mile. It is 50 a safe navigable channel, forming the approach to Oban. There are several shoals in the approaches, but they are mostly marked, and during daylight easily avoided.

Chart 1790.

Submarine cables.—Beacons.—Light.—Transatlantic submarine cables, indicated on the chart, cross the southern entrance to Kerrera sound to Port Lathaich, situated about $1\frac{1}{2}$ miles north-eastward of Rubha Seanach (page 203). Two beacons, from the inner one of which a light is exhibited, mark the landing place of these cables ; see page 7.

Tidal streams.—In mid-channel the streams run in the direction of the channel ; the north-east-going stream begins +0430 Oban 10 — (0100 Dover), the south-west-going stream begins -0155 Oban (+0500 Dover) ; the spring rate in each direction is from one to 1.5 knots in the wider parts of the channel, from 1.5 to 2 knots in the channels on both sides of Ferry rocks, and from 2 to 2.5 knots in the northern entrance, off Dunollie light-tower ; there are probably eddies 15 in the bays on both sides of the channel. The streams are weak in Oban bay.

Southern part of Kerrera sound.—Light.—Islet and dangers.—Buoyage.—A light is exhibited, at an elevation of 24 feet (7^m3), from a white circular structure on a concrete base, 22 feet (6^m7) in 20 height, situated at the northern end of Sgeirean Dubha, about $9\frac{1}{2}$ cables north-eastward of Rubha Seanach.

A shoal, with a depth of 14 feet (4^m3) over it, lies about $3\frac{1}{2}$ cables south-westward of Sgeiran Dubha light-structure and about three-quarters of a cable from the eastern side of Kerrera. Cutter rock, 25 about $1\frac{1}{2}$ cables south-south-westward of Sgeirean Dubha light-structure and about three-quarters of a cable from Kerrera, dries 6 feet (1^m8) ; it is the southernmost rock of a reef extending south-south-westward from Sgeirean Dubha. Sgeirean Dubha, about $1\frac{1}{2}$ cables from Kerrera, are a group of above-water rocks.

30 Dunollie castle (page 203), bearing 031° and seen over the eastern bluff of Kerrera, or, as this mark is somewhat indistinct at times, Creag Moraig, a hill $2\frac{1}{2}$ cables south-eastward of Dunollie lighthouse (*Lat. $56^{\circ} 25' N.$, Long. $5^{\circ} 29' W.$*), bearing 037° and seen, together with the houses on the northern shore of Oban bay, over the promontory on the south-eastern side of the sound under Dun Uabairtich, a hill, 285 feet (86^m9) high, $1\frac{1}{2}$ miles south-westward of Creag Moraig, leads south-eastward of the dangers described above.

Sgeir an Fheurain, situated about half a cable north-north-westward of Rubh' an Fheurain, a promontory, 15 feet (4^m6) high, on the south-eastern side of the sound about $2\frac{1}{2}$ cables eastward of Sgeirean Dubha lighthouse, is a rock which dries one foot (0^m3). Shoal water extends about half a cable west-south-westward from this rock, and the navigable channel between it and Sgeirean Dubha is about $1\frac{1}{2}$ cables wide ; a shoal, with a depth of 23 feet (7^m0) over it, lies about one 45 cable northward of Sgeir an Fheurain.

Little Horseshoe shoal, situated on the north-western side of the sound, in the entrance to Little Horseshoe bay, about 5 cables north-north-eastward of Sgeirean Dubha lighthouse, has a least depth of 2 feet (0^m6) over it, and is marked near its south-eastern end by a red 50 can buoy. Between Sgeirean Dubha and Little Horseshoe shoal, a bank, with depths of less than 3 fathoms (5^m5) over it, extends about three-quarters of a cable off the north-western shore of the sound.

Charts 1790, 2476.

The north-western extremity of Seil (page 184) in line with the

Charts 1790, 2476.

south-eastern extremity of Kerrera south-westward of Sgeirean Duhha, bearing 219° , leads close south-eastward of Little Horseshoe shoal.

Chart 1790.

A spit, with a depth of 8 feet (1^m2), rock, over its extremity, extends about $1\frac{1}{2}$ cables from the north-western shore of the sound, about 11 cables north-north-eastward of Sgeirean Dubha lighthouse. Rubh' an Fheureain in line with the western extremity of Ard na Cùile, a promontory about 5 cables south-south-westward, bearing 195° , leads close eastward of this spit. 10

Ferry rocks, situated in the fairway, about $1\frac{1}{2}$ miles north-eastward of Sgeirean Duhha lighthouse, consist of two detached groups of sunken rocks, of which the south-eastern has a least depth of one foot (0^m3) over it, and the north-western of 9 feet (2^m7) over it. A red can buoy marks the south-eastern side of the south-eastern group; the western side of the north-western group is marked by a conical light-buoy, painted black and exhibiting a *white flashing light every six seconds*. There are channels eastward and westward of Ferry rocks. 15

A patch, with a depth of 11 feet (3^m4) over it, lies $1\frac{1}{2}$ cables south-westward; and a rock, with a depth of 5 feet (1^m5) over it, lies about three-quarters of a cable eastward of Ruhha Tolmach, a promontory on the south-eastern side of the sound about 5 cables north-north-eastward of Dùn Uabairtich (*Lat. $56^{\circ} 24' N.$, Long. $5^{\circ} 31' W.$*). The latter is marked on its western side by a black conical buoy; there is a narrow channel eastward of this rock, with depths of from 23 to 32 25 feet (7^m0 to 9^m8).

Northern part of Kerrera sound.—Lights.—Islands and dangers.—Buoyage.—Beacon.—Heather island (*Lat. $56^{\circ} 24' N.$, Long. $5^{\circ} 30' W.$*), the southern extremity of which is situated about $2\frac{1}{2}$ cables northward of Ruhha Tolmach and about $1\frac{1}{2}$ cables from the north-western shore of the sound, is 35 feet (10^m7) high; an islet, to which it is joined by a reef that dries, lies close northward of its north-eastern end. A shoal, with a depth of 3 feet (0^m9) over it, lies about $1\frac{1}{2}$ cables westward of the southern extremity of Heather island. The main channel is south-eastward of the island. 35

There is a mooring buoy about half a cable north-westward of the islet lying close northward of Heather island; another mooring buoy, for the use of the reserve light-float, is moored about three-quarters of a cable north-north-eastward of the same islet.

A shoal, with a depth of 3 fathoms (5^m5) over it, lies 5 cables north-eastward of Ruhha Tolmach, and a shoal, with a depth of 4 fathoms (7^m3), rock over it, lies about half a cable farther northward. Four mooring buoys are moored between these shoals and the south-eastern shore of the sound. 40

Sgeir Rathaid lies about 8 cables north-eastward of Rubha Tolmach in the entrance to Oban bay; it dries 2 feet (0^m6) at its southern end. A shoal, with a least depth of 14 feet (4^m3) over it, lies about $1\frac{1}{2}$ cables south-eastward of the southern extremity of Sgeir Rathaid. 45

A detached patch, with a depth of 15 feet (4^m6) over it, lies about a quarter of a cable south-eastward of the south-eastern extremity of Sgeir Rathaid. A spherical light-buoy, painted black and white in horizontal bands and exhibiting a *white group flashing light showing three flashes every fifteen seconds*, is moored off the southern end of Sgeir Rathaid, and a spherical light-buoy painted red and white in

Chart 1790.

horizontal hands, and exhibiting a *white flashing light every six seconds*, is moored off the northern end of this shoal.

Dunollie light is exhibited, at an elevation of 22 feet (6^m7), from a stone tower, 19 feet (5^m8) in height, situated on the low cliff on the eastern side of the northern entrance to Kerrera sound, about $5\frac{1}{2}$ cables east-south-eastward of Rubha 'a' Bhearnaig, the northern extremity of Kerrera.

Corran ledge, a bank of rocks and shingle, extends from the north-eastern shore of Oban bay under Creag Moraig, and dries out one cable. A sewer outfall runs out across the ledge. A can light-buoy, painted red and exhibiting a *red flashing light every six seconds*, is moored at the western edge of Corran ledge and marks the extremity of the sewer outfall.

15 The southern extremity of North pier (see page 211) in line with the square tower of the Free church, $2\frac{1}{2}$ cables south-eastward, bearing 128° , leads south-westward; and the eastern extremity of Maiden island, in line with the eastern part of Creag island (page 222), bearing 343° , leads westward of Corran ledge.

20 Rubha Chruidh (*Lat. $56^\circ 25' N.$, Long. $5^\circ 29' W.$*), an islet lying on the western side of the northern entrance, about $1\frac{1}{2}$ cables west-south-westward of Dunollie light-tower and close off the north-eastern end of Kerrera, to which it is joined by a reef which dries, is 22 feet (6^m7) high. A rock, 3 feet (0^m9) high, is situated close eastward of the 25 north-eastern extremity of Rubha Chruidh; and a bank, with depths of less than 3 fathoms (5^m5) over it, extends about half a cable eastward from the eastern side of this islet.

Dog stone, near the coast half a cable northward of Dunollie light-tower, is an isolated mass of rock about 40 feet (12^m2) high, resembling 30 a pillar surmounted by vegetation.

A light is exhibited, at an elevation of 23 feet (7^m0), from a red iron framework beacon, surmounted by a cylinder, 33 feet (10^m1) in height, situated on the extremity of a ledge of rocks extending north-eastward from the north-eastern end of Kerrera. A shoal bank extends about 35 a quarter of a cable eastward from the light-beacon.

Maiden island, 87 feet (26^m5) high, and steep-to, except off its south-western end where foul ground extends 50 yards (45^m7) westward, lies $2\frac{1}{2}$ cables northward of the light-beacon just mentioned. Reefs extend from the mainland to within about 40 yards (36^m6) of the 40 eastern side of this island. The channel close eastward of Maiden island is much used by local vessels, but requires local knowledge.

Ferry.—**Submarine cables.**—**Beacons.**—A ferry, the route of which is marked by a pecked line on the chart, crosses Kerrera sound between Ferry pier, on the eastern coast of Kerrera, about $6\frac{1}{2}$ cables south-westward of the southern extremity of Heather island, and a slip on the mainland.

Two submarine cables, indicated on the chart, cross the sound just north-eastward of the ferry track; they are marked at each end by a notice board, shown as a beacon on the chart. See page 7.

50 **Anchorages.**—Small vessels can obtain anchorage on the north-western side of Kerrera sound, about half a cable west-north-westward of Sgeirean Dubha lighthouse, in a depth of 7 fathoms (12^m8).

Little Horseshoe bay affords anchorage to small vessels about $4\frac{1}{2}$ cables north-north-eastward of Sgeirean Dubha light-structure, in

Chart 1790.

depths of from $1\frac{1}{2}$ to 3 fathoms ($2^{\text{m}}7$ to $5^{\text{m}}5$), good holding ground. A vessel can enter Little Horseshoe bay on either side of Little Horseshoe shoal, but if passing south-westward care should be taken to avoid Sgeir Ruadh, a rocky spur extending half a cable north-eastward from the southern entrance point of the bay ; a shoal bank extends about 70 yards ($64^{\text{m}}0$) farther north-eastward. 5

There is a slip and a small boat-building yard (disused in 1951), in Port nan Cuile, on the eastern side of the sound $2\frac{1}{2}$ cables south-south-westward of Dùn Uabairtich (page 208). 10

Horseshoe bay, which is entered about 4 cables north-eastward of the northern entrance point of Little Horseshoe bay, is sheltered and the holding ground is good. A vessel anchoring here should be careful to avoid the spit which extends about one cable from the shore.

Ardantrive bay, which is entered close southward of Rubha Chruidh (*Lat. $56^{\circ} 25' N.$, Long. $5^{\circ} 30' W.$*), affords well-sheltered anchorage with good holding ground, in depths of from $5\frac{1}{2}$ to 10 fathoms ($10^{\text{m}}1$ to $18^{\text{m}}3$), and during strong north-westerly winds is preferable to Oban bay. Care should be taken to avoid a rocky spur which dries 8 feet ($1^{\text{m}}8$) and extends about three-quarters of a cable north-north-eastward from Mount Pleasant, the southern entrance point. A bank, with a least depth of one foot ($0^{\text{m}}3$) over it, extends a further half a cable north-north-eastward. 20

There are several mooring buoys in the bay and there is a mooring buoy, marked Lighthouse Tender outside the entrance of the bay. 25

Port Mòr, on the eastern side of Kerrera sound, at its northern end, between Dog stone and Dunollie castle, is shallow and fringed with rocks.

There is a jetty and disused slip in Ardantrive bay.

Oban bay.—Lights.—Oban bay, situated on the south-eastern side of Kerrera sound, at its north-eastern end, is a much frequented anchorage. The town of Oban is situated on its shores. On the south-eastern side of the bay, on the top of a hill, about $2\frac{1}{2}$ cables east-south-eastward of the light on the North pier (see below) is the ruin of a hydropathic establishment. The eastern shore attains an elevation of about 250 feet ($76^{\text{m}}2$), the slopes being studded with villas amongst pine woods ; McCaig tower, a circular building, 14 feet ($4^{\text{m}}3$) in height, situated on a hill 242 feet ($73^{\text{m}}8$) high, about 2 cables eastward of North Pier light-column, is conspicuous. The northern side of the bay is backed by well-wooded hills, amongst which is Creag Moraig, about 150 feet ($45^{\text{m}}7$) high. 40

A light is exhibited from the middle of Northern Lights wharf, on the southern side of Oban bay.

A light is exhibited, at an elevation of 17 feet ($5^{\text{m}}2$), from a column, 13 feet ($4^{\text{m}}0$) in height, situated on the middle of South quay, about half a cable east-south-eastward of the light on Northern Lights wharf. 45

A light is exhibited, at an elevation of 27 feet ($8^{\text{m}}2$), from a column, 20 feet ($6^{\text{m}}1$) in height, situated on the middle of North pier, about $2\frac{1}{2}$ cables north-eastward of the light on South quay. 50

There is a least depth in the approach to Oban bay from south-westward through Kerrera sound of 4 fathoms ($7^{\text{m}}3$) in the channel between Ferry rocks and Kerrera, and of 7 fathoms ($12^{\text{m}}8$) in the channel between Ferry rocks and the mainland.

Chart 1790.

There is a least depth of 8 fathoms ($14^{\text{m}} 6$) in the northern approach.

Anchorage.—Oban bay is very deep for anchoring in, and should be used with caution. The holding ground is bad, and south-westerly winds blow with great force up Kerrera sound. Ships with high free-board should vacate the anchorage during strong south-westerly gales.

Two channels leading to North pier are marked by small buoys during the yachting season, and anchorage is prohibited within them.

10 The southern channel is close southward of two red buoys, moored about half a cable from the southern shore ; the northern channel is north-eastward of two red buoys, which are moored north-eastward of the two southern red buoys, and south-westward of a black buoy, which is moored about $2\frac{1}{2}$ cables north-westward of the North Pier

15 light-column.

Directions.—A vessel approaching Oban (*Lat. $56^{\circ} 25'$ N., Long. $5^{\circ} 29'$ W.*) from southward through Kerrera sound, should steer to pass about three-quarters of a cable eastward of Sgeirean Dubha, the clearing marks for which were given on page 208. After passing 20 eastward of Sgeirean Dubha she should keep in mid-channel until abreast Ferry pier, whence she should steer to pass between Kerrera and Ferry Rocks light-buoy. When the south-eastern side of Heather island is in line with the Roman Catholic cathedral, situated one mile north-eastward of the southern end of Heather island, bearing about 25 047° , the vessel should steer to pass south-eastward of Heather island and on either side of Sgeir Rathaid into Oban bay. The depth in mid-channel between the south-eastern side of Sgeir Rathaid, and the mainland south-eastward is 29 feet ($8^{\text{m}} 8$) ; a vessel of deep draught must pass northward of Sgeir Rathaid.

30 A vessel proceeding direct through the sound should note that the light-buoy marking Corran ledge is a starboard-hand buoy to such vessels, although it is can-shaped, being a port-hand buoy for vessels entering Oban bay.

A vessel approaching Oban from northward should pass about one 35 cable westward of Maiden island, and thence steer for Dunollie light-tower, bearing about 134° , until nearly abreast Dunollie castle ; whence she should steer in mid-channel between Rubha Chruidh and Dunollie light-tower. Care is necessary abreast Rubha Chruidh to avoid the foul ground and shoal bank extending eastward from this 40 islet, as the tidal streams are strong and there are no good leading marks ; the width of the channel in this vicinity, between the 6-fathom ($11^{\text{m}} 0$) lines, is about half a cable.

After passing eastward of Rubha Chruidh the vessel can steer into Oban bay, passing westward of the light-buoy marking Corran ledge ; 45 Corran ledge must be given a good berth.

The channel from northward, eastward of Maiden island, requires local knowledge.

At night, when the vessel is northward of Sgeir Rathaid, the white 50 sector of Dunollie light, between the bearings of 009° and 047° , leads through the fairway, passing close westward of the light-buoy marking the western edge of Corran ledge, and close south-eastward of the shoal water extending eastward from Rubha Chruidh, to within about one cable of this light ; the eastern edge of this sector leads over the edge of the shore bank in depths of 3 fathoms ($5^{\text{m}} 5$).

Chart 1790.

After passing westward of Dunollie light, the *white* sector of this light astern, between the bearings of 119° and 138° , leads north-westward through the fairway between the north-eastern end of Kerrera and the south-western end of Maiden island. 5

Oban.—Oban is the tourist headquarters of the West Highlands. The population in 1951 was 6,226. There is a considerable fishing industry.

Special bye-laws are in force for vessels carrying petroleum and carbide of calcium. 10

Communications.—Oban is connected with the general railway system.

There is communication by sea with Glasgow, the Hebrides, and Inverness.

Radio station.—There is a radio station at Oban. See page 14. 15

Life-saving.—There is a line-throwing apparatus at Oban; see page 9.

Port facilities.—Provisions and ship's stores can be obtained. Water is laid on to the quays.

Coal can be obtained at Oban alongside the quays. 20

There is a patent slip and a gridiron at Oban; for the dimensions of the patent slip see Appendix I.

Moderate repairs can be effected to hull and machinery.

There is a cottage hospital and an isolation hospital.

Quays. There are four quays at Oban. Northern Lights wharf, 25 at the south-western end of the town, has a least depth of 16 feet (4^m9) alongside it; South quay, about half a cable east-south-eastward of Northern Lights wharf, has a least depth of 14 feet (4^m3) alongside; Railway wharf, about $1\frac{1}{2}$ cables north-eastward of South quay, has a least depth of 18 feet (5^m5) alongside, and North pier has a depth 30 of $8\frac{1}{2}$ feet (2^m6).

There are also several landing places for boats.

South quay and North pier are stone structures, and all the quays are equipped with cranes. Railway wharf has one $6\frac{1}{2}$ -ton crane.

Charts 3739, 2814a, 2814b.

35

LOCH ETIVE AND APPROACHES.—Loch Etive is entered between Rubhagarbh, about $2\frac{1}{2}$ miles north-eastward of the northern extremity of Maiden island (page 210), and Ledaig point, about one mile east-north-eastward. Loch Etive can only be used by small vessels as its entrance is narrow and shallow. 40

Chart 3739.

Rubhagarbh (*Lat. $56^{\circ} 27' N.$, Long. $5^{\circ} 26' W.$*) is a low wooded promontory on which are the ruins of Dunstaffnage castle, but the ruins are surrounded by trees, and only the chimney tops are visible from seaward; Ledaig point is low and grassy. 45

Connel sound is the channel immediately within Ledaig point; about 5 cables within this point the channel is one cable wide and is divided in mid-channel by a ledge of rocks which dries. This ledge has depths of 10 to 12 fathoms (18^m3 to 21^m9) on its eastern side, and from 21 to 39 feet (6^m4 to 11^m9) on its western side; a portion of this 50 ledge has depths of from 24 to 30 feet (7^m3 to 9^m1) extending across the sound.

About half a cable north-north-eastward of the part of this ledge

Charts 2476, 2515, 2635.

Chart 3739.

of rocks which dries is a rock which dries $5\frac{1}{2}$ feet (1^m7) ; between these rocks which dry is the northern channel, which is much narrower and less direct than the southern channel, southward of the ledge.

5 Below the ledge on each shore is a ferry inn, both buildings being white.

A bridge, 50 feet (15^m2) above high water springs, crosses Connel sound.

Chart 2814a.

Kilmaronag Narrows are one mile above the bridge, and here, 10 though the shores of the loch are not less than $2\frac{1}{2}$ cables apart, the channel is close to the north western shore, and, as there are several islets and rocks extending from the southern shore, is very narrow ; immediately eastward of Kilmaronag Narrows the loch widens.

Charts 3739, 2814a.

15 **Tidal streams.**—At low water springs the water level is about 4 feet (1^m2) lower outside the ledge mentioned above than inside it

and the water falls in a cascade, called Connel falls and sometimes known as Falls of Lora, in the channels on both sides of the ledge ; in consequence the in-going stream does not begin till the water has risen

20 4 feet (1^m2) outside the ledge. (See view on chart 2814a.) At high water springs the water level is about $1\frac{1}{2}$ feet (0^m5) higher outside the ledge than in the loch, and, though the out-going stream begins at the falls soon after high water, it does not begin in Kilmaronag Narrows till the tide outside has fallen $1\frac{1}{2}$ feet (0^m5), or from $1\frac{1}{2}$ to 2 hours

25 later. The times at which the streams begin are not known exactly, and are subject to considerable variations with astronomical and meteorological conditions, but the in-going stream begins about —0320 Oban (+0335 Dover) at the falls, and about —0310 Oban (+0345 Dover) in the Narrows ; the out-going stream begins about +0010

30 Oban (—0520 Dover) at the falls, and about +0200 Oban (—0330 Dover) in the Narrows. The spring rate is not known, but is probably from 5 to 6 knots in both directions. During the in-going stream a

race extends from Kilmaronag Narrows north-eastward into the loch and there is an out-going eddy along the coast southward of the race ;

35 during the out-going stream an eddy runs inward along the coast south-westward of the western end of Kilmaronag Narrows (*Lat.* $56^{\circ} 28' N.$, *Long.* $5^{\circ} 21' W.$), and there are strong eddies with much turbulence below the falls, extending westward to past Ledaig point.

40 The streams are weak in the outer part of Loch Etive but gain strength as the Narrows at Bonawe, about 5 miles above the bridge, are approached. In the Narrows the in-going stream, spring rate

2.5 knots, begins about —0300 Oban (+0355 Dover) ; the out-going stream, spring rate 1.5 knots, begins about +0215 Oban (—0315

45 Dover).

The streams in the inner part of the loch are negligible.

Chart 2476.

Islets and dangers in the outer part of the loch. Sgeir an Eitich, about $3\frac{1}{2}$ cables north-eastward of the northern extremity of

50 Maiden island (page 210) and about half a cable offshore, is a rock 4 feet (1^m2) high ; a bank, with a depth of 3 fathoms (5^m5) over it,

extends about $2\frac{1}{2}$ cables northward from it.

Chart 3739.

Eilean Mòr, about three-quarters of a cable north-eastward of

Chart 3739.

Rubhagarbh (*Lat. 56° 27' N., Long. 5° 26' W.*), has a conspicuous grassy hummock, 55 feet (16^m8) high, at its centre, and is steep-to on its south-western side. There are depths of 38 feet (11^m6) in the channel south-westward of it ; a reef, which dries, extends about $1\frac{1}{2}$ cables eastward from the eastern side, and a rocky ledge extends northward and about half a cable north-castward from the north-eastern side of Eilean Mòr. Eilean Beag, 16 feet (4^m9) high, lies about one cable north-eastward of the north-eastern extremity of Eilean Mòr, and between it and the rocky ledge just mentioned there is a narrow boat channel, in which there is a rock, which dries 2 feet (0^m6) ; A Bhraig, a rock which dries 6 feet (1^m8), lies about half a cable west-north-westward ; and two rocks, which dry 3 and 4 feet (0^m0 and 1^m2), respectively, lie about 100 feet (30^m5) north-castward and eastward of the northern end of Eilean Beag.

Rubha na Leim, on the southern side of Loch Etive, about 7 cables eastward of Rubhagarbh, is a low marshy point with a rocky termination ; it is steep-to on its north-eastern side, but a sandy flat, with depths of less than 6 feet (1^m8) over it, extends from Rubha na Leim to Eilean Mòr and Eilean Beag. A rock, awash, lies half a 20 cable west-north-westward of Rubha na Leim.

Ledaig spit, on the northern side of the entrance, a broad flat of gravel and boulders, which dries 10 feet (3^m0), extends about half a cable southward and $3\frac{1}{2}$ cables west-north-westward from Ledaig point ; a bank, with depths of less than 3 fathoms (5^m5) over it, extends about 6 cables northward from Eilean Mòr, with a deep-water channel from Connel sound to a position $2\frac{1}{2}$ cables northward of Eilean Beag, 7 cables farther north-westward.

The channel between Eilean Beag and the shoal bank westward of Ledaig spit is the deepest leading to Connel sound ; in 1957 the least depth on the bar, north-north-westward of Eilean Beag, was 11 feet (3^m4), but there are no leading marks for it.

Chart 2814a.

The ledge of rocks in the centre of Connel sound is described on page 213 ; a rock which dries 8 feet (2^m4) lies nearly in mid-channel, about 4 cables eastward of the ledge in Connel sound, and is situated at the north-eastern end of a spit, which extends about $1\frac{1}{2}$ cables east-north-castward from the southern shore. The northern extremity of Rubha na Leim in line with the centre of Dunstaffnage castle, bearing 267° , leads close northward of this rock.

Charts 2814a, 2814b.

Kilmaronag shoal, on the southern side of the loch, about three-quarters of a cable north-eastward of Kilmaronag point (*Lat. 56° 28' N., Long. 5° 21' W.*), has a least depth of 3 feet (0^m9) over it. The southern extremity of Abbot's isle, bearing 117° , leads north-eastward of this 45 shoal.

Chart 2814b.

Abbot's isle, on which is a grove of trees, is situated about 7 cables eastward of Kilmaronag point ; it is the south-western of two islets, which are connected at low water. Between these islets and the shore eastward is a narrow channel with depths of from 2 to 6 fathoms (3^m7 to 11^m0).

About 5 cables northward of the northern extremity of Abbot's isle are two islets lying close off the northern shore, the outer one,

Chart 2814b.

which is steep-to on its southern side, being about three-quarters of a cable offshore. Between this islet and Ardchattan point, $1\frac{1}{2}$ miles eastward, there are no dangers beyond one cable from the northern shore, with the exception of Ardchattan shoal. Ardchattan priory, a large mansion one mile eastward of the islet just mentioned, and the manse about a quarter of a mile farther eastward, are close to the shore, and are surrounded by woods, with mountains in the background.

Rubh' a Chairn Bhig, on the southern shore of the loch, about $1\frac{1}{2}$ cables eastward of Abbot's isle, is low and grassy, and rises to a wooded height a short distance inland; in the midst of this wood is Highwood house, a grey castellated building, which is reported to be completely obscured by the trees; Rubha nan Càrn, $5\frac{1}{2}$ cables eastward, and Airds point, one mile farther eastward, are nearly steep-to. The bights between these points are free from dangers and there the shores may be approached to within one cable, except in the vicinity of Sgeir nan Ròn, 7 cables west-south-westward of Airds point, which dries.

Ardchattan shoal, about 2 cables south-westward of the manse, has a least depth of $1\frac{1}{2}$ fathoms (2^m3) over it.

20 Between Ardchattan point and Eilean Duirinnis, about 2 miles east-south-eastward, the north-eastern shore of the loch is almost steep-to. Eilean Duirinnis, which is 122 feet (37^m2) high, is connected with the northern shore by a narrow spit which dries; a bridge, 50 feet (15^m2) long, connects this islet with the mainland. Close eastward of the eastern extremity of Eilean Duirinnis is a rocky islet, Eilean nam Meann.

A ferry plies from the southern side of Eilean Duirinnis to a point on the southern shore; this point, westward of which is Airds bay, is a low tongue of marshy land formed of silt from River Awe.

30 River Awe is fed by the waters of Loch Awe, a lake about 6 miles south-eastward of the mouth of the river, and the mean level of which is 118 feet (36^m0) above the mean sea level. A large quantity of water rushes at a great rate over the narrow rocky bed of the river through the Pass of Awe, and flows into Loch Etive, southward of Eilean Duirinnis (*Lat. $56^{\circ} 27' N.$, Long. $5^{\circ} 14' W.$*). The silt at the mouth of the river forms a spit, which extends about 3 cables north-eastward of the low tongue of marshy land, mentioned above, and forms the north-western entrance point to the river. This spit narrows the navigable channel through the loch to about one cable in width, 40 the greatest depths being near the south-eastern side of Eilean Duirinnis, which is steep-to.

Rubh' Ard an Droighinn, on the northern side of the loch, $3\frac{1}{2}$ cables east-north-eastward of the eastern extremity of Eilean Duirinnis, bearing 060° and just open south-eastward of Eilean nam Meann, 45 leads through the fairway south-eastward of Eilean Duirinnis.

Submarine and overhead cables.—A submarine cable, indicated on the chart, crosses the entrance to the Narrows from Eilean Duirinnis to the root of Bonawe pier; the landing places are marked by a beacon (see page 7). Two overhead cables, with a clearance of 40 feet 50 (12^m2), cross the Narrows to each side of the entrance to the river.

Islets and dangers in the inner part of the loch.—From Eilean Duirinnis to the head of the loch the shores are bordered by mountains and are mostly steep-to beyond a distance of one cable.

Sgeir Lag Chàin, about 5 cables east-north-eastward of Rubh' Ard

Chart 2814b.

an Droighinn and close off the north-western shore, is a group of rocks, 4½ feet (1^m4) high.

From the point 1½ cables northward of Ardnellan point, on the south-eastern side of the loch, about 3½ miles north-eastward of the eastern entrance point of River Awe, a group of above-water and sunken rocks, extends about 2½ cables south-westward. 5

River Kinglass flows out between Rubh' na Staing, about 6½ cables north-north-eastward of Ardnellan point, and Ardmaddy point, 2½ cables east-north-eastward; its mouth dries out about 2 cables. 10

Rubh' Ard Phlacaig, on the north-western shore of the loch, about 1½ miles north-eastward of Rubh' Ard an Droighinn, in line with the north-western end of Craig cot, half a mile south-westward of Rubh' Ard Phlacaig, bearing about 226°, leads north-westward of the group of rocks off Ardnellan point and close north-westward of the sandbank 15 off the entrance to River Kinglass.

From a point on the north-western side of the loch about 9 cables north-north-eastward of Rubh' Ard Phlacaig, foul ground extends about three-quarters of a cable southward; Eilean Uisneachan is situated at the southern end of this foul area. 20

About 4½ cables north-eastward of Rubha Bharr, a promontory on the north-western side of the loch, 1½ miles north-eastward of Eilean Uisneachan, is Sgeir na Beolarach, a group of small above-water rocks, extending half a cable offshore. 25

Charts 1790, 2476.

Submarine cables.—Three submarine cables, the directions of which are indicated on the chart, have been laid between Ganavan bay and Fionn Phort, on the island of Mull; Rubba na h Earba (*Lat.* 56° 26' N., *Long.* 5° 29' W.), the western entrance point of Ganavan bay, is situated about 4½ cables north-eastward of the northern 30 extremity of Maiden island (page 210). The shore ends of these cables are marked by beacons. *See page 7.*

Anchorages.—Tidal streams.—Ganavan bay is shallow, with several sunken rocks at its head; it is unsuitable for anchorage, except for small craft with local knowledge during fine weather. There is a 35 landing hard at the head of the bay 4 cables eastward of Rubha na h Earba. There are three red mooring buoys in the bay.

Chart 2814a.

Camas Rubha na Liathaig, which is entered about 2½ cables south-westward of Rubhagarbh, is a small bay, in which landing can be 40 effected.

Chart 3739.

Dunstaffnage bay, on the southern side of the entrance to Loch Etive, is entered between Rubhagarbh and Rubha na Leim; it affords well-sheltered anchorage with the northern extremity of Rubha na 45 Leim in line with Connel North Ferry inn, bearing about 075°, and the western extremity of Eilean Mòr in line with St. Margaret's tower (page 227), bearing 353°, in a depth of about 30 feet (9^m1), sand.

The head of Dunstaffnage bay dries out about 1½ cables.

Camas Brúaih Ruaidhe is entered, between Rubha na Leim and 50 Rubha Riabhach, 3 cables east-south-eastward; it is deep, but the head of the bay dries out about 1½ cables. A vessel can obtain temporary anchorage with St. Margaret's tower bearing about 335° and open north-eastward of Rubh' Ard nan Leim, and Connel South Ferry

Chart 3739.

inn bearing 080° , in a depth of about 39 feet (11^m9) ; the tidal streams are weak here on the in-going stream ; the out-going stream has an anti-clockwise movement round the bay, causing strong eddies and 5 whirls in the deep water. Slack water occurs about $3\frac{1}{2}$ hours before and after high water at Dover, and lasts from 20 to 30 minutes.

Chart 2814a.

Achnacreemore bay, on the northern side of Loch Etive, close north-westward of Kilmaronag narrows, affords good anchorage, in depth 10 of from 30 to 54 feet (9^m1 to 16^m5), sand and shells. A rock, about $6\frac{1}{2}$ cables north-north-westward of Kilmaronag point and about one cable from the northern shore, dries 2 feet (0^m6).

Chart 2814b.

Linne na Craige is entered between Ruhh' a Chairn Bhig and Eilean 15 Traighe, a low grassy tongue of land $5\frac{1}{2}$ cables west-south-westward ; it affords anchorage with Kilmaronag point bearing 296° and just open north-eastward of Eilean Traighe, and the south-eastern extremity of Abbot's isle in line with the north-western extremity of Rubh' a Chairn Bhig, bearing about 055° , in a depth of 24 feet (7^m3).

20 A vessel entering Linne na Craige from north-westward should be careful to avoid the shoal bank, extending about three-quarters of a cable eastward from Eilean Traighe, also the bank fringing Abbot's isle.

Sailean Rubha, the inlet close south-westward of Airds point (*Lat. $56^{\circ} 28' N.$, Long. $5^{\circ} 16' W.$*), affords well-sheltered anchorage for 25 small vessels about $1\frac{1}{2}$ cables from its head, in depths of from 12 to 18 feet (3^m7 to 5^m5). The head of the inlet dries out about $1\frac{1}{2}$ cables.

Airds bay, the depths being considerable close to the shore, is not suitable for anchorage. There is a pier, on the south-eastern side of the bay, alongside which vessels work cargo. River Nant flows into 30 the southern part of Airds bay, south-westward of the pier.

An Doirlinn, the inlet northward of the eastern part of Eilean Duirinnis, is a small natural harbour. A vessel entering An Doirlinn can approach from south-westward, passing westward of Eilean nam Meann, but this channel, in which there is a least depth of 12 feet 35 (3^m7), is only about 30 yards (27^m4) wide ; there is deep water in the eastern approach.

Good anchorage can be obtained about $1\frac{1}{2}$ cables north-eastward of the north-eastern extremity of Eilean nam Meann and about three-quarters of a cable offshore, in a depth of 14 fathoms (25^m6).

40 There is anchorage in Inverliever bay, about 2 cables east-south-eastward of Ardnellan point, in depths of from 30 to 60 feet (9^m1 to 18^m3). A vessel entering Inverliever bay should be careful to avoid the group of rocks westward of Ardnellan point.

Camas na Cùirte (Camas an t Seilisdeire), a bight on the north-western side of the loch, close westward of Eilean Uisneachan, affords secure anchorage, in a depth of 24 feet (7^m3), mud.

Bagh na Dalach, on the north-western side of the loch, south-westward of Rubha Bharr, also affords anchorage.

Chart 3739.

50 **Directions.**—A vessel bound into Loch Etive should pass through Connel sound about $3\frac{1}{2}$ hours after the time of high water at Dover. A vessel entering Connel sound by the northern channel, eastward of Eilean Beag, should take care to avoid A Bhraig and the two rocks, which dry off the northern end of Eilean Beag.

Chart 3739.

A vessel entering by the southern channel should steer to pass between Rubhagarh and Eilean Mòr, keeping close to the latter, and, after passing southward of Eilean Mòr, bring its southern extremity in line with the northern extremity of Dunstaffnage castle (page 215), bearing about 260° , astern, which leads over the sandy flat westward of Rubha na Leim, in depths of from 9 to 12 feet ($2^{\text{m}}7$ to $3^{\text{m}}7$). In 1941, there was a channel about 200 feet ($61^{\text{m}}0$) wide across this sandy flat with a least depth of 12 feet ($3^{\text{m}}7$).

When the northern extremity of Eilean Mòr is in line with the 10 111-foot ($33^{\text{m}}8$) summit of Creag island (page 222), bearing 289° , astern, the vessel should steer on this alignment which leads north-westward of the rock, awash, half a cable west-north-westward of Rubha na Leim (*Lat. $56^{\circ} 27' N.$, Long. $5^{\circ} 25' W.$*), until the northern extremity of Rubha na Leim is in line with the centre of Dunstaffnage 15 castle, bearing about 268° , astern, which leads through the southern channel of Connel sound.

A vessel approaching Loeh Etive from northward should avoid Bogha Garbhieard and the shoal, with a depth of 19 feet ($5^{\text{m}}8$) over it, half a cable south-westward of it. (See page 227.) 20

Charts 1426, 2814a.

LOCH LINNHE.—Loch Linnhe is the continuation north-eastward of Firth of Lorne (page 199); its southern part, for about 9 miles, is divided into two arms by Lismore, an island, the south-western extremity of which is situated about $9\frac{1}{2}$ cables north-eastward of 25 Lady's rock lighthouse (page 201).

Chart 2814a.

SOUTHERN PART OF LOCH LINNHE.—Lynn of Lorne, the south-eastern arm of Loch Linnhe, is about $1\frac{1}{2}$ miles wide at its south-western entrance and narrows to about half a mile in width at its 30 north-eastern end.

Charts 2814a, 3607.

Lynn of Morvern, the north-western arm of Loch Linnhe, between the north-western side of Lismore and the coast of Morvern, is about 2 miles wide; it is deep and free from dangers in the fairway. 35

Caisteal na Gruagaich, about $6\frac{1}{2}$ miles north-eastward of Rubha an Ridire, the southern extremity of Morvern, stands on the northern side of the mouth of Glensanda (Glen Sanda) river; it is a square building in ruins, situated on a conical rocky hill, 124 feet ($37^{\text{m}}8$) high.

The coast of Morvern is bold, rocky and steep-to, and rises a short 40 distance inland to the Morvern hills, the summit of which, An Sleaghach (Garbh Shlios), is 1,679 feet ($511^{\text{m}}7$) high, situated $2\frac{1}{2}$ miles north-eastward of Kubha an Ridire.

Dumping ground.—A dumping ground for explosives is situated in Lynn of Morvern about $2\frac{1}{2}$ miles eastward of Rubha an Ridire. 45

Chart 2814a.

Submarine cables.—An area, the limits of which are indicated in pecked lines on the chart, and in which submarine cables have been laid, extends across the northern end of Lynn of Lorne; vessels are warned not to anchor in this area; see page 7. 50

Charts 2814a, 3607.

Tidal streams.—The north-east-going stream of Firth of Lorne

Charts 2814a, 3607.

divides southward of Lady's rock and Eilean Musdile, and runs north-eastward into Lynn of Lorne, and northward, between Eilean Musdile, Lady's rock, and the coast of Mull, to the Sound of Mull and Lynn of Morvern ; the streams in the opposite directions meet southward of Lady's rock and Eilean Musdile, and their meeting is indicated by overfalls or ripples. The streams generally are not strong, but run very strongly through the restricted channels between Eilean Musdile, Lady's rock, and the coast of Mull. In Lynn of Lorne the streams 10 in the southern part begin nearly as in Firth of Lorne, but become gradually later northward. Off the coast of Mull the streams begin at very different times. Thus off Eilean Straid eun they begin as in mid-channel in Firth of Lorne, but off Duart point the north-going stream begins about 3 hours later and the south-going stream about 15 $1\frac{1}{2}$ hours later.

In mid-channel at the southern end of Lynn of Lorne the in-going stream begins +0445 Oban (-0045 Dover), and the out-going stream begins -0140 Oban (+0515 Dover) ; at the entrance to the narrow channel at the northern end the in-going stream begins +0600 Oban 20 (+0030 Dover), the out-going stream begins -0015 Oban (-0545 Dover) ; the spring rate in each direction at the southern end is about one knot, increasing to about 2 knots in the narrow channel at the northern end. During the in-going stream an eddy, spring rate about one knot, runs outwards from about Eilean nan Gmhna, along the 25 south-eastern coast of Lismore.

The streams between Firth of Lorne and the Sound of Mull and Lynn of Morvern run very strongly between Eilean Musdile, Lady's rock (*Lat. 56° 27' N., Long. 5° 37' W.*), and the coast of Mull, where there are races and overfalls ; the spring rate in both directions is about 30 6 knots between Eilean Musdile and Lady's rock, and about 4 knots between Lady's rock and the coast of Mull. Northward of the channels, as the fairway opens out the streams lose strength, and off Duart point, at a position 1.1 miles 285° from Lismore lighthouse, the north-going stream, spring rate 3 knots, neap rate 1.1 knots, begins -0530 35 Oban (+0125 Dover) ; the south-going stream, spring rate 2.1 knots, neap rate 0.8 knot, begins -0020 Oban (-0550 Dover). The north-going stream, which runs for about 5 $\frac{1}{2}$ hours only, is considerably stronger than the south-going stream, runs in directions which change gradually from about 330° to about 000° ; the south-going stream, 40 which runs for about 7 $\frac{1}{4}$ hours, runs in directions which change gradually from about 140° to 170°. The stream changes from south-going to north-going through west and, during the change, runs towards the land with a least spring rate of about 0.3 knot ; it changes from north-going to south-going through east. The difference between the 45 durations of the streams is also found in the Sound of Mull, (see page 287), but is not found in Lynn of Morvern.

Between Duart point and Eilean Musdile, and the Morvern coast, the north-going stream divides and runs north-westward to the Sound of Mull, and north-eastward through Lynn of Morvern ; for the 50 Sound of Mull see page 287 ; in Lynn of Morvern the north-east-going stream begins -0545 Oban (+0110 Dover), the south-west-going stream begins +0025 Oban (-0505 Dover). At the south-western end of Lynn of Morvern the north-east-going stream runs at first towards the Morvern coast and then along the coast to about off Camas Chribnaig,

Charts 2814a, 3607.

where it continues in a north-easterly direction across the channel towards a position about one mile north-west from Sgeir nan Tom ; this stream attains a rate of about 2·5 knots at springs, but elsewhere in Lynn of Morvern the rate of the north-east-going stream is not more than about one knot and there is no appreciable stream along the coast of Lismore from about Bernera to about Sgeir nan Tom. The south-west-going stream runs generally in the direction of the channel in the north-eastern and middle parts of Lynn of Morvern, spring rate about one knot, but forms eddies in the south-western part. On the 10 south-western side of the channel an eddy forms south-westward of Rubha Croinn and runs north-eastward into Bernera bay.

Overfalls occur from a position about one cable eastward of Rubha a' Mhètair to a position about 5 cables north-westward of Rubha Croinn. There is no satisfactory explanation for these overfalls 15 which occur only at springs, form at the beginning of the south-west-going stream in Lynn of Morvern and continue for about 3 or 4 hours. The northern edge of the overfalls is specially well defined.

Chart 2814a.

Lismore.—Lismore is an island of limestone formation. Compared 20 with the surrounding mountainous country the island is low ; the highest hill, Barr Mòr, about 2½ miles north-eastward of Rubha Fiart, the south-western extremity of the island, having an elevation of 411 feet (125^m3). There is a small flagstaff on Rubha Fiart. The population of the island in 1951 was 191. 25

The ruins of Tirefour castle, about 2½ miles south-westward of the north-eastern end of Lismore, lie on the summit of a grassy knoll, 169 feet (51^m5) high, close to the south-eastern coast of the island ; they are circular in shape and built of loose stones without mortar.

Eilean Musdile (*Lat. 56° 27' N., Long. 5° 36' W.*), on which stands 30 Lismore lighthouse, lies close south-westward of Rubha Fiart, to which it is almost joined by a reef which dries ; it is in two parts, which are connected by a stone bridge ; a bank, with depths of less than 3 fathoms (5^m5) over it, extends 1½ cables south-westward from the south-western extremity of Eilean Musdile. The south-eastern 35 side of Eilean Musdile is foul for about three-quarters of a cable offshore, and a bank, with depths of less than 30 feet (9^m1) over it, extends about 2½ cables offshore. Sgeir nan Gacl, situated at the south-western edge of the foul area, about three-quarters of a cable south-eastward of Lismore lighthouse, is 13 feet (4^m0) high. The red 40 sector of the light on William Black's Memorial tower (page 201), between the bearings of 261° and 275°, leads southward of the shoal bank extending from the south-eastern side of Eilean Musdile.

Lady's rock, about 5½ cables south-westward of Lismore lighthouse, is described on page 201 ; the channel between Lady's rock 45 and Eilean Musdile has depths of from 6 to 14 fathoms (11^m0 to 25^m6).

A ferry plies between Achtnacroish, on the south-eastern side of Lismore, 4½ miles from its south-western end, and Oban ; also between Rubh' Ard Ghainimh, the north-eastern extremity of Lismore, and 50 Port Appin, on the mainland, 6 cables south-eastward.

Achtnacroish is the principal landing place on Lismore ; a stone causeway and pier extend from the shore ; there is a least depth of 10 feet (3^m0) alongside this pier.

Chart 2814a.

Mooring buoys.—Four mooring buoys, Nos. 1 to 4, are laid about $1\frac{1}{2}$ cables offshore, with No. 1, the northern buoy, situated about half a mile southward of Achnacroish pier.

5 **Lights.**—Lismore light, situated at the south-western end of Eilean Musidle, is described on page 201.

A light is exhibited, at an elevation of 24 feet ($7^{\text{m}}3$), from a white beacon, 24 feet ($7^{\text{m}}3$) in height, situated on Sgeir Bhuidhe, on the south-eastern side of Loch Linnhe, about 9 miles north-eastward of 10 Lismore light.

Islets and dangers in south-western part of Lynn of Lorne.—Beacon.—Light-buoy.—There are several islets and dangers in Lynn of Lorne, but it is comparatively deep until the narrows at the north-eastern end are approached; here a shoal bank extends from both 15 shores, and the channels leading into the central part of Loch Linnhe are narrow, with a least depth of 21 feet ($6^{\text{m}}4$).

Sgeir Scoraig, close off the south-eastern side of Lismore, about $1\frac{1}{2}$ miles east-north-eastward of Rubha Fiart, is a rocky islet, 7 feet ($2^{\text{m}}1$) high.

20 The south-eastern coast of Lismore is free from dangers, beyond one cable offshore, from Rubha Fiart to a position about $1\frac{1}{2}$ miles from its north-eastern extremity.

Lying in the channel, about $3\frac{1}{2}$ miles east-north-eastward of Lismore lighthouse, is a group of islets and rocks. The highest and southernmost of this group is Creag island, 111 feet ($33^{\text{m}}8$) high. Pladda island, about half a cable east-north-eastward of Creag island, is connected with it by a reef that dries; a bank, with depths of less than 18 feet ($5^{\text{m}}5$) over it, extends about three-quarters of a cable east-north-eastward from the north-eastern end of Pladda island. Eilean 25 Dubh and Eilean na Cloiche lie about 4 cables northward of Pladda island and Creag island, respectively, and Eilean nan Gasmhna about $1\frac{1}{2}$ cables westward of Eilean na Cloiche. Eilean Dubh and Eilean na Cloiche are connected by a reef that dries, and there is a flat, with depths of less than 18 feet ($5^{\text{m}}5$) over it, between Eilean na Cloiche 30 and Eilean nan Gasmhna. Eilean na Cloiche has a pillar-shaped rock, 73 feet ($22^{\text{m}}3$) high, which is visible from northward and eastward. A bank, with depths of less than 30 feet ($9^{\text{m}}1$) over it, extends about $2\frac{1}{2}$ cables northward from Eilean na Cloiche. All these islets are covered with heather. Cams rock, about midway between Creag 35 and Eilean na Cloiche, dries about 12 feet ($3^{\text{m}}7$).

Vessels usually pass south-eastward of this group of islets and rocks but there is a deep channel, about $1\frac{1}{2}$ cables wide, between the western side of Eilean nan Gasmhna and the south-eastern side of Lismore. A vessel using this channel should be careful to avoid a rock, with a 45 depth of 4 feet ($1^{\text{m}}2$) over it, lying close offshore, about $3\frac{1}{2}$ cables west-north-westward of the northern extremity of Eilean nan Gasmhna (*Lat. 56° 29' N., Long. 5° 31' W.*). A vessel should not attempt to pass between the islets of this group.

Rubha Fion-àird, the south-western extremity of a promontory of 50 the mainland $1\frac{1}{2}$ miles eastward of Pladda island, is low and rocky. Foul ground, the extremity of which dries one foot ($0^{\text{m}}3$), extends about one cable south-westward from Rubha Fion-àird; a bank, with depths of less than 5 fathoms ($9^{\text{m}}1$) over it, extends about three-quarters of a cable farther south-westward. The eastern extremity of

Chart 2814a.

Eilean Dubh (*see below*), in line with the eastern extremity of Rubh' Ard Ghainimh, bearing about 023° , leads westward of this foul area. A vessel should not close Rubha Fion-àird within 2 cables or to a depth of less than 14 fathoms ($25^{\text{m}}6$). 5

Eriska shoal, of sand and stones, fringes on the south-eastern side of the channel, from abreast Shenvalie farm, about 2 miles north-north-eastward of Rubha Fion-àird, as far as the entrance to Loch Creran, 2 miles farther north-north-eastward; it extends as much as 2 cables offshore. Sgeir Bhuidhe light-beacon, in line with the western extremity of the land, about $8\frac{1}{2}$ cables south-south-westward, bearing about 025° , leads westward of Eriska shoal, but over two shoals, each with a depth of 35 feet ($10^{\text{m}}7$) over it, lying about 2 cables offshore and about $1\frac{1}{2}$ miles north-north-eastward of Rubha Fion-àird.

Eilean Dubh, the southern extremity of which is $2\frac{1}{2}$ miles north-eastward of Eilean na Cloiche, lies in the fairway of the channel, and is 143 feet ($43^{\text{m}}6$) high. Foul ground extends about $1\frac{1}{4}$ cables south-westward from its southern end and about 2 cables westward from its western side; and a shoal spit on the extremity of which lies a rock, with a depth of less than 6 feet ($1^{\text{m}}8$) over it, extends one cable north-north-eastward from its northern end. A vessel can pass on either side of Eilean Dubh, the channel south-eastward being the wider and deeper. 15

Branra rock, about $5\frac{1}{2}$ cables north-eastward of the north-eastern extremity of Eilean Dubh, dries 8 feet ($2^{\text{m}}4$), is steep-to; it is marked by an iron framework beacon, 18 feet ($5^{\text{m}}5$) in height, painted red and black in horizontal bands, and surmounted by a harrel-shaped cage. *See sketch on chart 2814a.* 25

Glas eilean, about 5 cables eastward of Branra Rock beacon (*Lat. $56^{\circ} 32' N.$, Long. $5^{\circ} 27' W.$*) and about $2\frac{1}{2}$ cables from Eriska (*see 30 below*), is 17 feet ($5^{\text{m}}2$) high. A bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extends one cable south-westward, and north eastward, from Glas eilean; and a shoal, with a depth of 16 feet ($4^{\text{m}}9$) over it, lies three-quarters of a cable off its north-western side. Eriska, on the southern side of the entrance to Loch Creran, is connected with the mainland southward by a reef which dries. 35

Sgeir an Tuinn, about three-quarters of a cable from the south-eastern side of Lismore and $3\frac{1}{2}$ cables north-westward of Branra rock, dries about 13 feet ($4^{\text{m}}0$); it is situated on a bank of gravel and stones, which extends about half a cable eastward from it. 40

Islets and dangers in the north-eastern part of Lynn of Lorne.
—**Light-buoy.**—The south-eastern coast of Lismore from Sgeir an Tuinn to Rubh' Ard Ghainimh, is fringed by a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extending as much as 2 cables offshore; Lobster stone, situated on this bank, about $7\frac{1}{2}$ cables north-eastward of Branra Rock beacon and about $1\frac{1}{2}$ cables offshore, dries 2 feet ($0^{\text{m}}6$). Caution is necessary to avoid this reef, especially when passing through the narrow channel abreast Lobster stone. 45

A shoal, with a least depth of 19 feet ($5^{\text{m}}8$) over it, lies in the fairway, about $5\frac{1}{2}$ cables north-north-eastward of Branra Rock beacon. 50

From the south-western end of Ru nan Clach Tholl, a wooded promontory, 228 feet ($69^{\text{m}}5$) high, on the south-eastern side of the channel, about 7 cables north-north-eastward of Glas eilean, foul ground extends about 2 cables west-south-westward. Appin rock, at

Chart 2814a.

the eastern edge of this foul ground, dries 7 feet ($2^{\text{m}}1$) ; a shoal bank extends about 2 cables south-westward, and $1\frac{1}{2}$ cables northward of Appin rock ; a conical light-buoy, painted black and exhibiting a white 5 flashing light every six seconds, is moored about $1\frac{1}{2}$ cables westward of Appin rock.

Caution is necessary when in the vicinity of Appin rock, as both ebb and flood streams set strongly across it.

At the south-western end of Ru nan Clach Tholl is a natural arch, 10 noticeable from eastward and westward.

Between Sgeir Bhuidhe light-beacon and Shuna island, about $1\frac{1}{4}$ miles ($5^{\text{m}}5$) north-eastward, a bank, with depths of less than 3 fathoms over it, extends about $2\frac{1}{2}$ cables from the mainland. The bank in this vicinity, which dries, consists of gravel, mixed with stones and 15 boulders covered with weed and small patches of sand. The conspicuous ruins of a castle, 75 feet ($22^{\text{m}}9$) high, lie on Eilean an Stalcaire, the northern of two grassy islets about one mile north-eastward of Sgeir Bhuidhe light-beacon. (*Lat. $56^{\circ} 34' N.$, Long. $5^{\circ} 25' W.$*).

A stone jetty, which dries 3 feet ($0^{\text{m}}9$), with a perch at its outer end, 20 projects from a boat-house, with a red roof, situated about $4\frac{1}{2}$ cables north-eastward of Sgeir Bhuidhe light-beacon.

Inn island, 21 feet ($6^{\text{m}}4$) high, $1\frac{1}{2}$ cables eastward of Rubh' Ard Ghainimh, is the southernmost of a group of islets lying in the north-eastern entrance to Lynn of Lorne. Foul ground extends 2 cables 25 south-south-westward from the southern end of Inn island ; a rock, at the southern end of this foul area, dries 11 feet ($3^{\text{m}}4$), and its position can nearly always be detected. The channel westward of Inn island is narrow, with depths of from 15 to 27 feet ($4^{\text{m}}6$ to $8^{\text{m}}2$), and is only available for small vessels with local knowledge. Eilean nan Caorach 30 is 85 feet ($25^{\text{m}}9$) high and covered with grass : it lies about $1\frac{1}{2}$ cables north-north-westward of Inn island, between which is an islet fringed by a reef. The eastern and south-eastern sides of Eilean nan Caorach are foul for about one cable offshore ; a patch, with a depth of 4 feet ($1^{\text{m}}2$) over it, lies about 2 cables eastward of the southern end of the 35 island. A shoal, with a least depth of 14 feet ($4^{\text{m}}3$) over it, lies about 2 cables north-westward of the south-western extremity of Eilean nan Caorach, and there is a channel eastward of this shoal, with depths of from 23 to 29 feet ($7^{\text{m}}0$ to $8^{\text{m}}8$). Foul ground, which dries 5 feet ($1^{\text{m}}5$), 40 extends about $1\frac{1}{2}$ cables northward, and a hank, with depths of less than 6 fathoms ($11^{\text{m}}0$) over it, extends 3 cables north-north-eastward from the northern end of Eilean nan Caorach.

Bogha na Dubhan, about 3 cables north-westward of Rubh' Ard Ghainimh, has a least depth of one foot ($0^{\text{m}}3$) over it ; a shoal bank extends $2\frac{1}{2}$ cables south-westward from it and connects with the foul 45 ground lying 3 cables westward of Rubh' Ard Ghainimh. A bank, with depths of less than 5 fathoms ($9^{\text{m}}1$) over it, extends about one cable north-westward ; and a shoal, with a depth of 32 feet ($9^{\text{m}}8$) over it, lies $2\frac{1}{2}$ cables north-westward of Bogha na Dubhan. There is a depth of 27 feet ($8^{\text{m}}2$) in the channel between Bogha na Dubhan 50 and Eilean Gainimh, $2\frac{1}{2}$ cables northward.

Eilean Gainimh consists of three islets, the highest of which has an elevation of 15 feet ($4^{\text{m}}6$) ; they are connected by a reef which dries. The northern islet is grass-covered and the other two almost bare ; the group is fringed by a reef which dries ; a reef, which dries 6 feet ($1^{\text{m}}8$),

Chart 2814a.

lies three-quarters of a cable north-westward of the centre islet. The channel between Eilean Gainimh and the shoal, with a depth of 14 feet (4^m3) over it, north-westward of Eilean nan Caorach, is 2 cables wide, with depths of from 6 to 13 fathoms (11^m0 to 23^m8). The 5 channel between Eilean Gainimh and Sgeir nan Tom, $2\frac{1}{2}$ cables north-westward, is about $1\frac{1}{2}$ cables wide and has depths of from 6 to 18 fathoms (11^m0 to 32^m9).

Sgeir nan Tom (*Lat. 56° 34' N., Long. 5° 26' W.*), the north-westernmost islet in this vicinity, is 15 feet (4^m6) high; foul ground extends 10 about half a cable east-north-eastward from its northern end; Guilean rock, one cable west-south-westward of its southern end, dries 7 feet (2^m1); the passage between is foul.

Eilean Glas, about $2\frac{1}{2}$ cables east-north-eastward of the north-eastern end of Eilean Gainimh, is the north-easternmost islet in the northern 15 approach to Lynn of Lorne, and is 12 feet (3^m7) high. Depths of less than 6 fathoms (11^m0) extend about 3 cables south-westward from its south-western end; a rock, with a depth of 19 feet (5^m8) over it, lies near the south-western end of this shoal area. A bank, on the outer end of which is a rock, which dries 8 feet (1^m8), extends $1\frac{1}{2}$ cables 20 north-eastward from the north-eastern end of Eilean Glas; the rock cannot be detected when covered during still water.

The north-eastern extremity of Eilean nan Caorach in line with the outer end of the ruined pier at Port Appin (page 221), $8\frac{1}{2}$ cables southward, bearing 181° , leads close eastward of the foul ground extending 25 north-eastward from Eilean Glas. The southern extremity of Shuna island, in line with the white cottage on Knap point, 4 cables eastward of the southern extremity of Shuna, bearing about 082° , leads close northward of the foul ground extending north-eastward from Eilean Glas.

30

Tidal streams.—The streams are very weak in the channels between the islands and rocks to the north-eastward of Lismore and between Lismore and the mainland.

Charts 2814a, 3607.

Islets and dangers in Lynn of Morvern.—Liath sgeir, about one 35 miles northward of Lismore lighthouse (page 201), dries 9 feet (2^m7); a shoal bank extends about $1\frac{1}{2}$ cables south-westward, three-quarters of a cable westward, and three-quarters of a cable north-westward and northward from Liath sgeir; the north-eastern side of Liath sgeir is steep-to. A shoal, with a depth of 18 feet (5^m5) over it, lies 40 about 2 cables south-eastward of Liath sgeir, with a depth of 21 feet (6^m4) in the channel between.

Charts 2814a, 3607, 2476.

The light-beacon on Lady's rock (page 201) in line with the eastern extremity of Mull (chart 2515), bearing 205° , leads south-eastward of 45 the dangers described above. The southern extremity of Eilean Rubha an Ridire, which is situated about $3\frac{1}{2}$ miles north-westward of Lismore lighthouse, in line with the gap in the trees close northward of Ard-tornish castle, $2\frac{1}{2}$ miles north-westward, bearing 308° , leads south-westward of these dangers (see view B on chart 3607). The south-western extremity of Eilean Musdile, in line with the mound on Rubha na Feundain (page 203), bearing 172° , leads westward of these dangers (see view C on chart 3607). The lighthouse on Glas eileanan (page 280) in line with Cnoc an Teine, a hill, 215 feet (65^m5) high, $3\frac{1}{2}$ miles

Charts 2814a, 3607, 2476.

west-north-westward, bearing 287° , leads northward of these dangers (see view A on chart 3807).

Charts 2814a, 3607.

- 5 Bernera island (*Lat. $56^{\circ} 30' N.$, Long. $5^{\circ} 35' W.$*), the south-western extremity of which is situated about 2 miles northward of Lismore lighthouse, is 178 feet (54^m2) high; its north-eastern end is connected with Lismore by a reef that dries. Some rocks extend about one cable from its south-eastern side.

10 *Chart 2814a.*

- The north-western coast of Lismore, from Bernera island for about $4\frac{1}{2}$ miles north-eastward, is rocky, steep-to, and without off-lying shoals, with the exception of a rocky shoal, with a depth of 13 feet (4^m0) over it, situated $4\frac{1}{2}$ cables east-north-eastward of the northern extremity of Bernera island. There is a stone jetty, which dries 2 feet (0^m6), at An Sailean, about 2 miles north-eastward of the northern extremity of Bernera island.

Dubh sgeir, about 2 miles west-south-westward of Rubh' Ard Ghainimh, is a group of above-water rocks, the highest of which has an elevation of 13 feet (4^m0); a shoal bank extends about one cable south-westward from the southern end of Dubh sgeir. Eilean Loch Oscair, about $1\frac{1}{2}$ cables east-north-eastward of Dubh sgeir, is 30 feet (9^m1) high; there are some sunken rocks in the channel between them.

- 25 From the promontory, $1\frac{1}{2}$ miles westward of Rubh' Ard Ghainimh foul ground extends about $1\frac{1}{2}$ cables north-eastward; Eilean nam Bhan, a grass-covered islet, 14 feet (4^m3) high, lies at the northern edge of this foul ground, and a bank, with depths of less than 6 fathoms (11^m0) over it, extends about $2\frac{3}{4}$ cables farther north-eastward.

- 30 Eilean Ramsay, about $5\frac{1}{2}$ cables east-south-eastward of Eilean nam Bhan, is a grass-covered islet, 61 feet (18^m6) high; foul ground extends about $2\frac{1}{2}$ cables westward and about $3\frac{1}{2}$ cables north-eastward from Eilean Ramsay.

Eilean nam Meann, 29 feet (8^m8) high, lies about $2\frac{1}{2}$ cables west-south-westward of Eilean Ramsay. Alasters rock, which dries 4 feet (1^m2), lies about $1\frac{1}{2}$ cables north-westward of Eilean Ramsay; a rock, which dries 9 feet (2^m7), is situated about $1\frac{1}{2}$ cables west-south-westward of Alasters rock.

- 40 Bogha na Duhhan, 3 cables north-westward of Rubh' Ard Ghainimh, and the islets northward and north-eastward of Bogha na Dubhan are described in page 224.

Ardmucknish bay and Camus Nathais.—Ardmucknish bay, on the eastern side of the south-western entrance to Lynn of Lorne, is entered between Eilean Beag (page 215) and Rubha Garbh-àird, $4\frac{1}{2}$ miles north-westward. Rubha Garbh-àird is the south-western extremity of Garbh Ard, a wooded promontory, 352 feet (107^m3) high; foul ground extends about one cable south-westward from this point. Ardmucknish bay affords anchorage with good holding ground, except during south-westerly winds.

- 50 Ard Blatan, at the northern end of the bay, about $1\frac{1}{2}$ miles north-eastward of Rubha Garbh-àird (*Lat. $56^{\circ} 28' N.$, Long. $5^{\circ} 27' W.$*), is a rocky and wooded point, contrasting with the sandy beach and fields eastward of it. Ledaig village is situated on the eastern side of the bay, about $1\frac{1}{2}$ miles north-north-eastward of Eilean Beag;

Chart 2814a.

the vitrified ruins of Beregonium, $3\frac{1}{2}$ cables north-north-westward of Ledaig post office, appear from the south-westward as a steep-sided grassy knoll, flat on top. St. Margaret's tower stands on a hill, 354 feet (107^m9) high, on the western side of the bay 11 cables north-⁵ north-eastward of Rubha Garbh-àird.

Ledaig spit, at the south-eastern end of the bay, and the shoal bank westward and north-north-westward of the spit, are described on page 215.

Bogha Garbh-àird, about $2\frac{1}{2}$ cables south-westward of Rubha ¹⁰ Garbh-àird, dries one foot (0^m3) ; a rocky bank, with a depth of 19 feet (5^m8) over its extremity, extends $1\frac{1}{2}$ cables south-westward from Bogha Garbh-àird.

The southern extremity of Eilean Beag in line with Connel South Ferry inn (page 217), bearing about 109° , leads south-westward of ¹⁵ Bogha Garbh-àird and the rocky bank extending south-westward from it.

A shoal, with a least depth of 17 feet (5^m2) over it, lies in the bay, about $1\frac{1}{2}$ miles northward of Eilean Beag, and a shoal, with a least depth of 23 feet (7^m0) over it, lies about $2\frac{1}{2}$ cables west-south-westward ²⁰ of this shoal.

A vessel anchoring in Ardmucknish bay should steer in with the southern extremity of Ard Bhatan bearing 018° , and anchor when Ledaig post office bears 079° and St. Margaret's tower 332° , in a depth of about 16 fathoms (29^m3), mud. A vessel of more than 20 feet ²⁵ (6^m1) draught should anchor farther southward.

Camus Nathais is entered between Rubha Garbh-àird and Rubha Fion-àird (page 222), $6\frac{1}{2}$ cables north-westward ; it is a narrow inlet free from dangers ; a shoal bank extends 2 cables from its head. This ³⁰ inlet is open south-westward.

Tidal streams.—The streams run in the direction of the coast, across the entrance to Ardmucknish bay ; the north-east-going stream begins +0430 Oban (-0100 Dover), the south-west-going stream begins -0155 Oban (+0500 Dover) ; the spring rate in each direction is about 1.5 knots.

In Ardmucknish bay the streams are weak and uncertain except near the entrance to Loch Etive. At a position about 6 cables 146° from Rubha Garbh-àird the stream is irregular ; at springs it runs in a north-westerly direction, rate up to 0.6 knot, between about +0400 and -0500 Oban (-0130 and +0155 Dover) ; it then changes, ⁴⁰ through west, to about south-west by about -0200 Oban (+0455 Dover), and is weak and irregular or slack at other times. At neaps the stream runs continuously in directions between about west and north-west, rate from 0.1 to 0.3 knot. A very weak stream sometimes runs round the bay in a clockwise direction.

Charts 2814a, 2814b.

Loch Creran.—Loch Creran is entered between the northern side of Eriska (page 223) and Airds point, a low rocky point $2\frac{1}{2}$ cables northward. It should only be entered by small vessels.

Chart 2814a.

From Airds point (*Lat. $56^\circ 33' N.$, Long. $5^\circ 25' W.$*) foul ground extends about 2 cables south-westward ; at the south-western end of this foul area is a rock which dries 11 feet (3^m4) ; about three-quarters of a cable south-south-eastward of this rock, and connected with it by ⁵⁰

Chart 2814a.

a bar with depths of 17 feet ($5^{\text{m}}2$) over it, are some rocks extending from the southern shore. The channel into the loch leads over this bar.

Chart 2814b.

5 Caolas Creagan (Crigan Narrows) are about $1\frac{1}{2}$ miles from the head of the loch. On the southern side of the western entrance to these Narrows are some rocks extending about three-quarters of a cable offshore ; Sgeir Dubh (Black rock), the north-westernmost of these rocks, dries 11 feet ($3^{\text{m}}4$).

10 A railway bridge crosses Caolas Creagan 40 feet ($12^{\text{m}}2$) above high water.

Within Caolas Creagan is a basin into the north-eastern end of which River Creran flows ; at the mouth of this river is a broad alluvial flat which dries.

15 Charts 2814a, 2814b.

Within the bar the depth in the lower part of the loch is not less than 18 feet ($5^{\text{m}}5$). In Caolas Creagan the depths are from $1\frac{1}{2}$ to 12 feet ($0^{\text{m}}5$ to $3^{\text{m}}7$) in the fairway.

Tidal streams.—In the entrance the streams run in about the direction of the channel, but a northerly set must be expected in the bend northward of Eriska during the streams in both directions. The in-going stream begins +0600 Oban (+0030 Dover), the out-going stream begins -0030 Oban (-0600 Dover); the spring rate in each direction is from 3 to 4 knots.

25 The streams are weak in the outer part of the loch, but increase as Caolas Creagan is approached. In these Narrows the in-going stream begins -0520 Oban (+0135 Dover), the out-going stream begins +0025 Oban (-0505 Dover) ; the spring rate in each direction is about 5 knots. During the out-going stream overfalls extend about half a mile westward from the western entrance to the Narrows.

The streams in the inner loch are imperceptible, except near the Narrows.

Chart 2814a.

Submarine cables.—Submarine cables, the directions of which are indicated on the chart, are laid across the loch, about one mile south-eastward of Airds point. The landing place on either shore is marked by a beacon. See page 7.

Ferry.—A ferry plies between North and South Shian, about $8\frac{1}{2}$ cables south-eastward of Airds point.

40 **Anchorages.**—Good anchorage may be obtained about 2 cables northward of the south-western cable beacon and $1\frac{1}{2}$ cables from the north-western side of Sgeir Cailllich, in depths of about 30 feet ($9^{\text{m}}1$), sand.

Sgeir Cailllich (*Lat. 56° 32' N., Long. 5° 24' W.*) is a group of rocks extending $3\frac{1}{2}$ cables north-eastward from South Shian point, which is situated $9\frac{1}{2}$ cables south-south-eastward of Airds point.

Chart 2814b.

There is anchorage at the head of the loch, about $1\frac{1}{2}$ cables from the south-eastern shore, in depths of from $5\frac{1}{2}$ to 7 fathoms ($10^{\text{m}}1$ to $12^{\text{m}}8$), 50 mud.

Chart 2814a.

Directions.—A small vessel should approach the entrance at the beginning of the flood tide, and, if coming from southward, can pass on either side of Glas eilean (page 223).

Chart 2814a.

The northern extremity of Glas eilean should be brought in line astern with Branra Rock beacon (page 223), bearing 259° . A vessel should steer on this transit until within about $2\frac{3}{4}$ cables south-westward of Airds point, whence she should steer in mid-channel.

After passing northward of Eriska she should keep on the eastern side of the channel, taking care to avoid the foul ground extending about three-quarters of a cable westward from the point just northward of Woodhall village, eastward of the north-eastern extremity of Eriska. Care should also be taken to avoid the foul ground extending about three-quarters of a cable westward from North Shian point, 2 cables southward of Woodhall village; a rock in this vicinity dries about 13 feet ($4^{\text{m}0}$).

After passing this latter rock the vessel should steer with it in line with the point northward of Woodhall village, bearing about 345° , astern, which leads through the fairway eastward of Sgeir Cailllich.

Airds bay and Port Appin.—Beacon.—Airds bay is entered between Airds point and Ru nan Clach Tholl, $4\frac{1}{2}$ cables north-north-westward, is open south-westward; the head of this bay dries out about $2\frac{1}{2}$ cables.

Ru nan Clach Tholl, remarkable for a natural arch near the point, is the termination of a rocky promontory rising to a tableland extending $6\frac{1}{2}$ cables north-eastward to the village of Port Appin. The dangers south-westward and westward of Ru nan Clach Tholl are described on page 223.

A vessel can obtain anchorage in the centre of Airds bay, abreast the southern extremity of Ru nan Clach Tholl, in depths of about 36 feet ($11^{\text{m}0}$), good holding ground, out of the influence of the tidal streams.

A ruined wooden and stone pier, 300 feet ($91^{\text{m}4}$) long, extends from the western side of Ru nan Clach Tholl (*Lat.* $56^{\circ} 33' N.$, *Long.* $30^{\circ} 25' W.$), about $4\frac{1}{2}$ cables north-north-eastward of its south-western extremity.

A beacon stands on the shore, about half a cable southward of the ruined pier, marking the landing place of the telegraph cable to Lismore.

About one cable north-eastward of the ruined pier is a stone slip, used by the ferry-boat plying between Port Appin and the north-eastern end of Lismore.

A sewer outfall extends about half a cable from a position on the coast about one cable north-eastward of the ferry slip.

Vessels plying between Oban and Fort William call regularly at Port Appin, which is connected with the general railway system.

Small quantities of provisions can be obtained at Port Appin.

Submarine cables.—See page 219.

Anchorage on north-western side of Lismore.—Bernera bay, between the north-western side of Lismore and the south-eastern side of Bernera island, is open south-westward, and can be used as a temporary anchorage. A vessel using this anchorage should keep near the eastern shore, so as to avoid the rocks extending about one cable from the south-eastern side of Bernera island.

Port na Moralachd, entered about $4\frac{1}{2}$ miles north-eastward of the north-eastern extremity of Bernera island, is sheltered by Dubh sgeir and Eilean Loch Oscair except from winds between south-west and west, which, when strong, cause a heavy swell in this bay. There is

Chart 2814a.

anchorage for small vessels, in depths of from 7 to 8 fathoms ($12^{\text{m}}8$ to $14^{\text{m}}6$), clay, in the south-eastern part of the bay.

The south-western entrance to Port na Moralachd is deep and free from dangers; a shoal bank extends about one cable south-westward from the southern end of Dubh sgeir. There is a narrow channel between Dubh sgeir and Eilean Loch Oscair, and one north-eastward of the latter islet, but these channels are encumbered with dangers and require local knowledge.

- 10 Port Ramsay, close west-south-westward of Eilean Ramsay (page 226), affords a well-sheltered anchorage to small vessels about one cable west-south-westward of the south-western extremity of Eilean Ramsay, in depths of from 18 to 30 feet ($5^{\text{m}}5$ to $9^{\text{m}}1$), sand and shells. Local knowledge is essential for entering Port Ramsay.

- 15 Camas Eigneig and Camas Chrònaig.—Camas Eigneig, also the bight close north-eastward of it, and Camas Chrònaig are slight indentations on the south-eastern coast of Morvern and should only be used for very temporary anchorage during fine weather. The south-western entrance point of Camas Eigneig is situated about $3\frac{1}{2}$ miles east-north-eastward of Rubha an Ridire (page 219), and the south-western entrance point (*Lat. $56^{\circ} 33' N.$, Long. $5^{\circ} 33' W.$*) of Camas Chrònaig, about $7\frac{1}{2}$ cables north-eastward of the north-eastern entrance point of Camas Eigneig.

Charts 1426, 2814a.

- 25 CENTRAL PART OF LOCH LINNHE.—From the north-eastern end of Lismore the central part of Loch Linnhe extends about $11\frac{1}{2}$ miles north-north-eastward to Corran Narrows; it is from $1\frac{1}{2}$ to $3\frac{1}{2}$ miles wide, but is contracted as Corran Narrows are approached, where Loch Leven branches off eastward. See view on chart 2814a.
- 30 Both shores rise to an almost continuous range of mountains, more or less precipitous, attaining elevations in Sgùrr Dhearg, on the south-eastern shore, $10\frac{1}{2}$ miles east-north-eastward of the north-eastern extremity of Lismore, of about 3,355 feet ($1,022^{\text{m}}6$), and in Meall Dearg Choire nam Muc, 2 miles west-north-westward of Corran Narrows, of 2,403 feet ($732^{\text{m}}4$); some deep valleys penetrate these ranges.

Tidal streams.—In about mid-channel westward of Shuna island the in-going stream begins —0545 Oban (+0110 Dover), the out-going stream begins +0025 Oban (—0505 Dover); the spring rate in each direction is from 0.5 to 0.8 knot. On the eastern side of the southern part of the loch, at a position $6\frac{1}{2}$ cables 005° from Eilean Glas and about 5 cables westward of Shuna, the in-going stream begins —0440 Oban (+0215 Dover), the out-going stream begins +0100 Oban (—0430 Dover); the spring rate in each direction is 0.4 knot, but the streams are weak and uncertain. During the in-going stream an eddy runs south-westward along the western shore of the loch, from Rubha na h-Earba across the entrance to Loch a' Choire.

Farther northward in mid-channel the streams begin, and run at about the same rates, as in mid-channel westward of Shuna but gains strength towards the northern end as Corran Narrows are approached.

During the out-going stream an eddy forms southward of Sallachan point and runs northward into the bay, then eastward, and south-eastward to the point.

Charts 2515, 2635.

Chart 2814a.

Islets and dangers.—**Beacon.**—**Buoyage.**—The islets and dangers close north-eastward of the north-eastern end of Lismore are described on pages 224-225.

Shuna lies about $1\frac{1}{2}$ miles north-eastward of Rubh' Ard Ghainimh (page 221), and is separated from the mainland south-eastward by the Sound of Shuna ; it rises to a table-topped hill, 231 feet ($70^{\text{m}}4$) high, near the north-eastern end. On its south-western side is a white farmhouse. On its north-western side is a clump of fir trees. Near its southern extremity are the ruins of Castle Shuna, a small square building, 101 feet ($30^{\text{m}}8$) high.

Foul ground extends about $1\frac{1}{2}$ cables southward from the southern end of Shuna island and about the same distance south-westward of the south-western part of this island. Foul ground, with a least depth of 2 feet ($0^{\text{m}}6$) over it, extends about one cable offshore westward of the farmhouse.

A bar of shingle and rocks, with depths of from 3 to 6 feet ($0^{\text{m}}9$ to $1^{\text{m}}8$) over it, extends across the south-western entrance to the Sound of Shuna ; the sound is navigated by vessels at high water, but they require local knowledge. Knap point (page 225) in line with Appin house, three-quarters of a mile north-eastward, bearing 043° , leads over the bar in a least depth of 4 feet ($1^{\text{m}}2$).

A rocky patch, with a depth of 45 feet ($13^{\text{m}}7$) over it, lies about one mile north-eastward of the north-eastern extremity of Shuna island. A patch, with a depth of 50 feet ($15^{\text{m}}2$) over it, lies about $4\frac{1}{2}$ cables westward of Creag an Fhithich on the western side of the island.

Charts 1426, 2814a.

Eilean Balnagowan, the southern extremity of which is situated about $2\frac{1}{2}$ miles north-eastward of the north-eastern extremity of Shuna island, attains an elevation of 119 feet ($36^{\text{m}}3$) near its southern end ; a rock, which dries 2 feet ($0^{\text{m}}6$), lies about three-quarters of a cable north-north-eastward of its northern extremity, and a bank, with depths of less than 5 fathoms ($9^{\text{m}}1$) over it, extends about $2\frac{1}{2}$ cables northward from this point.

Rubha na h-Earba (*Lat. $56^{\circ} 38' N.$, Long. $5^{\circ} 24' W.$*), $4\frac{1}{2}$ miles northward of the north-eastern extremity of Lismore, is 226 feet ($68^{\text{m}}9$) high. Sgeir nan Gillean, $1\frac{1}{2}$ cables southward of Rubha na h-Earba, is about 6 feet ($1^{\text{m}}8$) high. There are depths of from 5 to 9 fathoms ($9^{\text{m}}1$ to $16^{\text{m}}5$) in the fairway between this rock and the point, and a bank, with depths of less than 10 fathoms ($18^{\text{m}}3$) over it, extends about 4 cables eastward and south-south-eastward from Sgeir nan Gillean.

Sgeirean nan Torran, about $1\frac{1}{2}$ miles north-eastward of Rubha na h-Earba, are a group of rocks from about one to 2 cables off the north-western shore of the loch ; the north-easternmost rock dries 7 feet ($2^{\text{m}}1$). About 2 cables farther north-eastward and about $1\frac{1}{2}$ cables offshore is a rock, which dries about 12 feet ($3^{\text{m}}7$). Rubha na h-Airde Uinnsinn, situated $2\frac{1}{2}$ miles south-westward of Ruhha na h-Earba, bearing 234° and open south-eastward of Rubha na h-Earba, leads close south-eastward of these rocks.

Chart 1426.

50

Rubha Mòr, $7\frac{1}{4}$ cables north-north-eastward of the north-eastern extremity of Eilean Balnagowan, is a rocky point, 53 feet ($16^{\text{m}}2$) high ; a spit, with depths of less than 5 fathoms ($9^{\text{m}}1$) over it, extends about $1\frac{1}{2}$ cables south-south-westward from Rubha Mòr. Between the

Chart 1426.

outer end of this spit and the bank extending from the northern end of Eilean Balnagowan there is a channel, with depths of from 11 to 18 fathoms (20^m1 to 32^m9).

- 5 The south-eastern shore of the loch north-eastward of Rubha Mòr, for about 2½ miles, is low, and is foul in places for about 1½ cables offshore; a vessel should keep an offing of not less than a quarter of a mile.

Sanda shoal, about 3½ miles north-eastward of Rubha na h-Earba 10 and about 4½ cables offshore, in the entrance to Inversanda bay, has a least depth of 1½ fathoms (2^m3) over it, sand, and is marked on its south-eastern side by a red can buoy. Sallachan Point beacon (see below) in line with Corran Point light-tower (page 239), bearing 049°, leads south-eastward of Sanda shoal.

- 15 From the northern end of Inversanda bay to Rubha Ruadh, about one mile north-eastward, a reef extends from one to 3 cables offshore. Gearradh bank, the southern end of which is situated 1½ cables south-eastward of Rubha a Gearradh, the eastern entrance point of Port a Gearradh, which is situated 9 cables south-westward of Rubha Ruadh, 20 extends about 6½ cables north-eastward, and dries 2 feet (0^m6) at its southern end.

Chart 3521.

Red patch, about 3½ cables eastward of Rubha Ruadh (*Lat. 56° 42' N., Long. 5° 19' W.*), has a least depth of 1½ fathoms (2^m3), rock, over it. 25 There is a narrow channel, with a depth of 6 fathoms (11^m0), westward of this shoal.

Sallachan point, about 1½ miles eastward of Rubha Ruadh, is a low boggy promontory fringed by a flat of large boulders, which dries as much as 9 feet (2^m7); a bank, with depths of less than 3 fathoms 30 (5^m5) over it, extends 3½ cables southward from Sallachan point.

An octagonal beacon, 32 feet (9^m8) high, painted red and white in horizontal bands, stands on Sallachan point but it not very noticeable against the land; see view on chart 1426.

Between Sallachan point and Corran point, a low tongue of shingle 35 about 1½ miles north-eastward, the north-western shore of the loch is fronted by Clovulin flat, which extends 6½ cables offshore to within about 3 cables of the south-eastern shore. Clovulin bay is entered between Sallachan point and Corran point. Clovulin flat lies in the white sector of Corran Point light (page 239), with that light bearing 40 more than 030°.

The south-eastern edge of Clovulin flat is marked by a can light-buoy, painted red and exhibiting a *white group flashing* light showing *two flashes every fifteen seconds* and a red can buoy.

Between the light-buoy and Rubha Cuil-cheanna eastward the 45 fairway is about 2 cables wide.

Rubha Cuil-cheanna, the south-eastern entrance point of the south-western approach to Corran Narrows, lies 1½ miles eastward of Sallachan Point beacon; Cuil-cheanna spit, consisting of sand and stones, extends about 1½ miles south-south-westward from Rubha Cuilcheanna; 50 this spit dries for about 1½ cables offshore. Cuil-cheanna spit is covered by a *red* sector of Corran Point light, where not obscured by the land, with that light bearing less than 030°. A conical light-buoy, painted black and exhibiting a *white flashing* light *every six seconds*, is moored off the southern end of the spit.

Chart 3521.

A shoal, with a depth of 5 fathoms ($9^{\text{m}}1$) over it, lies about 9 cables southward of Kubha Cuil-cheanna.

Charts 3521, 1426.

Loch Leven hotel (page 236), bearing 082° and just open northward of Rubha' a' Bhaid Bheithe (page 235), leads southward of Cuil-cheanna spit and the 5-fathom ($9^{\text{m}}1$) shoal mentioned above. Corran Point light-tower, in line with Meall an t Slamain, a mountain about 1,525 feet ($464^{\text{m}}8$) high, $6\frac{1}{2}$ miles north-north-eastward, bearing about 025° , leads westward of the spit. 10

Chart 2814a.

Sound of Shuna.—Sound of Shuna (page 231) affords shelter from southerly winds to small vessels north-westward of Knap point (*Lat. $56^{\circ} 35' N.$, Long. $5^{\circ} 23' W.$*), about midway between the point and Shuna, in depths of from 5 to 6 fathoms ($9^{\text{m}}1$ to $11^{\text{m}}0$). 15

Dallens bay, close eastward of the northern end of Knap point, affords secure shelter from southerly winds to small vessels about one cable east-south-eastward of Knap point, in depths of from 5 to 7 fathoms ($9^{\text{m}}1$ to $12^{\text{m}}8$), good holding ground.

Tidal streams.—In Sound of Shuna the in-going stream begins 20 +0600 Oban (+ 0030 Dover), the out-going stream begins —0015 Oban (—0545 Dover); the spring rate in each direction is about one knot.

Chart 3608, plan of Loch A' Choire.

Loch a' Choire.—Loch a' Choire is entered between Ceanna Mòr, 25 about $3\frac{1}{2}$ miles north-north-eastward of Caisteal na Gruagaich (page 219), and a point, about $2\frac{1}{2}$ cables south-south-westward; the head of the loch dries out about 2 cables.

The loch affords good shelter, but it is subject to violent squalls which sweep down the glens. 30

A shoal bank extends a short distance southward from the northern entrance point; and about half a cable eastward from the same point. Foul ground extends about three-quarters of a cable offshore from a point about 3 cables southward of Ceanna Mòr.

The Skerries, a rocky shoal, with a least depth of 16 feet ($4^{\text{m}}9$) over 35 it, extends about one cable eastward, and a shoal, with a depth of 28 feet ($8^{\text{m}}5$) over it, lies about $1\frac{1}{2}$ cables west-south-westward of the northern entrance point.

A shoal, with a depth of 8 feet ($2^{\text{m}}4$) over it, lies about $2\frac{1}{2}$ cables from the head of the loch and one cable from the northern shore. A 40 patch, with a depth of 16 feet ($4^{\text{m}}9$) over it, lies close northward of this shoal, and a rock, which dries one foot ($0^{\text{m}}3$), lies half a cable north-north-eastward of the 16-foot ($4^{\text{m}}9$) patch, and is marked by an iron post. There is a mooring buoy close northward of the 16-foot ($4^{\text{m}}9$) patch; neither the iron post nor the mooring buoy can be 45 depended on.

Charts 3608, plan of Loch A' Choire, 2814a.

Camas na Croise.—Camas na Croise is entered between the northern entrance point of Loch a' Choire and Rubha na h-Airde Uinnsinn, 50 7 cables east-north-eastward. The head of this bight dries out about $1\frac{1}{2}$ cables. Glengalmadale river flows into this bay, and on the shores stand a church and several buildings.

A bank, with depths of less than 6 fathoms ($11^{\text{m}}0$) over it, extends about one cable southward from Rubha na h-Airde Uinnsinn. A

Charts 3608, plan of Loch A' Choire, 2814a.

shoal, with a depth of 14 feet (4^m3) over it, lies about $2\frac{1}{2}$ cables north-eastward of the northern entrance point of Loch a' Choire.

Charts 1426, 2814a.

- 5 **Camas Chil Mhalleu.**—Camas Chil Mhalieu is entered westward of Rubha na h-Earba (*Lat. $56^{\circ} 38' N.$, Long. $5^{\circ} 24' W.$*), and affords good shelter from northerly winds. The head of this bight dries out about 2 cables, and the southern edge of this drying portion is marked by a small rock, 2 feet (0^m6) high.

10 *Chart 1426.*

Cuill bay.—Cuill bay, eastward of Rubha Mör (page 231), affords shelter from northerly and easterly winds.

A vessel can obtain anchorage about $7\frac{1}{2}$ cables east-north-eastward of Rubha Mör, in a depth of 6 fathoms (11^m0). Shelter from westerly winds can be obtained in a bight on the eastern side of Eilean Balnagowan (page 231).

Small quantities of provisions can be obtained at Duror, a village about $1\frac{1}{2}$ miles eastward of the south-western extremity of Rubha Mör.

Duror is connected with the general railway system.

- 20 **Kentallen bay.**—Kentallen bay is entered about 2 miles southward of Ruhha Cuill-cheanna (page 232); it affords anchorage in fine weather to small vessels about one cable south-south-eastward of the western entrance point, in depths of from 8 to 10 fathoms (14^m6 to 18^m3). It is open northward, and during westerly gales the wind blowing against the mountains in the vicinity is deflected, causing violent squalls from unpredictable directions.

Kentallen pier is situated about $4\frac{1}{2}$ cables north-eastward of the western entrance point of the bay.

A shoal, with a depth of 6 feet (1^m8) over it, lies half a cable west-north-westward, and a shoal, with a depth of $4\frac{1}{2}$ fathoms (8^m2) over it, lies about $1\frac{1}{2}$ cables northward of the head of Kentallen pier. A vessel approaching the pier from north-eastward should take care to avoid the coastal reef, which extends about three-quarters of a cable offshore in this vicinity.

- 35 **Communications.**—Vessels plying between Oban and Fort William call here regularly. The pier is connected with the general railway system.

Camas Shallachain.—Camas Shallachain is entered between Ruhha Ruadh and Sallachan point, about $1\frac{1}{2}$ miles eastward; its head, into which River Gour flows, dries out about 3 cables.

- 40 Red patch, lying in the southern approach to Camas Shallachain, is described on page 232. A shoal, with a depth of 3 fathoms (5^m5) over it, lies about $3\frac{1}{2}$ cables east-north-eastward, and a shoal, with a depth of one fathom (1^m8) over it, about $7\frac{1}{2}$ cables north-eastward of Rubha Ruadh. Sgeirean Shallachain, about $7\frac{1}{2}$ cables north-eastward of Rubha Ruadh, consists of three rocks, of which the south-easternmost, the highest, has an elevation of 9 feet (2^m7).

Temporary anchorage may be obtained a little inside a line joining Sallachan point (*Lat. $56^{\circ} 42' N.$, Long. $5^{\circ} 17' W.$*) and Sgeirean Shallachain, in a depth of about 8 fathoms (14^m6).

- 50 **Ballachulish bay.**—Ballachulish bay is entered between Rubh' a' Bhaid Bheithe (page 235) and Onich pier, 9 cables northward, the entrance to Loch Levan is situated at its head; it affords anchorage to large vessels. The shore bank does not extend beyond a distance of $1\frac{1}{2}$ cables from the shores of the bay.

Charts 2475, 2515, 2635.

Chart 1426.

The village of Onich is situated near the pier, and North Ballachulish village, at the head of the bay, on the northern side of the entrance to Loch Leven; houses are dotted along the shores of the bay, between Onich and North Ballachulish village. South Ballachulish village is situated on the southern side of the entrance to Loch Leven.

Small quantities of provisions can be obtained at Onich, and at North and South Ballachulish. Fresh provisions are obtainable from Glasgow by train.

Tidal streams.—The streams are very weak in Ballachulish bay, but increase as the entrance to Loch Leven is approached; directly off the entrance the streams, especially the out-going stream, are appreciable. In the north-eastern corner of the bay a weak eddy runs south-eastward during the out-going stream at springs.

Chart 3521.

In Caolas Mhic Phadruig the in-going stream begins —0515 Oban (+0140 Dover), the out-going stream begins +0100 Ohan (-0430 Dover); the spring rate in each direction is from 4 to 5.5 knots. The streams are weak in the outer part of Loch Leven, and negligible in the inner part, but run strongly in Caolas nan Con, the channel between the two parts, where the spring rate of the in-going stream is about 6 knots, and of the out-going stream about 4.2 knots; the times at which these streams begin are not known but the in-going stream probably begins about —0430 Oban (+0225 Dover) and the out-going stream about +0100 Ohan (-0430 Dover).

Dangers.—**Buoy.**—Between Kentallen pier (page 234) and Rubh' a' Bhaid Bheithe, 8½ cables north-eastward, with the exception of the shoal with a depth of 4½ fathoms (8^m2) over it one cable northward of Kentallen pier, there are no dangers beyond one cable offshore. Foul ground extends about three-quarters of a cable north-westward and northward from Rubh' a' Bhaid Bheithe (*Lat. 56° 41' N., Long. 5° 13' W.*); Sgeir nan Ròn, lying at the north-western edge of this foul ground, dries 10 feet (3^m0), and is marked by a black conical buoy.

Cuil-cheanna spit, extending 1½ miles south-south-westward from Rubha Cuil-cheanna, and the 5-fathom (9^m1) shoal, 9 cables southward of the same point, are described on page 232.

A bank, with depths of from 6 to 10 fathoms (11^m0 to 18^m3), stones and rocks, over it, lies about 3½ cables east-north-eastward of Rubh' a' Bhaid Bheithe and about 1½ cables from the southern shore of the bay.

Charts 3521, 1426.

Loch Leven hotel (page 236) in line with Sgòr na Ciche, known also as Pap of Glencoe, a conical mountain, 2,424 feet (738^m8) high, 3½ miles eastward, bearing 091, leads northward of this bank.

Chart 3521.

Currachd Liath, about 4½ cables eastward of Rubh' a' Bhaid Bheithe, is a rock, 6 feet (1^m8) high, close to the southern shore. About half a cable east-north-eastward of Currachd Liath, in the western approach to Ballachulish pier, which is situated 2 cables eastward of Currachd Liath, is a shoal, with a least depth of 3 feet (0^m9) over it.

Anchorages.—**Mooring buoys.**—Large vessels anchor as convenient in Ballachulish bay, in depths of from 15 to 25 fathoms (27^m4 to 45^m7), mud, but in the centre of the bay, near the entrance to Loch

Chart 3521.

Leven, the tidal streams, especially the ebb, at springs, are strong enough to render it advisable to moor.

The best berth is about $1\frac{1}{2}$ cables northward of Ballachulish pier, in 5 depths of from 10 to 12 fathoms (18^m3 to 21^m9), good holding ground, stiff mud, sand, and shells, and out of the influence of the tidal streams.

Vessels can obtain anchorage during fine weather in the north-eastern corner of the bay, about 2 cables south-westward of St. Bride's church, which is situated $6\frac{1}{2}$ cables northward of Loch Leven hotel, in depths of from 11 to 12 fathoms (20^m1 to 21^m9), stiff mud. This anchorage is exposed to south-westerly winds, which cause a considerable swell, and with southerly winds heavy squalls blow down from the mountains.

15 There are numerous mooring buoys in the bay, the positions of which can best be seen on the chart.

Ballachulish pier extends into a depth of 12 feet (3^m7), and Onich pier into a depth of 3 feet (0^m9); Ballachulish pier was, in 1952, derelict and unusable. There is a pier, with a depth of $4\frac{1}{2}$ fathoms (7^m8) at its 20 head, about $1\frac{1}{2}$ cables westward of St. Bride's church, and about $1\frac{1}{2}$ cables farther westward is a church, but it is difficult to distinguish.

There is a landing place alongside the ferry slipway, on the southern side of Caolas Mhic Phadruig, close to the Ballachulish hotel, but the tidal streams run strongly here; in 1935, there was a depth of $3\frac{1}{2}$ feet 25 (1^m1) alongside its outer end.

Communications.—Vessels plying between Glasgow and Fort William, and between Oban and Fort William, call at Onich pier regularly.

Ballachulish Ferry station, three-quarters of a mile eastward of 30 Ballachulish pier (*Lat. $56^{\circ} 41' N.$, Long. $5^{\circ} 12' W.$*), is connected with the general railway system.

Charts 3521, 1426.

Loch Leven.—Loch Leven, which is entered from the head of Ballachulish bay, is navigable by small vessels.

35 *Chart 3521.*

The narrows at the entrance to the loch are called Caolas Mhic Phadruig. Large flats, which dry, formed by silt from the mountain streams, extend from the shore on both sides of the entrance for about three-quarters of a cable, and between the western parts of these 40 flats is a bar, with depths of from one to 2 fathoms (1^m8 to 3^m7) over it, which rises suddenly from a depth of about 16 fathoms (29^m3) in Ballachulish bay, and falls to depths of 3 and 4 fathoms (5^m5 and 7^m3) in the middle of the narrows, eastward of which is another bar, with a least depth of $1\frac{1}{2}$ fathoms (3^m2) over it.

45 Loch Leven hotel and Ballachulish hotel, a large building of grey stone, 2 cables south-westward of Loch Leven hotel, are situated one on each side of Caolas Mhic Phadruig; Stuart memorial, a stone monument, stands close south-eastward of Ballachulish hotel.

Within Caolas Mhic Phadruig is a small deep basin immediately 50 eastward of which the loch contracts, forming a second narrows.

Chart 1426.

Between the second narrows and the inner narrows, about 4 miles eastward, there are several islets and rocks in the fairway.

Caolas nan Con, the inner narrows, are about 30 yards (27^m4) wide,

Chart 1426.

with a depth of 11 feet (3^m4). Above Caolas nan Con, the loch, for about $2\frac{1}{2}$ miles to its head, is for the most part very narrow.

Tidal streams.—See page 235.

Lights.—A light is exhibited, at an elevation of 20 feet (6^m1), from a mast, situated at the head of a jetty situated on the southern side of the head of the loch, about 2 miles east-north-eastward of the eastern end of Caolas nan Con. 5

A light is exhibited, at an elevation of 20 feet (6^m1) from a post situated at the north-western corner of a wharf, on the southern side of the head of the loch, about three-quarters of a cable north-eastward of the light at the head of the jetty. 10

Chart 3521.

Islets and dangers in Loch Leven.—Clach Mhic Phadruig, situated close offshore, on the southern side of Caolas Mhic Phadruig, 15 about one cable eastward of the Stuart memorial, dries 6 feet (1^m8); a rock, with a depth of 3 feet (0^m9) over it, lies about half a cable north-westward of Clach Mhic Phadruig.

About three-quarters of a cable east-south-eastward of Loch Leven hotel a spit extends about one cable south-eastward from the north-western shore of the loch; there is a rock awash near the south-eastern end of this spit. 20

Chart 1426.

Rubha Charnuis, on the northern side of the loch, about $6\frac{1}{2}$ cables east-south-eastward of Loch Leven hotel, is a low green sloping point 25 at the end of a raised beach; here the width of the loch is about $1\frac{1}{2}$ cables, but the channel is narrowed to three-quarters of a cable by a reef extending from either shore.

Eilean Choinneich, about $2\frac{1}{2}$ cables east-south-eastward of Rubha Charnuis, is a flat green island, 20 feet (6^m1) high. It is fringed by 30 boulders, which extend about half a cable south-south-eastward from its southern end and are steep-to. A bank, with depths of less than 2 fathoms (3^m7) over it, extends about $1\frac{1}{2}$ cables westward from the islet, leaving a narrow channel close eastward of Rubha Charnuis, with depths of from $1\frac{1}{2}$ to 5 fathoms (0^m5 to 9^m1). Foul ground 35 extends about one cable east-south-eastward from Eilean Choinneich, and an above-water and sunken reef lies close eastward of this foul ground. Sgeir Dhuhb is a detached shoal, with a depth of one foot (0^m3) over it, lying about $1\frac{1}{2}$ cables south-south-eastward of Rubh' Ard Daraich, a promontory on the northern side of the loch, about 40 $5\frac{1}{2}$ cables eastward of Rubha Charnuis.

About $3\frac{1}{2}$ cables east-north-eastward of Rubh' Ard Daraich, a rocky spur, extends about three-quarters of a cable from the northern shore of the loch.

Ballachulish slate quarries are on the southern shore of the loch, 45 $2\frac{1}{2}$ miles from the entrance; an artificial harbour has been formed by the débris from the workings, thrown out from two points in a northerly direction, and here vessels can lie alongside wharves.

The channel southward of Eilean Choinneich (*Lat. $56^{\circ} 41' N.$, Long. $5^{\circ} 09' W.$*) is about $2\frac{1}{2}$ cables wide, and is free from dangers with 50 depths of from 5 to 17 fathoms (9^m1 to 31^m1).

Eilean Munde, situated about 7 cables eastward of Eilean Choinneich and about $1\frac{1}{2}$ cables from the southern shore of the loch, is 39 feet (11^m9) high. It has been used as a burial ground from ancient times,

Chart 1426.

and the ruins of a chapel still stand near its western end. Eilean Munde is the south-westernmost of a group of islets and rocks, extending about $3\frac{1}{2}$ cables east-north-eastward ; these islets and rocks are connected with each other by a reef that dries. A rock, with a depth of 4 feet (1^m2) over it, lies on the eastern edge of the bank extending east-north-eastward from Eilean Munde.

The southern extremity of Eilean Munde in line with the southern extremity of Eilean Choinneich, bearing about 272° , leads close southward of the rock, with a depth of 4 feet (1^m2) over it.

The south-eastern shore, between Rubha na Glas-lice, about $5\frac{1}{2}$ cables east-south-eastward of Eilean Choinneich, and Creagan nan Caorach, one mile east-north-eastward, forms a bay into which River Coe flows. The eastern part of this bay dries out about $1\frac{1}{2}$ cables. Creagan nan Caorach, on which stands a large house, is wooded, and rises to an elevation of 244 feet (74^m4). Sgör na Ciche (page 235), lies $1\frac{1}{2}$ miles eastward of Creagan nan Caorach.

Callert house, on the low ground near the northern shore opposite Creagan nan Caorach, about one mile east-north-eastward of Rubh' Ard Daraich, is a grey stone building, surrounded by woods ; half a mile east-north-eastward of the house is Callert cottage, a small villa enclosed by a plantation.

Abreast Creagan nan Caorach (*Lat. $56^\circ 41' N.$, Long. $5^\circ 06' W.$*) the loch is about $2\frac{1}{2}$ cables wide, with depths of over 20 fathoms (36^m6) in mid-channel ; thence to Caolas nan Con the loch is free from dangers in the fairway, the mountains on either side rising to a considerable height, in some places precipitously.

There are no dangers in the fairway between Caolas nan Con and the head of the loch.

Eilean nam Ban, lying close offshore, on the northern side of the loch, about one mile from its head, is low ; the coastal reef extends about half a cable south-westward from its south-western end.

Chart 3521.

Submarine cables.—Submarine cables, the directions of which are marked on the chart, are laid across Caolas Mhic Phadruig about 2 and 4 cables within the entrance ; the landing place on either shore is marked by a beacon, painted in red and white bands. See page 7.

Ferry.—A ferry, the route of which is indicated by a pecked line on the chart, plies across Caolas Mhic Phadruig, between North and South Ballachulish.

Anchorages.—Poll an Dunain is entered $1\frac{1}{2}$ cables east-north-eastward of the eastern cable beacon on the northern side of Caolas Mhic Phadruig ; it affords anchorage to small vessels, in a depth of 2 fathoms (3^m7). A vessel entering this anchorage should pass westward of Eilean na h-Iuraiche, 40 feet (12^m2) high, close off the eastern side of this bight, but as the entrance is encumbered with rocks local knowledge is necessary.

Chart 1426.

Small vessels can obtain temporary anchorage in the channel eastward of Rubha Charnuis.

Small vessels can obtain anchorage with good holding ground north-north-eastward of Eilean Choinneich, but the approach, which is from south-south-eastward, is difficult.

Camas na h-Airidh, a slight indentation on the northern shore of the

Chart 1426.

loch, about one mile east-north-eastward of Callert house, affords good anchorage to small vessels about one cable offshore, in a depth of 9 fathoms ($16^m 5$).

Camas Eilean nam Ban, a bight on the northern shore, immediately westward of Eilean nam Ban, affords anchorage to small vessels.

Quays.—There is a wharf and a jetty, situated on the southern side of the head of the loch, off the village of Kinlochleven (*Lat. 56° 43' N., Long. 4° 59' W.*) ; the former has depths of from 12 to 18 feet ($3^m 7$ to $5^m 5$) along its southern side, and the latter depths of from 18 10 to 21 feet ($5^m 5$ to $6^m 4$) along its northern side.

Chart 3521.

Corran Narrows.—Corran Narrows (page 230) have depths of from 6 to 15 fathoms ($11^m 0$ to $27^m 4$) in the fairway, which is about one cable wide ; depths of less than 5 fathoms ($9^m 1$), rock, extend about 15 one cable southward from Corran Point light-tower.

Tidal streams.—From southward, the rates of the streams increase as the Narrows are approached, and in mid-channel between Sallachan point and Rubha Cuil-cheanna, the spring rate in both directions is about 2 knots. Northward of the Narrows the rates decrease quickly, 20 and about one mile from them the spring rate is only about 0.8 knot in both directions.

In the Narrows the in-going stream begins —0600 Oban (+0055 Dover), the out-going stream begins +0005 Oban (-0525 Dover) ; the spring rate in each direction is from 4 to 5.5 knots. With strong 25 winds blowing against the stream there are overfalls across the whole width of the channel.

The in-going stream is strongest on the south-eastern side of the channel and runs thence along the south-eastern shore of the northern part of Loch Linnhe ; about $1\frac{1}{2}$ miles from the Narrows its rate is 30 about 0.8 knot at springs. In mid-channel off Rubha Dearg the rate is less, and here, after about —0255 Oban (+0400 Dover), the in-going stream forms an eddy, which runs north-westward towards Rubha Dearg, south-westward along the north-western shore of the loch, round An Camas Aiseig, and south-eastward to Corran point, off which 35 there are overfalls where the eddy meets the in-going stream ; the eddy begins earlier in An Camas Aiseig than off Rubha Dearg, about —0430 Oban (+0225 Dover), and the stream runs southward and south-eastward round the bay continuously for about 11 hours, and westward and north-westward for about $1\frac{1}{2}$ hours ; the spring rate of the eddy is 40 about 0.5 knot between Rubha Dearg and An Camas Aiseig, but increases to about 1.5 knots along the south-western shore of the bay.

In the northern half of Loch Linnhe, the out-going stream runs directly towards the Narrows ; after passing the Narrows an eddy 45 forms on the north-western side of the channel. This eddy runs north-eastward in Clovulin bay, towards Corran point (*Lat. 56° 43' N., Long. 5° 14' W.*), south-eastward of which there are overfalls where it meets the out-going stream. During the out-going stream an eddy also runs northward in the bay between Rubha Cuil-cheanna and 50 Corran Narrows.

Light.—A light is exhibited, at an elevation of 38 feet ($11^m 6$), from a white tower, 42 feet ($12^m 8$) in height, situated on Corran point. See view facing page 201, and on chart 1426.

Chart 3521.

Dangers.—Buoys.—The dangers in the south-western approach to Corran Narrows are described on page 232.

From the south-western shore, about $2\frac{1}{2}$ cables north-westward of Corran Point light-tower, a spit, with depths of from one to 3 fathoms (1^m8 to 5^m5) over it, extends about $1\frac{1}{2}$ cables north-eastward.

Corran shoal, about $3\frac{1}{2}$ cables northward of Corran Point light-tower (*Lat. $56^{\circ} 44' N.$, Long. $5^{\circ} 15' W.$*) and about $2\frac{1}{2}$ cables from the south-western shore of the loch, has a least depth of 2 feet (0^m6), rock and gravel, over it; it is marked on its north-eastern side by a red can buoy. Between the southern side of Corran shoal and the north-eastern end of the spit extending from the south-western shore of the loch are depths of from 4 to 5 fathoms (7^m3 to 9^m1).

Corran shoal lies in the *white* sector of Corran Point light, bearing less than 216° .

Rubha Cuil-cheanna (page 232), bearing 191° , and open eastward of Corran Point light-tower, leads eastward of Corran shoal.

Anchorages.—Small vessels from southward, not wishing to take the Narrows during the ebb stream, may anchor, in fine weather, off Clovulin flat north-eastward of the light-buoy, with Corran Point light-tower bearing about 030° , out of the strength of the stream.

There is good anchorage for small vessels southward of the western end of Corran shoal, in a depth of about 9 fathoms (16^m5).

Piers.—Ardgour pier, $1\frac{1}{2}$ cables north-north-westward of Corran Point light-tower, is a wooden structure, with depths of from 10 to 13 feet (3^m0 to 4^m0) at its head. Vessels plying between Oban and Fort William call here regularly.

From a jetty, about a quarter of a cable south-eastward of Ardgour pier, a ferry plies to a jetty on the opposite shore.

Charts 3521, 1426.

Directions.—A vessel approaching Corran Narrows from south-westward should steer with Corran light-tower in line with Meall an t Slamain (page 233), bearing 025° , which leads through the fairway, passing north-westward of Culchenna spit, and south-eastward of the light-buoy and the black can buoy marking the south-eastern edge of Clovulin flat. When nearing the black can buoy the vessel can steer to pass through the Narrows but it is necessary to guard against sudden swirls when passing through. Large vessels should only pass through the Narrows by daylight, and at, or a short time after, high water.

At night.—A vessel should steer for a position about half a mile north-westward of Culchenna Spit light-buoy, thence she should steer 030° , keeping on the line dividing the *red* and *white* sectors of Corran Point light until near the light-buoy marking the south-eastern edge of Clovulin flat, whence she can steer to pass through the Narrows.

Chart 1426.

NORTHERN PART OF LOCH LINNHE.—The northern part of Loch Linnhe is deep, and there are no dangers in mid-channel as far northward as Fort William (*Lat. $56^{\circ} 49' N.$, Long. $5^{\circ} 06' W.$*), on the eastern shore of the loch, 7 miles from Corran Narrows.

The entrance to the Caledonian canal is at the head of the loch, about $1\frac{1}{2}$ miles north-westward of Fort William.

Within Corran Narrows a mountainous ridge rises close to the shore

Chart 1426.

on each side of the loch ; Beinn na Cille, $1\frac{1}{2}$ miles north-westward of Corran Point light-tower, on the western shore, attains an elevation of about 2,390 feet ($728^{\text{m}}5$), and there is a waterfall about halfway down on its southern slope. 5

Submarine cables.—Submarine cables, indicated on the chart, cross the loch about three-quarters of a mile northward of Corran Narrows. *See page 239.*

Lights.—Beacons.—A light is exhibited, at an elevation of 17 feet ($5^{\text{m}}2$), from the pier at the south-western end of the town of Fort ¹⁰ William. An additional light is also occasionally exhibited from this pier.

A light is exhibited, at an elevation of 19 feet ($5^{\text{m}}8$), from a post, 13 feet ($4^{\text{m}}0$) in height, situated on the Lochaber Power Company's pier-head, about $2\frac{1}{2}$ cables northward of Fort William pier light. 15

Chart 1791, plan of Approaches to Corpach.

A light is exhibited, at an elevation of 21 feet ($6^{\text{m}}4$), from a white circular tower with a pointed roof, 20 feet ($6^{\text{m}}1$) in height, situated on the northern sea-lock wall at Corpach, about $1\frac{1}{2}$ miles north-north-westward of the Lochaber Power Company's pier light. 20

Two beacons, which formerly marked the northern limit of a measured distance, stand on the eastern shore, about $1\frac{1}{2}$ miles southward of Fort William.

Chart 1426.

Islets and dangers.—Buoyage.—Black rock (*Lat. $56^{\circ} 45' N.$, Long. $5^{\circ} 12' W.$*), situated on the south-eastern side of the loch, about $2\frac{1}{2}$ miles north-eastward of Corran Point light-tower, dries about 12 feet ($3^{\text{m}}7$) ; a bank, with depths of less than 5 fathoms ($9^{\text{m}}1$) over it, extends about $3\frac{1}{2}$ cables south-westward from Black rock and about half a cable north-eastward ; a patch, with a depth of $1\frac{1}{4}$ fathoms ($3^{\text{m}}2$) over it, lies $1\frac{1}{2}$ cables south-south-westward of Black rock and about one cable offshore. There are depths of from 2 to 3 fathoms ($3^{\text{m}}7$ to $5^{\text{m}}5$) between Black rock and the south-eastern shore of the loch. These dangers are covered by the *red* sector of Corran Point light, bearing more than 216° . 35

Sgeir Mhic Ic Alasdair or Glengarry's rock, situated close offshore on the north-western side of the loch, about $2\frac{1}{2}$ miles north-north-eastward of Corran Point light-tower, is 2 feet ($0^{\text{m}}6$) high ; a shoal, with a depth of 5 fathoms ($9^{\text{m}}1$) over it, lies about $2\frac{1}{2}$ cables south-eastward of Sgeir Mhic Ic Alasdair. 40

A boathouse stands on Rubha na h-Airde, a promontory $2\frac{1}{2}$ cables north-north-eastward of Sgeir Mhic Ic Alasdair ; Conaglen house, $5\frac{1}{2}$ cables north-westward of the boathouse, stands among the trees.

Victorious rock, about 3 cables eastward of the boathouse, has a depth of $2\frac{1}{2}$ fathoms ($5^{\text{m}}0$) over it. 45

From about $1\frac{1}{2}$ to $1\frac{1}{4}$ miles north-north-eastward of Black rock, off the mouth of River Kiachnish, a reef extends about $1\frac{1}{2}$ cables from the south-eastern side of the loch, thence to within about $2\frac{1}{2}$ cables of the south-western end of Fort William, there are no dangers in the fairway beyond a distance of one cable from the south-eastern shore. 50

A shoal, with a least depth of $3\frac{1}{2}$ fathoms ($6^{\text{m}}4$) over it, lies about $1\frac{1}{2}$ miles north-eastward of the boathouse on Rubha na h-Airde and about $1\frac{1}{2}$ cables from the north-western shore ; thence to Rubha Mòr, $3\frac{1}{2}$ miles northward, there are no dangers in the fairway beyond

Chart 1426.

a distance of one cable from the north-western shore. Kiel farmhouse, situated $9\frac{1}{2}$ cables north-north-westward of Corran Point light-tower, bearing about 222° , and open south-eastward of Rubha Dearn, a 5 promontory $1\frac{1}{2}$ miles northward of the same light-tower, leads south-eastward of this shoal.

Charts 1791, plan of Approaches to Corpach, 1426.

A flat extends from a position about $2\frac{1}{4}$ cables south-westward of the south-western end of Fort William to the entrance to the Caledonian 10 canal at Corpach, embracing the mouths of Rivers Nevis and Lochy, which flow into the loch within about $1\frac{1}{2}$ cables from each other, off the north-eastern end of Fort William (*Lat. $56^{\circ} 49' N.$, Long. $5^{\circ} 07' W.$*) The flat is composed of sand with occasional patches of shingle, extending in places about $3\frac{1}{2}$ cables offshore, gradually decreasing in width 15 towards the entrance to the Caledonian canal. An Caol, a narrow islet, the south-western end of which is about $4\frac{1}{2}$ cables north-north-eastward of the light-structure on the Lochaber Power Company's pier, lies on this flat; it is $4\frac{1}{2}$ feet (1^m4) high near its southern end and 2 feet (0^m6) at the northern end; in other parts it is awash.

20 A black conical buoy surmounted by a black staff and globe, is moored on the western edge of the flat, close to the southern entrance point of River Lochy, about $3\frac{1}{2}$ cables northward of the light-structure on the Lochaber Power Company's pier; between this buoy and the entrance to the canal, one mile north-north-westward, the edge of 25 the flat is marked by two black conical buoys.

Chart 1426.

A shoal, with a depth of $4\frac{1}{2}$ fathoms (8^m7) over it, lies on the north-western side of the fairway, about $3\frac{1}{2}$ cables north-eastward of Rubha Mòr and about $1\frac{1}{2}$ cables offshore.

30 Chart 1791, plan of Approaches to Corpach.

Rubha Dearn is situated about 8 cables north-north-eastward of Rubha Mòr. A flat grassy islet, 8 feet (2^m4) high, lies close eastward of this point, with which it is connected by a narrow tongue of sand and gravel; a reef, which dries, extends three-quarters of a cable 35 southward from the southern end of this islet.

McLean rock, awash, and New rock, with a depth of 5 feet (1^m5) over it, lie on the eastern and western ends, respectively of a shoal, which, with depths of less than 18 feet (5^m5) over it, lies about $1\frac{1}{2}$ cables southward of Rubha Dearn. The channel eastward of this 40 shoal is about $1\frac{1}{2}$ cables wide. A can light-buoy, painted red and exhibiting a *red group flashing* light, showing *two flashes every twelve seconds*, is moored about half a cable south-eastward of McLean rock, and a black conical buoy is moored close north-eastward of New rock.

There are three islets lying in the fairway of the loch, southward 45 and south-westward of Corpach lighthouse, in the eastern approach to Annat Narrows. The easternmost islet, Eilean na Creich, is 4 feet (1^m2) high. Eilean a Bhealaidh, one cable westward of Eilean na Creich, is 7 feet (2^m1) high. These two islets, which are grassy, are connected by a reef which dries, extending about a quarter of a cable 50 eastward from Eilean na Creich and westward of Eilean a Bhealaidh (*Lat. $56^{\circ} 50' N.$, Long. $5^{\circ} 08' W.$*). A shoal, with a depth of 25 feet (7^m6) over it, lies about $1\frac{1}{2}$ cables northward of the northern end of Eilean a Bhealaidh. Eilean nan Craobh, 12 feet (3^m7) high, $1\frac{1}{2}$ cables west-north-westward of Eilean a Bhealaidh, is flat, and has two trees

Chart 1791, plan of Approaches to Corpach.

on it ; it is surrounded by a reef which dries extending about a quarter of a cable from it.

A can light-buoy, painted red and exhibiting a *red flashing light every six seconds* is moored about half a cable north-eastward of Eilean na Creich, on the south-western side of the channel leading to the entrance to the Caledonian canal. 5

A rock, about $2\frac{3}{4}$ cables west-north-westward of the north-western end of Rubha Dearg and about three-quarters of a cable from the southern shore of the loch, has a least depth of $5\frac{1}{2}$ feet (1^m7) over it. 10
Charts 1791, plan of Approaches to Corpach ; 1426.

Tidal streams.—The streams run generally in the directions of the loch (see page 239), and are very weak except in and near Annat Narrows, where the in-going stream begins about —0435 Oban (+0220 Dover), and the out-going stream begins about +0130 Oban (—0400 15 Dover) ; the spring rate in each direction is about 5 knots. Off the entrance to the Caledonian canal the spring rate of the streams in both directions is about 2·5 knots.

In Loch Eil the in-going stream runs mostly along the northern shore, but its rate decreases rapidly from Annat Narrows ; 2 or 3 20 miles from the Narrows the streams are imperceptible.

Chart 1426.

Anchorages.—An Camas Aiseig affords anchorage about $6\frac{1}{2}$ cables north-north-westward of Corran Point light-tower and about $1\frac{1}{2}$ cables offshore, in depths of from 10 to 12 fathoms (18^m3 to 21^m9), mud and 25 shells. Here the tidal streams are scarcely felt, and with southerly and south-westerly winds there is good shelter, but in north-westerly gales squalls come down off the high land of Beinn na Cille with violence from unpredictable directions. The anchorage in Inverscaddle (Inver Scaddle) bay is then preferable. This bay, close north-north-eastward of Rubha Dearg, is nearly filled with silt from River Inverscaddle, which flows into the bay, about 5 cables northward of Rubha Dearg. 30

There is anchorage in the south-western part of Inverscaddle bay about $6\frac{1}{2}$ cables south-south-westward of the boathouse on Rubha na h-Airde and about $1\frac{1}{2}$ cables offshore, with Corran Point light-tower, bearing about 192° , and just open eastward of Rubha Dearg, and the boathouse on Rubha na h-Airde bearing 028° and open south-eastward of Sgeir Mhic Ic Alasdair, in depths of from about 8 to 10 fathoms (14^m6 to 18^m3), mud. 40

About 2 cables offshore, inside Victorious rock, vessels can obtain good sheltered anchorage, except from south-easterly winds.

There are suitable depths for anchoring along the north-western shore for $1\frac{1}{2}$ miles north-north-eastward of Sgeir Mhic Ic Alasdair, but this locality has not been closely examined, and it should be 45 used with great caution as there may be some unknown rocky patches.

There is good holding ground, mud and clay, in depths of from 4 to 8 fathoms (7^m3 to 14^m6), about $1\frac{1}{2}$ cables westward of Fort William pier (*Lat. $56^\circ 49' N.$, Long. $5^\circ 07' W.$*), but the edge of the bank is very 50 steep. During south-westerly gales a heavy sea, to which this anchorage is exposed, sets up the loch ; it is then advisable to obtain shelter in Camas nan Gall.

Camas nan Gall, on the north-western shore of the loch, just above

Chart 1426.

Fort William, affords anchorage to small vessels, in depths of from 5 to 7 fathoms (9^m1 to 12^m8), the southern point of the bay giving protection from the short heavy sea experienced in the loch during 5 south-westerly gales.

A vessel approaching this anchorage should take care to avoid the shoal, with a depth of $4\frac{1}{2}$ fathoms (8^m7) over it, about $3\frac{1}{2}$ cables north-eastward of Rubha Mör, also the shoal $1\frac{1}{2}$ cables southward of Ruhha Dearn.

10 Chart 1791, plan of Approaches to Corpach, 1426.

Directions.—From abreast Fort William a vessel proceeding to Corpach should steer to pass between the black conical buoy marking the western edge of the flat at the entrance to River Lochy and the $4\frac{1}{2}$ -fathom (8^m7) shoal north-eastward of Ruhha Mör. She should 15 then steer to pass close eastward of the red light-buoy, marking McLean rock, south-westward of the two black conical buoys marking the western edge of the flat northward of the entrance to River Lochy, north-eastward of the red light-buoy marking the northern edge of the shoal depths off Eilean na Creich, and thence towards the entrance 20 of the canal.

When proceeding through this channel on the out-going tidal stream, a vessel should keep well clear of the flat on the north-eastern side of the channel, as the tidal stream running southward of the islets southward of Corpach sets towards the flat.

25 Chart 1426.

Fort William.—Fort William is a small town on the eastern side of the head of Loch Linnhe. The fort stands on a gravel spit about $3\frac{1}{2}$ cables north-eastward of the light-structure on Fort William pier, its eastern side overlooking River Nevis, and at high water on its 30 northern and north-western sides are the waters of Loch Linnhe. The town extends along the shore south-westward of the fort.

The Episcopal church in the northern part of the town has a spire.

Beinn Nevis, 4,400 feet ($1,341^m1$) high, is situated $3\frac{1}{2}$ miles east-south-eastward of the fort, and the ruins of Inverlochy castle lie on 35 the southern side of River Lochy, about one mile north-eastward of the fort.

Communications.—Fort William is connected with the general railway system.

There is regular communication by sea with Glasgow and Oban.

40 A ferry plies between Fort William and Camas nan Gall.

Piers.—There are two piers near the south-western end of the town, with depths of from 4 to 8 feet (1^m2 to 2^m4) alongside them.

A viaduct, at the southern end of which is a pier, about $2\frac{1}{2}$ cables northward of Fort William pier, extends over the gravel spit north-45 westward of Fort William. (*Lat. $56^{\circ} 49' N.$, Long. $5^{\circ} 07' W.$*).

Port facilities.—Small quantities of provisions can be obtained, and water is laid on to the pier-head.

Chart 1791, plan of Approaches to Corpach.

Corpach.—The village of Corpach stands along the shore north-50 westward of the entrance to Caledonian canal. It is connected with the general railway system. Small quantities of provisions can be obtained here.

There is a pier on either side of the canal entrance for the use of vessels entering.

Chart 1791, plan of Approaches to Corpach.

A foul area exists in the deep water about 2 cables south-westward of the entrance to the lock at Corpach. Vessels are advised not to anchor in this area.

Chart 1426.

Annat Narrows.—Close westward of Eilean nan Craobh is the entrance to Annat Narrows, which lead into Loch Eil. The width of the navigable channel in these narrows is less than one cable; the least depth in the fairway, which is close to the southern shore, is about $2\frac{1}{2}$ fathoms (4 m 6). 10

Loch Eil.—Loch Eil is entered through Annat Narrows. The loch is deep to within about 4 cables from its head, which dries out about $2\frac{1}{2}$ cables. North Garvan (*Lat. 56° 51' N., Long. 5° 18' W.*) river flows into the loch on its southern side, about one mile from its head; the silt from the river mouth extends about 2 cables offshore. 15

Tidal streams.—See page 243.

Chart 1791.

CALEDONIAN CANAL.—Caledonian canal affords communication between the western and eastern coasts of Scotland, by a route about 350 miles shorter than that through the Little and North Minch 20 and Pentland firth, where the navigation is intricate and the weather often stormy.

The canal, about 50 miles in length, extends from Corpach, at the northern end of Loch Linnhe, north-eastward to Clachnaharry, near Inverness, where it opens into Beauly basin at the south-western end 25 of Inverness firth.

The canalised portion of the canal has a total length of about 19 miles, the remainder of it being formed by Lochs Lochy, Oich, and Ness.

Owing to its tortuousness and to the size of the locks, the canal is not navigable for vessels more than 150 feet (45 m 7) long, and 35 feet 30 (10 m 7) beam, nor for those the draught of which exceeds 13 $\frac{1}{2}$ feet (4 m 1) in fresh water; but vessels up to 160 feet (48 m 8) long can use the canal if their draught does not exceed 9 feet (2 m 7).

The passage from sea to sea generally takes one to 2 days, but under adverse circumstances of wind and weather during the short 35 daylight of winter, it may take longer.

Whilst time and fuel are undoubtedly saved in making the passage through the canal and avoiding the dangerous navigation of the Pentland firth during the prevalence of bad weather, the slow speed necessary for the negotiation of the constant bends and narrow bridge-ways of the canal renders its employment on other occasions of doubtful value. In fine weather practically no time is saved even by a vessel with a speed of from 8 to 9 knots. 40

Sailing vessels and boats can sail through with a fair wind, or can be towed, or tracked through the canalised portions. 45

Strangers should communicate with the canal officials before entering the canal.

The canal, from its entrance at Corpach (*Lat. 56° 51' N., Long. 5° 07' W.*), runs almost parallel with River Lochy for about 6 $\frac{1}{2}$ miles into Loch Lochy. The navigation passes through Loch Lochy, 50 8 miles long, and from the north-eastern end of this loch a canal, 1 $\frac{1}{2}$ miles long, extends into Loch Oich. This latter loch is 3 $\frac{1}{2}$ miles long, and from its north-eastern end a canal continues 4 $\frac{1}{2}$ miles to

Chart 1791.

Loch Ness. Loch Ness is $19\frac{1}{2}$ miles long, and, in places, attains depths of over 120 fathoms ($219^{\text{m}}5$). From the north-eastern end of Loch Ness the route passes through Loch Dochfour, and by canal to Clachnaharry, near Inverness, a distance of $6\frac{1}{2}$ miles.

The average width of the surface of the canal is 110 feet ($33^{\text{m}}5$), and of the bottom 40 feet ($12^{\text{m}}2$), its least depth being 14 feet ($4^{\text{m}}3$). The rise to Loch Lochy is 90 feet ($27^{\text{m}}4$) and to Loch Ness 48 feet ($14^{\text{m}}6$), but the highest level of the canal, about 100 feet ($30^{\text{m}}5$) above
10 Mean high water is in Loch Oich.

Regulations.—Copies of the Regulations can be obtained at the Offices at Clachnaharry.

The canal is controlled by the Ministry of Transport. Extracts from the regulations for vessels using the canal are given below:—

15 All masters of steam and sailing vessels are prohibited from approaching the entrance to the sea locks, when they observe a red flag flying from the flagstaff on the pier during the day, or a red light during the night, but they are to remain anchored in the offing until the flag, or the light, as the case may be, is hauled down. A white light is exhibited,
20 at night, when the entrance is open.

I. A vessel intending to pass into, along, or through the Canal, shall, before being allowed to proceed, give notice thereof to the Collector, specifying the name of the vessel and name of the Master, with a general description of the cargo and whither bound.

25 II. Previous to her departure through either of the sea locks her Pass bills must be given to the Collector of dues or to the lock-keeper.

VI. No vessel shall obstruct the fairway in the entrance to the sea locks; and no vessel shall be allowed to drop anchor in any situation so as to impede the navigation, nor shall run down, or make fast
30 to, any beacons or guide-posts.

VII. No vessel shall enter any lock, or pass a swing bridge, with a sail up; and no vessel shall be permitted to pass through any lock without sufficient checking warps ashore, both fore and aft, to the satisfaction of the lock-keeper.

35 VIII. No vessel shall enter into any of the locks with too much way, but shall be checked by the mooring posts, when necessary, before entering the lock.

IX. Square-rigged vessels, as they enter and pass locks, must have their sails furled, lower yards peaked, jib-booms, running-howsprits,
40 out-riggers, and spanker-boom run in, spritsail-yard fore and aft, davits topped up, anchors properly stowed on the forecastle, and fenders ready at the bows, to prevent damage to the canal works, as well as to other vessels.

X. No vessel, in navigating the canal, shall use booms or setting
45 poles, but such as are flat on the bottom, at least three inches diameter. Fenders of junk, broom or brushwood, are strictly prohibited; but cork and fir fenders may be used.

XII. Vessels of such dimensions as to be admitted into locks more than one at a time, shall be under the regulation of the lock-keeper,
50 as to the number to be so admitted, and as to waiting for each other; under this limitation, that no vessel shall be detained for another beyond ten minutes at any single lock, or at the rate of ten minutes for each lock in a set of united locks.

XIII. No vessel shall navigate the canal, or be allowed to enter

Chart 1791.

or pass through any lock or bridge during the night, namely, from half an hour after sunset to half an hour before sunrise ; unless in cases of very clear weather or moonlight, when the lock-keepers may consider it is not attended with any danger to the works. Vessels 5 may also be admitted into or passed out of either of the sea locks at any hour when the lock-keepers shall judge it safe to do so.

XIV. As a general rule, vessels are not to be passed through the locks or bridges on Sundays ; but in cases of accidental detention or other special cases, of which the Superintendents shall judge, the 10 lock and bridge keepers must pass vessels.

XV. All sailing vessels, of whatever description, arriving at any lock or set of locks, in the same or opposite directions, shall be passed through strictly in the order in which they arrive, either at the head or foot of the respective locks ; that is, in so far as consistent with the 15 saving of unnecessary lockage, and subject, moreover, to the power of detaining vessels for one another within the limits already mentioned. An exception to this rule may occasionally arise by reason of a strong and steady wind, when it is evident that vessels can only proceed in one direction ; in which case the lock-keeper may exercise a dis- 20 cretionary power to pass vessels having the wind in their favour, in preference to those which cannot make head against it. But it is desirable, to avoid disputes, that this power should only be resorted to in very extreme cases, unless with the express consent of the Master or other person having charge of the vessel whose proper turn it may 25 be deemed expedient to postpone.

XVI. The Master or other person in charge of a vessel passing along the canal must give place to another vessel which may be going faster, unless within 500 yards (457^m2) of a lock or bridge ; in which case no sailing vessel shall be permitted to overtake another. 30

XVII. All vessels tracked or towed along the canal shall, when meeting or passed by other vessels that are not so tracked or towed, keep as near as possible to the towing-path side of the canal.

XVIII. All sailing vessels proceeding with a fair wind along the canal, and meeting in opposite directions any steam vessel, shall, 35 as soon as they come within 100 yards (91^m4) of such steam vessel, haul in their booms and keep to the right or starboard side ; but when overtaken by such steam vessel, shall keep to the left or port side, so as to pass one another with ease and safety.

XIX. All vessels proceeding through the lakes on the line of the 40 canal or estuaries approaching thereto, when sailing with a fair wind, and falling in with vessels beating to windward, shall alter their course in sufficient time to pass at the distance of at least 30 yards (27^m4) astern of the vessel so beating to windward.

XX. All vessels proceeding through the lakes and estuaries on 45 the line of the navigation, when beating to windward, and meeting on opposite tacks, shall avoid getting foul of each other, by the vessel on the starboard tack keeping to the wind, and the vessel on the port tack bearing up, so as to pass easily astern of the other.

XXI. No person shall obstruct the passage of the canal, by over- 50 loading any vessel, lighter, barge, or boat.

XXIV. No vessel shall be allowed to moor, or remain stationary, in any of the locks, or at any drawbridge, during the day or night, except by special permission.

Chart 1791.

XXV. No vessel shall load or deliver in the waste or chamber of any of the locks, or remain longer in the same than is absolutely necessary for passing.

5 XXVI. Vessels which are waiting their turn, or otherwise, are not to come too close or crowd the approach to any lock, but must be moored astern of each other on the off side of the canal, so as to allow other vessels to pass out or in conveniently. In like manner, vessels are not to lie or accumulate in the sea lock basins, but must haul out 10 to sea when required to do so.

XXVII. No vessel shall remain in any harbour or basin without one person aboard, ready to slacken or haul in ropes when required, in case of other vessels passing, or accidents on board.

XXIX. The Masters and crews of all vessels, boats, and other craft 15 of whatever description, are strictly prohibited from making the said vessels fast by ropes or lines to the bridges, lock-gates, cranes, lamp-posts, mile-stones, sheds, fences, or other portions of the works; but must, in all cases, make use of the mooring posts provided for that purpose.

XXX. No Master or other person having the charge of a vessel, 20 barge, or raft, shall, on any pretence whatever, make fast warps or mooring lines to any trees growing on the banks of the canal or adjoining grounds.

XXXI. No vessel, boat, or raft shall be moored on the tracking-path side of the canal on any pretence whatever, unless where permission is given to load or discharge goods at any particular point.

XXXII. No vessel, barge, or raft shall be placed or lie abreast in any part of the canal, or passage belonging thereto, not being moored at both ends; nor shall any person or persons navigating or having the care of any vessel, barge, or raft obstruct the navigation 30 of the canal by misplacing or otherwise conducting such vessel, barge, or raft, and shall, immediately upon the request of any officer or servant of the Canal, or of any person navigating any other vessel, barge, or raft, moor the same at both ends, or alter the situation of such vessel, barge, or raft, or otherwise stop or effectually secure the 35 same, as the case may require, so as that such and every obstruction to the speedy and commodious passage of other vessels shall be forthwith removed.

XXXIII. No vessel shall be allowed to have mooring lines fast to the opposite side or across the channel of the navigation, whether 40 in the canal or in the lakes.

XXXIV. Vessels, of whatever description, navigating the lakes or approaches to the canal at either end, during the night, shall carry a light at the bow, which shall be kept burning from sunset till sunrise; and shall also have a person stationed at the bow as a look-out, who 45 shall be provided with a horn or bell which he shall sound to give warning when meeting with other vessels or boats.

XXXIX. No vessel shall be allowed to shift or alter her berth, after being first taken, unless specially ordered or authorised to do so.

XL. Vessels lying at the wharfs or landing places must, when 50 required, have their jib-booms and bowsprits run in.

LIII. All persons are strictly prohibited from throwing ballast, gravel, stones, rubbish, or any other thing, into any part of the canal reaches, basins, or harbours, or upon the banks, wharfs, or landing-places thereof.

Chart 1791.

LIV. Masters or other persons in charge of vessels are also expressly prohibited from discharging ballast in the offing or approach to either of the sea locks, or within half a mile of the channels leading thereto. 5

LXIV. In proceeding along the canal, steam vessels shall be under the same regulations with sailing vessels as to the order in which they shall be admitted into and passed through the locks ; with this difference, that no steam vessel shall be detained either at any single lock or set of locks for other vessels, whether proceeding in the same 10 direction, or in the opposite direction, which may not have arrived at the said lock or locks before her.

LXV. Steam vessels, in like manner, can only be passed through the locks or bridges, or be allowed to proceed along the artificial portions of the canal during the regular hours of daylight, that is, 15 from half-an-hour before sunrise to half-an-hour after sunset, except in cases of clear weather or moonlight, as already mentioned.

LXVI. Steam vessels, carrying passengers, starting from either end of the canal at fixed hours, and whose arrival at any single lock or set of locks may be depended on at a given time, are to have precedence of passage, even to the exclusion of other vessels which may have arrived at the said lock or locks before them, in so far as this shall be deemed necessary to preserve (within a reasonable margin) due regularity and despatch in the movements of the said steam vessels. 20

LXVIII. Steam vessels when approaching any lock, shall, in every 25 case, *slow* their engines when at a distance of full 300 yards ($274^{\text{m}}3$) from such lock ; and shall *stop* their engines at the distance of full 100 yards ($30^{\text{m}}5$) from the nearest lock-gates, so as to enable the vessel to be brought up with perfect safety to the works, or to other vessels which may be in the lock before them. 30

LXIX. In passing through or leaving any lock, the Master or other person in charge of any steam vessel shall not set on his engines until the lock-keeper gives the word that the lock-gates are properly opened up, the ropes cast off, and the vessel in a fit position or moving through with safety. 35

LXX. When steam vessels, sailing along the artificial portions of the canal and in opposite directions, meet one another, each shall slow her engine as soon as she comes within 300 yards ($274^{\text{m}}3$) of the other, and shall keep as near as she can towards the side of the canal to the right or starboard, so as to afford all possible facility to each 40 other to pass ; and when so meeting in any of the lakes along the line of the navigation, or in the estuaries immediately approaching thereto, each shall also keep to the right or starboard side, by putting the helm over in sufficient time to let them pass at a distance of not less than 20 yards ($18^{\text{m}}3$) as under. 45

LXXI. When steam vessels plying on the canal in the same direction, but with unequal velocity, approach each other, the vessel which sails slowest shall keep sufficiently to the left or port side, and stop her engine for the faster sailing vessel to pass, as soon as the latter comes within 30 feet ($9^{\text{m}}1$) of the former, and until the faster sailing vessel 50 shall have passed her to the extent of 30 feet ($9^{\text{m}}1$), and shall offer no obstruction whatever, by crossing the channel or otherwise, to the free passage of the vessel astern.

LXXII. Steam vessels, when meeting or passing other vessels

Chart 1791.

which are being tracked in the canal, shall keep to the off-side of the towing-path, and shall, on no pretence, attempt to cross or interfere with the tracking lines of such other vessels.

5 LXXIII. All steam vessels plying in the lakes or estuaries on the line of the navigation, and falling in with vessels beating to windward, shall alter their course in sufficient time to pass at the distance of thirty yards astern of the vessel so beating to windward.

10 LXXIV. During the darkness of night, or in time of thick fog, the Masters and crews of steam vessels navigating the lakes or estuaries as aforesaid, shall limit their speed, in the navigation of the said vessels, to from three to four miles per hour.

15 LXXV. All steam vessels, whether proceeding through the lakes and estuaries as aforesaid, or lying at anchor or aground in any part of the line of the navigation, shall, from sunset to sunrise, or in time of thick fog, have a sufficiently brilliant and conspicuous light hung out ahead when sailing, and when moored or lying aground placed at the part of the vessel nearest the deep water.

20 LXXX. It is strictly and expressly enjoined that no ashes shall be thrown overboard, or any ballast, coals, dross, earth, dung, stones, decayed fruit or vegetables, rubbish, refuse, or other matter from any steam vessel, be put or suffered to fall over the sides, in washing the decks or otherwise, either when in harbour, or when proceeding along any portion of the canal, except in deep water of Loch Ness or Loch *25* Lochy. In like manner, no ashes or rubbish of any kind shall be thrown over in any of the channels approaching to either of the sea locks.

30 LXXI. All Masters of steam vessels plying on the canal, or lakes connected therewith, shall take off the steam power of the said vessels on approaching the dredging-machines for deepening the channel of the navigation, and the punts belonging to the Commissioners, when loading or discharging; and shall move along slowly for 100 yards (91^m4), both before and after passing the dredging apparatus and punts.

35 LXXXII. When the water in any of the canal reaches is lowered under its regular level, for the purpose of occasional repairs at any part of the line, steam vessels proceeding along the said reaches shall, in all such cases, slow their speed to such a degree as shall prevent injury to the slopes or banks thereof.

40 LXXXIII. Steam vessels employed in towing other vessels on the canal, shall not tow any such other vessel alongside or abreast of the steam vessels, or abreast of each other, but in all cases astern or in line; and no steam vessel or tracker shall, upon any pretence whatever, take any vessel in tow until the said vessel has been properly *45* arranged and made fast, so as to proceed in a steady and commodious manner along the canal.

LXXXV. No steam vessel shall exceed half speed in any of the reaches of the canal.

Locks.—There are 29 locks in the canal, 15 of which are situated *50* in the western half of the canal, as follows:

Corpac	h	.	One sea lock and two inner locks.
Banavie	h	.	Eight locks.
Gairlochy	h	.	Two locks.
Laggan	h	.	Two locks.

Chart 2635.

Chart 1791.

The remaining 14 locks are in the eastern half, and are situated as follows:—

Cullochy	One lock.	
Kytra	One lock.	5
Fort Augustus	Five locks.	
Dochgarroch	One lock.	
Muirtown	Four locks.	
Clachnaharry	One lock and one sea lock.	

The locks are 170 feet ($51^m 8$) long and 38 feet ($11^m 6$) broad at the top with battered sides. The gates and sluices are all worked by hand, and it takes about 14 minutes to pass a vessel through each lock. The canal is not open for night or Sunday traffic.

Communication.—There are post-offices at Corpach (*Lat. $56^{\circ} 51' N.$, Long. $5^{\circ} 07' W.$*), Gairlochy lock, Fort Augustus, Dochgarroch lock, 15 and Muirtown.

Pilots.—Pilotage is not compulsory, but it is advisable to employ a pilot in order that he can give information on matters concerning the canal, bends, bridges, etc.; his certificate of qualification and conduct from the Canal office should be seen. 20

Lights.—There are lights at Corpach, Gairlochy, Fort Augustus, Bona ferry, and Clachnaharry. For details, see Light List, Vol. I.

Beacons.—Buoys.—The navigable channel is marked by buoys, posts, beacons, and cairns. All navigational marks on the north-western side of the channel are painted red. Those on the south-eastern side of the channel are painted black. 25

Bridges.—The canal is crossed by eight swing road bridges and two swing railway bridges at various points. Vessels must blow their whistles when approaching the bridges at Banavie, Moy, Laggan, Aberchalder, Fort Augustus, Tomnahurich, Muirtown, and Clachnaharry, so as to warn the bridge keeper of their approach, and must reduce speed or stop until the bridge has been swung clear of the channel. As the channels between the piers of these bridges are narrow, care must be taken in passing through them.

The remainder of the bridges cross the canal at the various locks, 35 and are opened as necessary by the lock keepers.

Dangerous bends.—In the canal there are several dangerous bends, situated as follows:—

Three in the western reach between Banavie and Moy bridge.

One immediately northward of Moy bridge.

40

One at the north-eastern end of Laggan avenue.

One at the northern end of Fort Augustus reach.

One round the foot of Torvaine.

Bollards are placed at some points to enable vessels to warp round the bends, or by which to haul the vessel off should she take the ground on the bank.

Little damage is done by grounding, as the bottom is soft, and the banks are faced with stone for only a short distance below the usual water level.

Overhead cables.—An overhead high tension electric cable, carried on towers, crosses the canal at Torvaine at a minimum height of 125 feet ($38^m 1$) above the water level of the canal. Not less than 5 feet ($1^m 5$) clearance should be given by vessels navigating the canal.

Anchorages.—The following anchorages may be used by vessels

Chart 1791.

requiring shelter:—Close off the southern shore of Achtnacarry bay (*Lat. 56° 56' N., Long. 4° 59' W.*), which is situated on the north-western side of Loch Lochy, about $1\frac{1}{2}$ miles from its south-western end.

5 Just northward of the pier on the northern shore of Achtnacarry bay.

On the western side of the channel, off Port Macdonell pier, about $1\frac{1}{2}$ cables south-westward of Eilean Drynachan. Port Macdonell is situated on the north-western side of Loch Oich, about $1\frac{1}{2}$ miles from its north-eastern end, and Eilean Drynachan about $3\frac{1}{2}$ cables north-
10 eastward of Port Macdonell pier.

Close off Invermoriston pier, on the north-western side of Loch Ness, about $4\frac{1}{2}$ miles north-north-eastward of Fort Augustus lighthouse.

In Foyers bay, on the south-eastern side of Loch Ness, about 9 miles from its south-western end.

15 In Urquhart bay, close under and north-westward of Urquhart castle, on the southern side of the bay, about $8\frac{1}{2}$ miles north-eastward of Invermoriston pier, also close southward of Temple pier on the northern side of the bay.

In Dores bay, on the south-eastern side of Loch Ness, about $1\frac{1}{2}$ miles
20 from the north-eastern end of the loch.

Caution.—As the depths near the shore in Loch Lochy and Loch Ness do not decrease to a sufficient depth for anchoring until the shore is approached close to, the anchorages in these lochs must be used with caution, and vessels must sound when approaching them.

25 **Directions.**—*Corpach to Gairloch.*—The sea lock at Corpach may be entered for 4 hours on either side of high water during spring tides, and at most states of the tide during neaps, depending on the draught of the vessel. There are 22 feet (6^m7) over the sill at M.H.W.S. and 12 feet (3^m7) at M.L.W.S.

30 The sea-locks are worked at any hour when the tide serves, but the remaining locks are not worked at night nor on Sundays unless a special order is given.

At Corpach, when leaving, it is necessary to keep a spring on the jetty in order to swing into the channel. On the in-going tidal stream
35 there is a strong set southward into shoal water.

From Corpach a small basin leads to two locks, which lift a vessel into the canal proper, both banks of which are here built up. This reach, about three-quarters of a mile in length, leads to Banavie locks, eight in number, which are generally known as Neptune's staircase.

40 After leaving Banavie a vessel passes through the Western reach of the canal, which extends for $5\frac{1}{2}$ miles to Gairloch.

There are three dangerous bends in this reach, situated three-quarters, $1\frac{1}{4}$, and 3 miles, respectively, from Banavie (*Lat. 56° 51' N., Long. 5° 07' W.*) ; they are marked by "whistle" boards, and a vessel

45 must sound a prolonged blast on her whistle and reduce speed to "Dead slow" before entering them, and is not to increase speed until she has passed the "whistle" board at the other end of each bend.

Four miles from Banavie, Moy road bridge crosses the canal ; a vessel's whistle must be sounded on approaching it, in order that it
50 may be swung clear of the channel.

As the channel between the bridge piers is narrow, and there is a dangerous head immediately beyond the bridge, speed must be reduced to "Dead slow" until the vessel has passed the "whistle" board at the far end of this head.

Chart 2635.

Chart 1791.

One and a quarter miles from Moy bridge is Gairlochy, a small village close to the south-western end of Loch Lochy, where there are two locks separated by a small basin ; 400 yards (365^m8) south-westward of the lock, a small shoal extends into the canal from the north-western bank. A red buoy marks the south-eastern edge of it, and a vessel must pass south-eastward of it. 5

Gairlochy to Laggan locks.—From Gairlochy the canal takes a sharp bend northward round a point, on which there is a red post. A vessel must keep in the centre of the channel and pass into Loch Lochy 10 between Gairlochy light and the red buoy abreast it.

A west-going vessel must be careful not to mistake the entrance to Mucomir weir at the south-western end of Loch Lochy, 200 yards (182^m9) eastward of Gairlochy light, for the canal entrance ; there is a notice board on piles in the middle of the entrance to the weir 15 with the words "No passage" painted on it.

After passing Gairlochy light a vessel is in Loch Lochy, which is deep and free from dangers. A vessel may then proceed at full speed, passing close south-eastward of the red buoy off Coille Ras point, on the north-western side of the channel, 5 cables from the south-western end of the loch. From this buoy the vessel should steer 039°, which will lead up the centre of the loch to Ceann Loch bank, 7½ miles from Gairlochy light-tower. Off Invergloy point, on the south-eastern side of the loch, 3 miles from Gairlochy light-tower, a shoal spit extends, which a vessel must pass north-westward of. 25

At the north-eastern end of Loch Lochy the channel becomes narrow. A vessel must pass close north-westward of the two black posts, one at the southern and the other at the northern end of Ceann Loch bank, then between the black post, 400 yards (365^m8) north-eastward of the northern post on Ceann Loch bank, and the red cask buoy 120 yards (109^m7) southward of Kilfinnan point, then close to Kilfinnan point (*Lat. 57° 02' N., Long. 4° 49' W.*), on which is a red iron perch. When Kilfinnan point is abeam a vessel should steer to pass between Laggan pier, 2½ cables north-north-eastward of Kilfinnan point, and the black buoy abreast it, and straight for Laggan locks. A vessel should not attempt to pass eastward of the black buoy. 35

Laggan locks to Laggan swing-bridge and Loch Oich.—Laggan locks, two in number, are the last ascending locks in the canal. After leaving the locks the canal leads into Laggan avenue, 400 yards (365^m8) from Laggan locks. In this avenue the canal banks are 40 high, and a vessel must keep a good look-out while passing through it. At the northern end of the avenue there is a sharp bend northward, and on the south-eastern bank here, a "whistle" board.

Caution.—A vessel must proceed round this bend at "Dead slow" speed, blowing the whistle on approaching it, and again when rounding 45 it, as Laggan swing-bridge lies only a short distance beyond the bend. The channel through this bridge leads a vessel into Loch Oich.

Laggan swing-bridge and Loch Oich to Aberchalder bridge.—Loch Oich is narrow and dotted with islets. As the channel in parts of it is very narrow, and leads between islets and shoals, it must be 50 navigated with caution.

From Laggan swing-bridge (*Lat. 57° 02' N., Long. 4° 49' W.*) a vessel should steer for the black cairn at Ardrishaig, 4½ cables north-eastward, passing north-westward of the black post, 1½ cables north-

Chart 1791.

eastward of the bridge, and between Ardrishaig cairn and the two red buoys on the north-western side of the channel. Thence a vessel should steer for Creag Liath cairn, which is painted red and situated
5 8½ cables north-eastward of Ardrishaig cairn, passing close south-eastward of it. She should then pass between the black buoy, a quarter of a cable north-westward of the point on the south-eastern shore 9½ cables north-eastward of Ardrishaig cairn, and the red buoy abreast it, and between Rubha Ard Nan Uan cairn, 1½ cables north-
10 north-eastward of the point just mentioned, and the red buoy off it. A vessel should then steer to pass between Eilean na h-Ealaith, an islet one foot (0^m3) high with a few trees on it, situated about 1½ cables northward of Rubha Ard Nan Uan cairn, and the black buoy, half a cable east-north-eastward of it.
15 A vessel should then steer to pass between An t-Eilean Fada, the south-western end of which is situated about 1½ cables north-eastward of Eilean na h-Ealaith, and the red post and the red buoys marking the north-western side of the channel abreast it. An t-Eilean Fada is a narrow islet, one foot (0^m3) high, with tall trees on it; the north-
20 western side of this islet is built up, and its south-western and north-eastern extremities are each marked by a black post.

A vessel must reduce speed to "Dead slow" when passing the black posts on the extremities of An t-Eilean Fada. Care must also be taken, if River Garry, which flows into the loch, on its north-western side,
25 abreast the north-eastern end of An t-Eilean Fada, is in spate, to pass close south-eastward of the red buoy abreast Leitirfearn black cairn, which is situated about one cable north-north-eastward of the north-eastern end of An t-Eilean Fada, as the stream from this river strikes the vessel's bow and tends to swing her on to the cairn and the
30 shoal southward of it.

After passing between Leitirfearn cairn and the red buoy abreast it, a vessel should steer to pass between the red cairn on the south-eastern side of Eilean Drynachan, an islet, one foot (0^m3) high, with a few small trees on it, situated about 3½ cables north-north-eastward of
35 Leitirfearn cairn, and the black buoy south-eastward of it.

After passing Eilean Drynachan a vessel should steer to pass close westward of the black buoy half a cable south-south-westward of Aberchalder point (*Lat.* 57° 05' *N.*, *Long.* 4° 44' *W.*), and pass north-westward of that point and south-eastward of the two red posts on
40 the north-western side of the channel marking Oich weir, after passing which a vessel is again in the canal; Aberchalder point is on the south-eastern side of the loch, about 8½ cables north-north-eastward of Eilean Drynachan. The vessel must then blow her whistle in order to have Aberchalder bridge opened.

45 Aberchalder bridge to Fort Augustus.—From Aberchalder bridge the canal leads about 3½ cables to Cullochy lock, the first descending lock. After passing this lock the canal leads northward, and about 5 cables from Cullochy lock it takes a bend eastward into a reach called Coiltrey reach, which leads straight to Kytra lock. After 3½ cables south-
50 westward of Kytra lock the south-eastern bank of the canal opens out into a lagoon, on the canal edge of which is Cairn islet, a low narrow islet, almost awash, with trees on it; a cairn, which only just shows above water, is situated about a quarter of a cable north-eastward of the north-eastern extremity of this islet. In this part of the reach a vessel

Chart 2635.

Chart 1791.

should keep close to the north-western bank. After passing Kytra lock, $3\frac{1}{2}$ cables north-eastward of Cairn islet, the canal leads for about $3\frac{1}{2}$ cables to Kytra cairn, which must be passed by an east-going vessel on the starboard hand ; the channel now bends northward, and is nearly straight for about one mile ; this part is called Fort Augustus reach. 5

Eastward of Kytra cairn is the entrance to a backwater, which must not be mistaken for the canal by a west-going vessel, which in this vicinity must follow the trend of the north-western bank, passing 10 Kytra cairn on the port hand.

On the south-eastern bank, $3\frac{1}{2}$ cables north-eastward of Kytra cairn, is Coille Faileige, a small low wooded point.

At the northern end of Fort Augustus reach there is a dangerous bend. "Whistle" boards are placed on the north-western bank in 15 the approach to it, and the vessel must sound her whistle and reduce speed to "Dead slow" when near the board.

A short distance round the bend are the five locks and a bridge at Fort Augustus. Should a vessel have to wait before she is passed into the locks she should secure to the wharves near the lock entrance, 20 keeping clear of the lock gates. The greatest depths are alongside the wharf on the north-western bank.

Loch Ness.—Fort Augustus to Bona.—The five locks at Fort Augustus (*Lat. $57^{\circ} 08' N.$, Long. $4^{\circ} 40' W.$*) should be passed in about 50 minutes. Outside the lower lock gate the canal is crossed by a swing- 25 bridge, which must be opened before a vessel can enter or leave this lock. A vessel should steer in mid-channel for about 2 cables, and pass into Loch Ness between Inverloch point, on which is a red post, and Lighthouse point, on which is a white circular lighthouse with a pointed roof. Loch Ness is deep and free from dangers. 30

A vessel can now steer 042° at full speed, passing about $2\frac{1}{2}$ cables south-eastward of Gobhar Sgiathach, a point on the north-western side of the loch, about 3 miles north-eastward of Inverloch point. When Gobhar Sgiathach is abeam she should steer 036° , and pass in about mid-channel north-westward of Foyers, which is situated on the south- 35 eastern shore of the bay, about 9 miles north-eastward of Fort Augustus light, and when Foyers is abeam she should steer for Bona Ferry lighthouse, a white building on the low shore at the north-eastern end of the loch, showing a *white fixed light*, bearing 032° .

Off Aldourie castle, on the south-eastern side of the channel, $2\frac{3}{4}$ cables 40 southward of Bona lighthouse, is a black buoy : the vessel must pass close north-westward of this buoy, and then steer to pass between the red buoy and the black buoy, south-westward of and close to Bona Ferry lighthouse, and when near them she must reduce speed to "Dead slow", and blow one *long blast* on her whistle. When these two buoys 45 are abeam, the vessel must steer for the black post off Bona ferry.

Caution.—An east-going vessel must wait in Loch Ness southward of the two buoys south-westward of Bona Ferry lighthouse if other vessels are seen or heard approaching Bona from the eastward, and must not proceed farther until they have cleared these two buoys. 50

Bona to Dochgarroch Loch.—Darroch islands, situated about 3 cables north-north-eastward of Bona Ferry lighthouse (*Lat. $57^{\circ} 24' N.$, Long. $4^{\circ} 29' W.$*), lie close to the western edge of the shoal bank which fronts the eastern shore between Loch Ness and River Ness.

Chart 2635.

Chart 1791.

Two black buoys, marking the western edge of the shoal water, are moored about half a cable and one cable south-south-westward of the Darroch islands.

5 When the northern of the two black buoys is abeam the vessel can increase speed and steer to pass close to Dochfour pier, which is situated on the western shore of Loch Dochfour, about 5 cables northward of Bona.

When Dochfour pier is abeam a vessel should steer to pass close to 10 Dochfour Lodge pier, which is situated on the north-western shore of the loch, about $3\frac{3}{4}$ cables north-north-eastward of Dochfour pier, passing south-eastward of the three red cask buoys on the north-western side of the channel, and north-westward of the black cask buoy close north-westward of the south-western entrance point of 15 Cambuslochy bay, which is situated on the south-eastern side of the loch, about $2\frac{3}{4}$ cables north-north-westward of Darroch islands.

A vessel after passing Dochfour Lodge pier should keep towards the north-western bank, so as to avoid being drawn into the Ness weir, situated on the south-eastern bank, over which the surplus water from 20 Loch Ness flows into the River Ness, and pass north-westward of the black post, situated abreast the ferry at the south-western end of the weir, $2\frac{1}{2}$ cables east-north-eastward of Dochfour Lodge pier.

When the weir is passed a vessel should steer in mid-channel, between the canal banks to Dochgarroch locks.

25 *Caution.*—If a west-going vessel sees or hears an east-going vessel coming through the channel from Bona Ferry lighthouse to Darroch islands, she must wait near Dochfour pier until that vessel is northward of the northern black buoy just southward of the Darroch islands, and when the west-going vessel proceeds she must blow her whistle and 30 reduce speed until she enters Loch Ness between the two buoys south-westward of Bona Ferry lighthouse, when she may proceed at full speed.

Dochgarroch lock to Clachnaharry.—From Dochgarroch lock (*Lat. 57° 26' N., Long. 4° 19' W.*) the canal leads with several bends for 35 $2\frac{1}{2}$ miles to Torvaine, where the canal is shallowest, and round the eastern end of which is a dangerous bend.

A "Whistle" board is placed at each end of this bend, and the instructions on them must be rigidly carried out.

Immediately after passing this bend the whistle must be blown to 40 have the swing road bridge at Tomnahurich opened, having passed which the canal leads for one mile to Muirtown, where there are four connected locks. In the approach to these locks there are wharves on both banks of the canal, to which a vessel may secure.

The Muirtown locks, just below which the canal is crossed by a 45 swing-bridge, lead into Muirtown basin, at the southern end of which are wharves where vessels may load and discharge.

Should a vessel be proceeding to sea she must pass through this basin, keeping south-westward of the small black mooring buoys which lie off the north-eastern bank, to Clachnaharry lock, situated 50 at the north-western end of the basin.

After passing this lock and the swing railway bridge north-westward of it, a vessel proceeds through a small basin to the sea lock, from which she is passed into Beauly basin at the south-western end of Inverness firth.

Chart 2635.

Chart 1791.

The depth over the sill of the sea lock is 24 feet ($7^m 3$) at M.H.W.S. and 12 feet ($3^m 7$) at M.L.W.S.

There is a least depth of 7 feet ($2^m 1$) alongside the jetties at Clachnaharry.

A vessel entering or leaving the canal by the sea lock at Clachnaharry can usually do so for 4 hours on either side of high water during spring tides, and at nearly all states of the tide during neaps, depending on the draught of the vessel. The current runs very strongly across the entrance to the lock at Clachnaharry (*Lat. 57° 29' N., Long. 4° 16' W.*). 10

Chart 2635.

CHAPTER V

TIREE AND COLL ; WESTERN COAST OF MULL ; SOUND OF
MULL ; LOCH SUNART

Charts 2515, 3674.

TIREE AND COLL.—The islands of Tiree and Coll lie north-westward of the Island of Mull and are separated from it by Passage of Tiree, a channel $5\frac{1}{2}$ miles wide at its narrowest part ; there are numerous rocks and islets adjacent to the islands.

These two islands, which are separated from each other by Gunna sound, an intricate channel about 7 cables wide, shelter the western coast of Mull during north-westerly or northerly gales. The 20-fathom (36^m6) plateau on which they stand includes Skerryvore (*Lat. $56^{\circ} 19' N.$, Long. $7^{\circ} 07' W.$*) and other rocks, and extends about 38 miles.

It is advisable for vessels without local knowledge to give a wide berth to both islands.

Local magnetic anomaly.—A local magnetic anomaly is reported to increase considerably the normal magnetic variation in the Passage of Tiree. Owing to the geological structure of the region anomalous magnetic conditions are likely to exist in the whole area.

Submarine cables.—**Beacons.**—Submarine cables, the directions of which are indicated on charts 3608 and 3674, are laid across Gunna sound and between Coll and Mull. See page 7. Beacons mark the landing places on Tiree and Coll.

Communications.—The islands are in telegraphic communication with each other, and with the mainland through the Island of Mull.

A vessel from Oban calls regularly at each of the islands.

There is a regular air mail service to Tiree.

Light.—Fog signal.—A light is exhibited, at an elevation of 150 feet (45^m7), from a grey granite tower, 158 feet (48^m1) in height, situated on Skerryvore, about 9 miles south-south-westward of the south-western extremity of Tiree. See view facing page 286.

A fog signal is sounded from this lighthouse.

Outlying dangers and banks.—Skerryvore is one of a group of above-water and sunken rocks ; Mackenzie's rock, the southernmost rock of this group, lying about $2\frac{1}{2}$ miles south-westward of Skerryvore lighthouse, dries 4 feet (1^m2). Freshnel rock, about 4 cables north-north-westward of Mackenzie's rock, has a least depth of 4 fathoms (7^m3) over it, and there is a shoal, with a depth of 5 fathoms (9^m1) over it, 5 cables north-eastward of Mackenzie's rock. A shoal, with a depth of 6 fathoms (11^m0) over it, lies about $2\frac{1}{2}$ miles west-south-westward of Skerryvore lighthouse. Stevenson's rock, with a depth of less than 6 feet (1^m8) over it, lies about 2 miles west-south-westward

Charts 2508, 2635.

Charts 2515, 3674.

of the lighthouse. Two shoals, with depths of 7 fathoms (12^m8) and $6\frac{1}{2}$ fathoms (11^m9) over them, lie about $3\frac{1}{2}$ and $8\frac{1}{2}$ miles, respectively, westward of the lighthouse. Two shoals, with depths of $2\frac{3}{4}$ fathoms (5^m0) and 5 fathoms (9^m1) over them, lie about 8 cables south-westward and $5\frac{1}{2}$ cables south-south-westward, respectively, of the lighthouse. 5

Pellys rock is the foul ground extending about 4 cables south-south-eastward and south-westward from Skerryvore lighthouse.

For about 6 miles westward of Skerryvore lighthouse the depths are very uneven; uncharted shoals, other than those mentioned above, may exist in this locality. 10

Foul ground extends about $1\frac{1}{4}$ miles north-eastward from Skerryvore lighthouse; Bo Ruadh, at the north-eastern end of this foul area, is an above-water and sunken reef. 15

Boinshly rock, about $3\frac{1}{2}$ miles north-eastward of Skerryvore light-house, is almost awash, and is usually marked by heavy breakers; a shoal, with a depth of 5 fathoms (9^m1) over it, and a shoal, with a depth of $3\frac{1}{2}$ fathoms (6^m4) over it, lie about 6 cables and one mile, respectively, east-south-eastward of Boinshly rock. A shoal, with a depth of $1\frac{1}{2}$ fathoms (2^m7) over it, the position of which is doubtful, and a shoal, with a depth of $4\frac{1}{2}$ fathoms (8^m7) over it, lie about 6 cables east-north-eastward and about 4 cables north-eastward, respectively, of the same rock. 20

Two shoals, with depths of 6 fathoms (11^m0) over them, are situated about 3 and $5\frac{1}{2}$ miles, respectively, northward of Skerryvore lighthouse. 25

There is deep water both southward and northward of Boinshly rock, but vessels should not use either channel, as this locality is never free from a long heavy swell, which breaks even with a moderate breeze; in north-westerly gales the whole area between Skerryvore (*Lat. $56^{\circ} 19' N.$, Long. $7^{\circ} 07' W.$*) and Tiree is a mass of breakers, making it impossible to identify the positions of the rocks; this locality should therefore be avoided. 30

Two banks, with depths of 11 and 12 fathoms (20^m1 and 21^m9) over them, lie about 15 and 14 miles, respectively, southward of Skerryvore lighthouse. A bank, with a depth of 16 fathoms (29^m3) over it, was reported, in 1952, to lie about 13 miles south-south-westward of the lighthouse. 35

Chart 2508.

Stanton banks lie between lat. $56^{\circ} 04'$ and $56^{\circ} 20' N.$, and long. $7^{\circ} 43'$ and $8^{\circ} 02' W.$, within the 50-fathom (91^m4) line; the least depth yet found on these banks is 16 fathoms (29^m3), which is situated about 25 miles westward of Skerryvore lighthouse. 40

The area for about 35 miles westward of these banks has not been examined.

Chart 2507.

Hawes bank, the south-western end of which is situated about 11 miles westward of the northern extremity of Coll, extends about $7\frac{1}{2}$ miles north-eastward, and has a least depth of 11 fathoms (20^m1) over it; the sea breaks heavily over it in stormy weather. The bottom is mostly rocky. Though carefully examined there may, from the nature of the soundings, be less depths in places than have been discovered. 45

A bank, with a depth of 23 fathoms (42^m1) over it, was reported in 1948 to lie about $5\frac{1}{2}$ miles westward of the northern extremity of Coll.

Charts 2515, 3674.

Tidal streams.—Round Skerryvore and the rocks in its vicinity, and between Skerryvore and Tiree the streams appear to run about northward and southward ; the north-going stream begins —0610 Oban (+0045 Dover) and the south-going stream begins +0015 Oban (—0515 Dover) ; round and between Skerryvore and the rocks the spring rate is from 4 to 5 knots in both directions ; the streams are also strong between Skerryvore and Tiree, but outside the 20-fathom line the spring rate decreases to from 2 to 2·5 knots. Overfalls occur on all the submerged rocks, and, in heavy weather when the wind is blowing against the stream, there is violent turbulence over the whole area between Mackenzie's rock and Boinsly rock, and even north-eastward between the latter rock and Tiree.

Little is known regarding the streams which run off the south-eastern coasts of Tiree and Coll, but off Loch Eatharna, about 5 miles south-south-westward of the north-eastern extremity of Coll, the north-east-going stream begins —0425 Oban (+0230 Dover) and the south-west-going stream begins +0200 Oban (—0330 Dover) ; the spring rate in each direction is about 1·5 knots. Between the south-western extremity of Tiree, where the streams probably begin about as near Skerryvore, and Loch Eatharna the streams run north-eastward and south-westward along the coast, and begin at times which change gradually along the coast ; the streams are probably fairly strong off the salient points, but weak in the bays between them. North-eastward of Loch Eatharna the streams appear to begin rather earlier than off the loch and run strongly between and off the islands extending north-eastward from the north-eastern extremity of Coll (*Lat. 56° 41' N., Long. 6° 27' W.*).

North-west of Skerryvore the north-going stream begins +0500 Stornoway (+0045 Dover) and the south-going stream begins —0100 Stornoway (—0515 Dover) ; the spring rate in each direction near the rocks is from 4 to 5 knots. There are heavy and dangerous overfalls on the banks between $3\frac{1}{2}$ and $7\frac{1}{2}$ miles westward of Rubha Chraiginis.

After passing westward of Tiree the north-going stream spreads out and runs in all directions between north, towards Neist point (page 374), and north-eastward, along the coasts of Tiree and Coll ; the streams from the opposite directions meet and run southward past the western side of Tiree.

There is little information available regarding the streams off the north-western coasts of Tiree and Coll ; they are probably fairly strong off the salient points, with rates of from one to 1·5 knots at springs, but weak in the bays. The times at which the streams begin become gradually later from south-west to north-east ; about 5 miles north-westward of the entrance to Gunna sound the north-east-going stream begins +0515 Stornoway (+0100 Dover), and the south-west-going stream begins —0045 Stornoway (—0500 Dover) ; off the north-eastern point of Coll, where the streams run strongly between the islands, the north-east-going stream probably begins about +0600 Stornoway (+0145 Dover), and the south-west-going stream about H.W. Stornoway (—0415 Dover).

Round Hawes bank the streams run about north-north-eastward and south-south-westward ; the north-north-east-going stream begins +0545 Stornoway (+0130 Dover), the south-south-west-going stream begins —0015 Stornoway (—0430 Dover). The streams

Charts 2515, 3674.

appear not to be of any great strength, but the sea breaks heavily on the bank in bad weather, especially with the wind blowing against the stream.

Tiree.—Tiree is low, and has near its centre a plain called The ⁵ Reef ; the island attains an elevation of 454 feet (138^m4) at its southern end, in Carnan Mör, the northern peak of Beinn Hynish.

The south-eastern coast is indented by Hynish and Gott bays.

Although running water is scarce, there are several lakes ; Loch a Phuill, the largest, lies near the south-western end of the island. ¹⁰

Climatic table.—See page 37.

Dangers and banks.—**Light-buoys.**—The southern promontory of Tiree is foul for about 7½ cables offshore ; Ringdove rock, the north-easternmost of these dangers, about 1½ miles east-south-eastward of Beinn Hynish, has a least depth of 2 fathoms (3^m7) over it. Kirkaho, a ¹⁵ rock, about 1½ miles south-south-eastward of Beinn Hynish, dries one foot (0^m3). Bo Deohedal, the southernmost of these dangers, about 1½ miles southward of Beinn Hynish, consists of three sunken rocks, with a least depth of 3 feet (0^m9) over it.

A bank, with a depth of 11 fathoms (20^m1) over it, lies about 3 miles ²⁰ south-eastward of Beinn Hynish.

There are some shoals in the entrance to Balephuil bay ; Smithy rock, the southernmost of these, situated about one mile south-south-eastward of Eilean na Bo Mör, the south-western extremity of Tiree, has a depth of 5 fathoms (9^m1) over it. ²⁵

Inner Hurricane rock, about 6 cables westward of Eilean na Bo Mör, has a depth of 3½ fathoms (6^m9) over it ; another rock, with a similar depth, lies about one mile westward of Eilean na Bo Mör (*Lat.* 56° 27' N., *Long.* 6° 59' W.).

Outer Hurricane rock, about 2½ miles westward of Eilean na Bo ³⁰ Mör, has a depth of 7 fathoms (12^m8) over it, and the sea breaks heavily over it during stormy weather. A shoal, with a depth of 4½ fathoms (8^m7) over it, lies 3½ miles westward of Rubha Chraiginis, the western extremity of Tiree.

Banks, with depths of from 9 to 13 fathoms (16^m5 to 23^m8) over them, lie from about 3½ to 7½ miles westward of Rubha Chraiginis, and the sea breaks over them with moderate breezes.

A bank, with depths of less than 5 fathoms (9^m1) over it, extends about 1½ miles south-westward from Rubha Chraiginis. Bo Mör, with a depth of 5 feet (1^m5) over it, lies on this bank about one mile westward ⁴⁰ of the same point. Duhh sgeir, which dries 13 feet (4^m0), lies about 2 miles north-westward of Rubha Chraiginis. Hough skerries, the western end of which lies about 1½ miles north-westward of Rubha Chraiginis, is an above-water and sunken reef, extending westward from the north-western side of Tiree. ⁴⁵

Between Hough skerries and the northern extremity of Tiree there are many dangers off-lying the coast, extending in places one mile offshore.

No vessel should attempt to pass between the rocks, described above, and the coast of Tiree. A vessel without local knowledge should give ⁵⁰ the coast a wide berth.

Chart 3608, plan of Gunna sound.

Gunna sound and approaches.—**Dangers.**—**Light-buoys.**—Gunna, an island 116 feet (35^m4) high, with its western end about

Chart 3608, plan of Gunna sound.

three-quarters of a mile east-north-eastward of the northern extremity of Tiree, lies in the north-western entrance to Gunna sound, and is separated from the western end of Coll by a foul and shallow passage 5 about 3 cables wide at its narrowest part; the northern and southern shores of the island are foul, but its western end appears to be clear of dangers beyond a distance of 2 cables.

Creachasdal Mòr, 27 feet ($8^{\text{m}}2$) high, with Creachasdal Beag, close northward of it, are two islets lying on a rocky ledge about three-quarters of a mile south-eastward of Rubha Duhh, the north-eastern extremity of Tiree; foul ground extends about $3\frac{1}{2}$ cables south-south-eastward and a rocky ledge, with a depth of 20 feet ($6^{\text{m}}1$) over it, lies $3\frac{1}{2}$ cables south-south-westward of the southern end of Creachasdal Mòr.

Bogha Hoishmish, a rock which dries 7 feet ($2^{\text{m}}1$), lies about 2 cables east-north-eastward of Rubha Dubh near the outer end of a spit; from it a bank, with depths of less than 3 fathoms over it, extends about $2\frac{1}{2}$ cables south-south-eastward and half a cable northward. A shoal, with a depth of 9 feet ($2^{\text{m}}7$) over it, lies about 3 cables eastward of Bogha Hoishmish.

Between Rubha Dubh and the northern extremity of Tiree, about $1\frac{1}{4}$ miles north-westward, there is a bight in the coast, mostly fringed with rocks; in the middle of the bight foul ground, with an islet on it, extends about $4\frac{1}{2}$ cables offshore; a shoal, with a depth of 17 feet ($5^{\text{m}}2$) over it, and a shoal, with a depth of 13 feet ($4^{\text{m}}0$) over it, lie about $3\frac{1}{2}$ cables northward and 4 cables north-north-westward, respectively, of Rubha Dubh (*Lat. $56^{\circ} 33' N.$, Long. $6^{\circ} 44' W.$*). A patch, which dries 5 feet ($1^{\text{m}}5$), lies about $1\frac{1}{2}$ cables eastward of the northern extremity of Tiree; foul ground extends about $1\frac{1}{2}$ cables northward from the same point, and a patch, with a depth of 9 feet ($2^{\text{m}}7$) over it, lies about half a cable farther northward.

Placaid Bogha, a bank, with depths of one foot ($0^{\text{m}}3$) over it, lies on the north-eastern side of the fairway through Gunna sound and about 3 cables southward of the south-western extremity of Gunna; a conical light-buoy, painted black and exhibiting a *white flashing light every four seconds*, is moored about half a cable south-south-westward of Placaid Bogha.

The fairway through Gunna sound is reduced to about $2\frac{1}{2}$ cables in width between Placaid Bogha and the foul ground described above.

Roan Bogha, about 2 miles eastward of Rubha Dubh, is awash, 40 and is marked on its southern side by a spherical light-buoy, painted in red and white horizontal bands and exhibiting a *white group flashing light showing three flashes every twelve seconds*. During strong winds and especially with an opposing tidal stream the sea occasionally breaks heavily on this rock, and great caution is necessary in its vicinity.

Two shoals, with depths of 20 feet ($6^{\text{m}}1$) and 29 feet ($8^{\text{m}}8$) over them, lie about $2\frac{1}{2}$ and $6\frac{1}{4}$ cables, respectively, northward of Roan Bogha.

Foul ground extends about $5\frac{1}{2}$ cables southward from the southern extremity of Coll; at the outer end of this foul ground is Sgeir nan Garbhanach, which dries 10 feet ($3^{\text{m}}0$). Foul ground also extends 50 about 8 cables southward from the point situated about $1\frac{1}{4}$ miles north-eastward of the southern extremity of Coll. Between these points is Crossapol bay, which is encumbered in the bay and its approaches by numerous shoals, and should be avoided by vessels without local knowledge.

Chart 3608, plan of Gunna sound.

Tidal streams.—In Gunna sound the stream which runs north-east in the approaches, turns north-westward and begins at +0420 Stornoway (+0005 Dover). The stream which runs south-westward in the approaches, turns south-eastward through the sound and begins 5 at -0230 Stornoway (+0540 Dover).

The stream attains a rate of $2\frac{1}{2}$ knots at springs.

Directions.—A vessel passing through the sound from eastward should steer about 330° , passing about 5 cables south-westward of Roan Bogah ; when Creachasdal Mòr (*Lat. $56^{\circ} 32' N.$, Long. $6^{\circ} 43' W.$*) 10 bears 217° she should steer about 285° and pass about one cable southward of the light-buoy marking Placaïd Bogha, and thence steer about 325° through the middle of the sound until outside the 10-fathom (18^m3) line. Care should be taken to avoid the shoal with a depth of 9 feet (2^m7) over it, situated 3 cables eastward of Bogha Hoishlismish, 15 and the rock lying $1\frac{1}{2}$ cables north-eastward of Eilean Chreasamuill, situated about 5 cables north-westward of Rubha Dubh.

Charts 3674, 2515.

South-eastern side of Tiree.—Dangers.—Light.—The south-eastern coast of Tiree is very foul, dangers extending in places as much 20 as half a mile offshore.

Am Barradhu lies about 9 cables north-eastward of the southern extremity of Tiree, and is the south-western entrance point of Hynish bay. A' Chlèit, a rock, 39 feet (11^m9) high, lies on a reef which extends 6 cables southward from the north-eastern entrance point of Hynish 25 bay, about $3\frac{1}{2}$ miles north-eastward of Am Barradhu. Sgeir Fhada, about 3 cables eastward of A' Chlèit and about 4 cables offshore, dries 6 feet (1^m8), and is steep-to.

Scarinish bank, with a depth of 13 fathoms (23^m8), rock, over it, lies about $2\frac{1}{2}$ miles eastward of the north-eastern entrance point of 30 Hynish bay. South bank, with a depth of 15 fathoms (27^m4), rock, over it, lies about 3 miles south-eastward of the same point.

A light is exhibited, at an elevation of 44 feet (13^m4), from a white tower, 22 feet (6^m7) in height, situated on the south-western side of the entrance to Scarinish harbour, about $4\frac{1}{2}$ miles north-eastward of 35 Am Barradhu.

At the southern end of Tiree, on the western side of Hynish bay, is the disused establishment formerly connected with Skerryvore lighthouse, with a stone pier and dock for the use of the lighthouse tender. Communication by signal is possible by day with Skerryvore 40 lighthouse from a round stone tower situated at the disused establishment.

On the south-east coast is Scarinish (*Lat. $56^{\circ} 30' N.$, Long. $6^{\circ} 48' W.$*), a small creek with a very narrow entrance; within, on the eastern side, is a quay, which dries. Coasters of about 8 feet (2^m4) draught can 45 be aground here alongside the pier, but they are frequently detained by the heavy swell setting in through the opening.

Small quantities of provisions can be obtained at Scarinish.

Gott bay affords moderately good anchorage for small vessels with local knowledge, in a depth of $2\frac{3}{4}$ fathoms (5^m0), sand, on its south-western side.

There are several dangers on both sides of the entrance, and in the fairway of the bay. The manse is a three-storeyed house with a small building on its eastern side, on which is a prominent tall chimney.

Charts 2508, 2635.

Charts 2515, 3674.

The concrete pier, which is situated just within the south-western entrance point (*Lat. 56° 31' N., Long. 6° 48' W.*), has a depth of 11 feet (3^m4) alongside ; there is a landing slip on the inner side of the pier. Foul ground extends about 6 cables south-eastward from the pier, and vessels approaching it should give a wide berth to the south-western entrance point of the bay.

Water is laid on to the pier.

The northern and western coasts of Tiree afford no shelter, except for small local fishing vessels.

Chart 3608, plan of Gunna sound, 3674.

A small indentation on the north-eastern coast of the island in Gunna sound affords temporary anchorage, locally known as Clach Chuirr, to small craft with local knowledge in fine weather.

Coastguard.—Life-saving.—An auxiliary watch is kept on Tiree ; (see page 10). A line-throwing apparatus is maintained ; see page 9.

Coll.—Coll presents a bleak and sterile appearance from seaward ; Beinn Hogh, its highest hill, 5½ miles north-eastward of the south-western end of the island, has an elevation of 333 feet (101^m5). A great portion of the island is barren moor.

The north-western side of the island is exposed, and on the south-eastern side shelter can only be obtained in Loch Eatharna (see below), where there is a very limited space for small vessels of 5 feet (1^m5) draught with local knowledge.

Chart 2507.

Islets and dangers north-eastward of Coll.—*Light.*—From the north-eastern end of Coll a group of islets and rocks extends about 1½ miles north-eastward ; the Cairns of Coll, the north-easternmost of these dangers, are two rocks, which dry about 12 feet (3^m7), and are nearly always visible, or marked by breakers. Bogha Mòr, about 5 cables north-north-westward of the north-eastern extremity of Coll, dries 5 feet (1^m5), and is almost always marked by breakers. Sùil Ghorm lies about one mile north-eastward of the north-eastern extremity of Coll. All these rocks should be given a wide berth.

Cairns of Coll light is exhibited, at an elevation of 74 feet (22^m6), from a white octagonal tower, 25 feet (7^m6) in height, situated on Sùil Ghorm (*Lat. 56° 42' N., Long. 6° 27' W.*).

The channel between Sùil Ghorm and the Cairns of Coll is deep and free from dangers, but requires local knowledge on account of the tidal streams. The other channels through this group can only be used by boats or very small vessels with local knowledge.

Off-lying bank.—A bank, which is described on page 477, lies about 5 miles north-eastward of the Cairns of Coll.

Charts 2515, 3674.

Loch Breacacha.—Loch Breacacha is entered about 2½ miles east-north-eastward of the south-western extremity of Coll ; it should not be approached without local knowledge, as there are many rocks on both sides of the entrance, and on both sides of the loch.

There is a castle, a dark stone building, at the head of the loch.

Loch Eatharna.—*Anchorage.*—*Life-saving.*—Loch Eatharna is entered about 4 miles east-north-eastward of the eastern entrance point of Loch Breacacha ; the head of the loch dries out about three-quarters of a mile.

Charts 2515, 3674.

Loch Eatharna is divided into two parts by Eilean Eatharna, 44 feet (13^m4) high, which lies near its entrance. The western and wider part of the loch is the channel most used by vessels communicating with Arinagour, but as it is open southward, except for the partial shelter afforded by the rocks in the entrance, this part of the loch is only suitable for temporary anchorage even in summer. About 3 cables within the entrance, on the eastern side of the loch, is a sheltered space, about one cable in extent, where anchorage can be obtained, southward of a shoal, with a depth of 9 feet (2^m7) over it, by vessels with a draught of 5 feet (1^m5); it should not be attempted by a vessel without local knowledge.

A line-throwing apparatus is maintained at Arinagour, a village on the western side of Loch Eartharna. See page 9.

There is a stone slip and pier off Arinagour village; the latter has a depth of 9 feet (2^m7) alongside it at high water springs.

Arinagour consists of a small group of houses, and a white two-storeyed inn. Small quantities of provisions can be obtained here.

Islets and dangers.—**Light-buoy.**—Eilean Ornsay, 57 feet (17^m4) high, is situated close southward of the western entrance point of Loch Eatharna; foul ground extends a short distance south-eastward from its south-eastern end.

Bogha Mòr, lying in the entrance to the loch, about 3½ cables eastward of the western entrance point, dries 6 feet (1^m8), and is marked on its southern side by a conical light-buoy, painted black and exhibiting a *white flashing light every six seconds*.

Eilean Dubh is a bare rocky islet, close south-eastward of the south-eastern end of Eilean Eatharna; there are several rocks extending about one cable southward from Eilean Eatharna.

Sgeir Dubh, in the fairway of the western part of the loch, about 5 cables within Bogha Mòr, dries 8 feet (2^m4).

Northward of the northern end of Eilean Eatharna (*Lat. 56° 37' N., Long. 6° 31' W.*) are several rocks which dry.

The bold headland, Meall Eatharna, 143 feet (43^m6) high, on the eastern side of the entrance to Loch Eatharna, is steep-to, and may be closed in safety even in a rough sea.

This loch should only be navigated by vessels with local knowledge.

Tidal streams.—At a position in 56° 21·5' N. 6° 43' W., the north-east-going stream, spring rate 0·7 knot, is nearly rectilinear with directions between about 030° and 035°, and begins —0445 Oban (+0210 Dover); the south-west-going stream, spring rate 0·7 knot, is more or less rotatory with directions changing gradually from about 195° to 230°, and begins +0130 Oban (—0400 Dover).

At a position, 5 miles 219° from Ardnamurchan lighthouse, the stream is more or less rotatory clockwise; it is weakest, spring rate 0·2 knot in a direction about 270°, —0500 Oban (+0155 Dover); strongest, spring rate 1·1 knots in a direction 021°, —0200 Oban (+0455 Dover); weakest, spring rate 0·3 knot in a direction about 145°, +0130 Oban (—0400 Dover), and strongest, spring rate one knot, in a direction 203°, +0430 Oban (—0100 Dover).

Near the sides of Passage of Tiree the times at which the streams begin differ appreciably from those in mid-channel. The streams are said to run strongly, across the banks which extend, from close east-

Charts 2515, 3674.

ward of the position $56^{\circ} 21' N.$ $6^{\circ} 43' W.$, for from 4 to 5 miles eastward and south-eastward and to cause dangerous overfalls.

WESTERN COAST OF MULL.—The western coast of Mull is deeply indented. Sound of Iona, Iona, and the dangers in its vicinity, are described on pages 192-194.

Chart 2652.

Off-lying islands, islets, and dangers.—Treshnish isles, the southern end of which group is situated about $6\frac{1}{2}$ miles north-westward of the northern extremity of Iona, are a group of islands, islets, and rocks, extending about $5\frac{1}{2}$ miles north-eastward. The islands are covered with grass.

Bac Beag (*Lat. $56^{\circ} 27' N.$, Long. $6^{\circ} 29' W.$*) and Bac Mòr, known also as Dutchnian's Cap, at the south-western end of this group, are connected by broken rocky ground. They are easily identified by a steep hill rising suddenly from the comparatively low ground of these islands to an elevation of 278 feet (84^m7) at 3 $\frac{1}{2}$ cables from the north-eastern end of Bac Mòr. A bank, with depths of less than 10 fathoms (18^m3) over it, extends about 1 $\frac{1}{2}$ cables from the eastern side of Bac Beag, and about 2 cables from the eastern side of Bac Mòr. Sgeir Blar nan Each, about 2 $\frac{1}{2}$ cables southward of the 278-foot (84^m7) hill and about one cable offshore, dries 3 feet (0^m9). Foul ground extends about 1 $\frac{1}{2}$ cables north-eastward from the north-eastern end of Bac Mòr, and a shoal bank extends about half a cable farther in the same direction.

A shoal, with a depth of 5 fathoms (9^m1) over it, lies about 5 $\frac{1}{2}$ cables westward of the 278-foot (84^m7) hill and about 3 $\frac{1}{4}$ cables offshore.

Lunga, the south-western extremity of which is situated about 1 $\frac{1}{2}$ miles north-eastward of the north-eastern extremity of Bac Mòr, rises in terraces to an elevation of 331 feet (100^m9). A rocky shoal, with a depth of one fathom (1^m8) over it, lies about 2 $\frac{1}{4}$ cables, and a rock, with a depth of less than 6 feet (1^m8) over it, lies about 1 $\frac{1}{2}$ cables south-westward of the south-western extremity of Lunga. Sgeir a' Chaisteil, about 1 $\frac{1}{2}$ cables northward of the northern extremity of Lunga, is connected with Lunga by a reef that dries.

There is a deep channel between Lunga and Bac Mòr (*Lat. $56^{\circ} 28' N.$, Long. $6^{\circ} 28' W.$*), which is free from dangers in the fairway.

Between Lunga and Sgeir a' Chaisteil, on the south-west, and Fladda, the south-western extremity of which is situated 7 $\frac{1}{2}$ cables east-north-eastward of the north-eastern extremity of Sgeir a' Chaisteil, on the north-east, there are numerous above-water and sunken rocks. Sgeirean Mòr lie at the southern end of this foul area, about 3 cables from the eastern side of Lunga, and a shoal, with a depth of 1 $\frac{1}{2}$ fathoms (2^m7) over it, lies about three-quarters of a cable east-south-eastward of the southern extremity of Sgeirean Mòr.

Cairn na Burgh Mòr and Cairn na Burgh Beag lie at the north-eastern end of the Treshnish group; they are precipitous and almost inaccessible rocks. On the summit of Cairn na Burgh Mòr, which is 107 feet (32^m6) high, are the ruins of a chapel and a fort, and on Cairn na Burgh Beag those of a fort. Sgeirean Mhic Phionnlaidh, a group of rocks, about 1 $\frac{1}{4}$ cables westward of the north-western extremity of Cairn na Burgh Mòr, dry.

Chaolais Leac a Bhainne, separating Fladda from Cairn na Burgh

Chart 2652.

Mòr, is about $3\frac{1}{2}$ cables wide ; the south-western side of this channel is free from dangers.

Between Cairn na Burgh Beag and Rubh' a Chaoil, $1\frac{3}{4}$ miles east-north-eastward, there is a deep channel, free from dangers, leading 5 into Loch Tuath.

Staffa, about $4\frac{3}{4}$ miles east-south-eastward of the southern end of Bac Beag, is an island, having the aspect of an uneven tableland. The coasts of the island, being of columnar formation, are precipitous, the greatest elevation, 129 feet (39^m3), being imminently over Fingal's 10 cave, at the southern end. See view on chart 2652.

A shoal, with a depth of $1\frac{1}{2}$ fathoms (2^m3) over it, and a shoal, with a depth of $2\frac{1}{2}$ fathoms (4^m1) over it, lie about three-quarters of a cable southward and about $1\frac{1}{2}$ cables south-eastward, respectively, of the southern extremity of Staffa. The eastern side of Staffa is foul for 15 about $1\frac{3}{4}$ cables offshore, and should not be approached within 3 cables. Foul ground extends about $4\frac{1}{2}$ cables south-westward from the western extremity of this island.

The coasts of Staffa are indented by numerous caves, the most remarkable being Fingal's cave, the entrance to which is an archway, 20 70 feet (21^m3) high, supporting a massive entablature, 30 feet (9^m1) high. The front and sides are composed of complicated ranges of gigantic columns.

Charts 2652, 2771.

Erisgeir (*Lat. $56^{\circ} 25' N.$, Long. $6^{\circ} 15' W.$*), about $3\frac{1}{4}$ miles east-south- 25 eastward of Staffa and about 2 miles from the western side of Mull, is 73 feet (22^m3) high and steep-to.

A rock, which dries about 12 feet (3^m7), is situated about one cable south-south-westward, and a shoal, with a depth of 5 fathoms (9^m1) over it, about $3\frac{1}{2}$ cables westward of Erisgeir. 30

Chart 2771.

A shoal, with depths of from 7 to 9 fathoms (12^m8 to 16^m5) over it, lies on a bank, with depths of from 10 to 20 fathoms (18^m3 to 36^m6) over it, about $1\frac{3}{4}$ miles west-south-westward of Erisgeir ; the depths in this vicinity are uneven. 35

Charts 2652, 2771.

Tidal streams.—Off the western coast of Mull, the streams run northward and southward along the coast and across the entrance to the wide bay which includes Loch Scridain, Loch na Keal and Loch Tuath ; they run fairly strongly in the Sound of Iona, off the western 40 coast of Iona, and along the coast of Mull between Rubh' a' Chaoil and Caliach point, but are weak across the wide bay mentioned above. As off the south-eastern coasts of Tiree and Coll, the times at which the streams begin become later from south to north.

Between Iona and Staffa the north-going stream begins about 45 +0605 Oban (+0035 Dover), the south-going stream begins about -0015 Oban (-0545 Dover) ; the spring rate in each direction is about 0.5 knot. Between Staffa, Gometra, Rubh' a' Chaoil, and the Treshnish isles the north-going stream begins -0555 Oban (+0100 Dover), the south-going stream begins +0015 Oban (-0515 Dover) ; 50 the spring rate in each direction between Staffa, Gometra and the isles is about 0.8 knot, increasing northward to about from 2 to 2.5 knots between Cairn na Burgh Beag and Rubh' a' Chaoil.

Off the north-western side of the Treshnish isles the streams begin

Charts 2652, 2771.

at about the same time as to the eastward of the isles ; the spring rate in each direction is about 1·5 knots.

Between the north-eastern extremity of Coll and Point of Ardnamurchan, the north-going stream begins about -0510 Oban (+0145 Dover), the south-going stream begins about +0115 Oban (-0415 Dover) ; the spring rate in each direction is from one to 1·5 knots. The stream is probably more or less rotatory clockwise (see page 265).

Charts 2771, 2515, 3674.

- 10 *Coast.*—The northern coast of Ross of Mull (page 194), in the western approach to Camas Tuath, is rugged, rocky, and generally steep-to.

Camas Tuath is entered about $2\frac{1}{4}$ miles eastward of the eastern entrance point (*Lat. 56° 21' N., Long. 6° 21' W.*) of the northern entrance to Sound of Iona (page 194). It is a narrow shallow inlet, open northward, the head of which dries out about $3\frac{1}{2}$ cables.

Chart 2617, plan of Loch Na Lathaich.

Loch na Lathaich.—*Islands and dangers.*—Light.—Rubha na Tràighe-maoraich, the western entrance point of Loch na Lathaich, is situated about 4 cables east-south-eastward of the eastern entrance point of Camas Tuath. At the south-eastern end of Loch na Lathaich is a narrow inlet, which dries, extending south-eastward, at the head of which is the village of Bunessan, where small quantities of provisions can be obtained. Vessels call regularly at Bunessan.

- 25 At the south-western end of Loch na Lathaich is Loch Caol, which dries.

A white house, with a black roof, stands at the head of an inlet, which dries, on the eastern side of Loch na Lathaich about one mile northward of Bunessan.

- 30 A light is exhibited, at an elevation of 40 feet (12^m2), from a white beacon, 25 feet (7^m6) in height, situated at the south-eastern end of Eileanan na Liathanaich, about 3 cables northward of the northern extremity of Rubha na Tràighe-maoraich.

Eileanan na Liathanaich are a group of islets and rocks. Split rock, which dries, lies about half a cable north-north-eastward of the north-eastern side of the south-easternmost islet, and a bank, with depths of less than 5 fathoms (9^m1) over it, extends about half a cable farther north-eastward. Between Ruhha na Tràighe-maoraich and the southern side of Eileanan na Liathanaich is a deep channel, free from dangers. Lobster patch, with a depth of 50 feet (15^m2), rock, over it, lies about 7 cables north-westward ; and Crab patch, with a depth of 31 feet (9^m4), rock, over it, lies about 4 cables north-westward of Eileanan na Liathanaich light-beacon.

45 A bank, with depths of less than 5 fathoms (9^m1) over it, extends as much as 2 cables from the western and 4 cables from the eastern side of the loch.

Scott rock, with a depth of 17 feet (5^m2) over it, lies in the entrance, about 3 cables eastward of Rubha na Tràighe-maoraich, at the northern end of a bank, with depths of from 21 to 36 feet (6^m4 to 11^m0) over it.

- 50 Ionain rock, about $6\frac{1}{2}$ cables east-south-eastward of the light-beacon on Eileanan na Liathanaich and about one cable from the eastern shore of the loch, dries 11 feet (3^m4). The summit of Eilean nam Meann, one mile south-south-eastward of the light-beacon on Eileanan na Liathanaich, in line with Cnoc an t-Suidhe, a hill, 235 feet (71^m6)

Chart 2617, plan of Loch na Lathaich.

high, about 6 cables southward of Eilean nam Meann, bearing about 173° , leads close westward of this rock ; see view A on chart 2771.

A shoal, with a depth of 10 feet (3^m0) over it, lies about $1\frac{1}{2}$ cables south-eastward of Rubha na Tràighe-maoraich.

Eilean Beag, 10 feet (3^m0) high, lies close off the eastern side of the loch about $4\frac{1}{2}$ cables south-south-eastward of Iomain rock.

Eilean nam Meann lies on the shore bank about $2\frac{1}{2}$ cables westward of Eilean Beag. The shore bank, with depths of less than 18 feet (5^m5) over it, extends about one cable westward from this islet.

Eilean Bàn, which is situated about $1\frac{1}{2}$ cables south-south-eastward of Edean nam Meann, is 72 feet (21^m9) high.

Anchorage.—The best anchorage in the loch is about $1\frac{1}{2}$ cables west-south-westward of the southern extremity of Eilean Bàn, and about midway between that island (*Lat. $56^{\circ} 19' N.$, Long. $6^{\circ} 15' W.$*) and the shore south-westward, in depths of from 24 to 30 feet (7^m3 to 9^m1), mud. Although the bottom in the outer part of the loch is mud, the holding ground is not good.

Tidal streams.—See page 267.

Chart 2771.

20

Loch Scridain.—**Islets and dangers.**—**Beacon.**—Loch Scridain is entered between the eastern entrance point of Loch na Lathaich, and Rubha na h-Uamha, about $2\frac{1}{2}$ miles north-eastward. The southern shore of the loch is foul, dangers extending as much as $3\frac{1}{2}$ cables offshore in places, but the northern shore is for the most part free from dangers, beyond a distance of one cable offshore. The loch is available as a port of refuge, and is accessible during stormy weather.

Garadh na Sroine, about one mile south-eastward of Rubha na h-Uamha, is bluff and steep-to, and the land within it rises in terraces to Bearraich, a summit, 1,410 feet (429^m8) high, 7 cables north-north-eastward. Aird Kilfinichen is a promontory on the northern side of the loch about $4\frac{1}{2}$ miles east-north-eastward of Garadh na Sroine.

Bogha Mòr, about one mile southward of Garadh na Sroine and about $3\frac{1}{2}$ cables from the southern shore of the loch, dries 2 feet (0^m6). It is one of a group of sunken rocks lying close together ; the north-westernmost of these rocks has a depth of 6 feet (1^m8) over it, and the easternmost rock, with a similar depth, lies about $1\frac{1}{2}$ cables east-north-eastward, of Bogha Mòr.

Àrd Fada is a promontory, 40 feet (12^m2) high, on the southern shore of the loch, about 2 miles east-south-eastward of Garadh na Sroine.

An Carraigean, about $6\frac{1}{2}$ cables east-north-eastward of Àrd Fada and about 3 cables from the southern shore, dries one foot (0^m3) ; there is a channel southward of this rock.

Bogh' an Rubha, about $1\frac{1}{2}$ miles east-north-eastward of Àrd Fada and about $1\frac{1}{2}$ cables from the southern shore, dries 6 feet (1^m8). About $1\frac{1}{2}$ cables north-eastward of this rock is a shoal, with a depth of 8 feet (2^m4) over it, and a shoal bank extends a short distance northward from this shoal. There is no safe channel southward of these rocks.

From the southern shore of the loch, about $2\frac{1}{2}$ miles east-north-eastward of Àrd Fada (*Lat. $56^{\circ} 21' N.$, Long. $6^{\circ} 08' W.$*), foul ground extends about 4 cables northward. Sgeir Alltach, at the northern end of this foul area, dries 9 feet (2^m7). Sgeir Chailleach, about $1\frac{1}{2}$ cables south-eastward of Sgeir Alltach, dries 2 feet (0^m6), and Sgeir

Chart 2771.

na Rad, about $1\frac{1}{2}$ cables east-south-eastward of Sgeir Chailleach, dries 6 feet (1^m8).

Charts 2771, 2515, 3674.

5. The southern extremity of Dun Bluiring, a point on the northern side of the loch, $6\frac{1}{2}$ cables eastward of Garadh na Sroine, in line with Dùn (page 192), bearing 263° , leads northward of Sgeir Alltach. See view D on chart 2771.

Chart 2771.

10. A shoal, with a depth of 2 fathoms (3^m7) over it, lies about $5\frac{1}{2}$ cables eastward of Sgeir Alltach and about $1\frac{1}{2}$ cables from the southern shore, and a shoal, with a depth of $3\frac{1}{2}$ fathoms (6^m4) over it, lies about $1\frac{1}{2}$ miles east-north-eastward of Sgeir Alltach and about 2 cables from the southern shore.

15. Sgeir nighinn Mhic Chattain, about one cable from the eastern side of Aird Kilfinichen, is a small above-water rock; a shoal, with a depth of $4\frac{3}{4}$ fathoms (8^m7) over it, lies about $1\frac{1}{4}$ cables east-south-eastward of Sgeir nighinn Mhic Chattain.

- A beacon consisting of a white mast, 12 feet (3^m7) in height, surrounded by a triangle in a circular frame, studded with red reflector studs, stands on Aird of Kinloch at the head of the loch, about $1\frac{1}{2}$ miles east-north-eastward of Aird Kilfinichen.

- Tidal streams.**—Off the entrance to Loch Scridain at a position 0·5 mile 000° from Eileanan na Liathanach light-beacon, the stream 25 is more or less rotary clockwise; it is nearly slack, running weakly north-eastward at about +0445 Oban (-0045 Dover), and changes direction through east and south, with a spring rate of 0·3 knot, till -0030 Oban (-0600 Dover), when it is again nearly slack, running weakly south-westward. The rate then again increases, whilst the 30 direction changes through west, till +0300 Oban (-0330 Dover), when the greatest rate is attained, 0·5 knot at springs in a north-westerly direction, after which the rate decreases whilst the direction changes through north.

- In the entrance the in-going stream begins -0610 Oban (+0045 Dover), and the out-going stream H.W. Oban (-0530 Dover); the spring rate in each direction is about 0·5 knot. The streams are very weak in Loch Scridain itself, and imperceptible in Loch na Làthaich.

- Anchorages.—Directions.**—Bun an Leoib is entered between Rubha Dubh, a promontory, 44 feet (13^m4) high, on the southern side 40 of the loch, about $1\frac{1}{2}$ miles east-south-eastward of the south-western entrance point of the loch, and Ardchristnish promontory, $5\frac{1}{2}$ cables eastward; it affords anchorage, in depths of from 5 to 9 fathoms (9^m1 to 16^m5). This anchorage should not be used during northerly and north-westerly winds, when a heavy swell sets in. The western 45 side of this bight is foul for about 2 cables offshore, and the eastern side for about one cable. The head of the bight dries out about one cable.

- Bogha Mòr and the group of sunken rocks in its vicinity, lie in the entrance to Bun an Leoib. A vessel can pass either westward or 50 eastward of Bogha Mòr; the western channel has a least width of one cable, and the eastern of $1\frac{1}{2}$ cables.

- Port Mòr is entered $6\frac{1}{2}$ cables south-westward of Ard Fada (*Lat. $56^\circ 21' W.$, Long. $6^\circ 08' W.$*); there are depths of from 6 to 7 fathoms (11^m0 to 12^m8) in this bight, about one cable offshore.

Chart 2771.

A vessel approaching Port Mòr from westward must avoid a shoal, with a depth of $1\frac{1}{2}$ fathoms ($2^{\text{m}}3$) over it, about 5 cables east-south-eastward of the northern extremity of Ardchrisnish promontory and about $1\frac{1}{2}$ cables offshore ; and also the spit, on which there is a rock, ⁵ with a depth of less than 6 feet ($1^{\text{m}}8$) over it, extending about $1\frac{1}{2}$ cables offshore, close south-eastward of the $1\frac{1}{2}$ -fathom ($2^{\text{m}}3$) shoal.

Small vessels can obtain good, but restricted, anchorage about $1\frac{1}{2}$ cables south-eastward of Sgeir Altach, between Sgeir Chailleach and Sgeir na Rad, in a depth of 4 fathoms ($7^{\text{m}}3$). This anchorage is ¹⁰ completely sheltered from westward, by the rocks on its western side.

The belfry of Kilfinichen church, about 4 cables northward of the south-western extremity of Aird Kilfinichen, bearing 353° astern, and seen, over the western end of Aird Kilfinichen, leads to the anchorage, ¹⁵ but as a slight divergence from this course would be dangerous, a vessel without local knowledge should only enter at or near low water, when Sgeir Chailleach and Sgeir na Rad are visible.

Kilfinichen bay is entered between Aird Kilfinichen and the land ⁵ 5 cables west-south-westward ; the head of the bay dries out about ²⁰ 3 cables, and anchorage may be obtained southward of this drying part. The bay is at the foot of a glen dividing two ranges of high hills.

A vessel approaching Kilfinichen bay from westward should be careful to avoid a rocky spur extending three-quarters of a cable ²⁵ east-south-eastward from the western entrance point. The southern extremity of Aird Kilfinichen in line with the north-western extremity of Aird of Kinloch, bearing 063° , leads southward of this rocky spur.

Loch Beag, at the head of Loch Scridain, is a shallow basin. Anchorage can be obtained by small vessels just within its entrance, ³⁰ in depths of from $1\frac{1}{2}$ to 2 fathoms ($3^{\text{m}}2$ to $3^{\text{m}}7$).

Charts 2652, 2771.

Approach to Loch na Keal.—From Rublia na h-Uamha the coast trends about 4 miles north-eastward to Bogha nan Cruban. It is fringed by a narrow reef, and is backed by the Ard Meanach and ³⁵ Gribun ranges, the former attaining an elevation of 1,698 feet ($517^{\text{m}}5$) in Beinn na Sreine about $3\frac{1}{2}$ miles north-eastward of Garadh na Sroine.

Chart 2652.

Ulva and Gometra are two islands lying close together on the northern side of the western approach to Loch na Keal ; the eastern ⁴⁰ extremity of Ulva is situated about $2\frac{1}{2}$ miles northward of Bogha nan Cruban (*Lat.* $56^{\circ} 26' N.$, *Long.* $6^{\circ} 09' W.$). The two islands are separated by Am Bru, a narrow and intricate channel which dries, through which boats can pass 2 hours before high water springs. Beinn Chreagach, the summit of Ulva, near the centre of the island, is 1,019 ⁴⁵ feet ($310^{\text{m}}6$) high. Gometra is 497 feet ($151^{\text{m}}5$) high.

Numerous rocks fringe the southern coasts of Ulva and Gometra, which are much indented, but none of the inlets, except Bail' a Chlaidh harbour (page 273) affords anchorage.

From Rubha Maol na Mine, the south-western extremity of Gometra, ⁵⁰ the western coast of that island trends about three-quarters of a mile northward to Rubha Clach Chuilein. Eilean Dioghium, close northward of a point 2 cables north-eastward of Rubha Clach Chuilein, to which it is joined by a reef that dries, is 117 feet ($35^{\text{m}}7$) high. Rocks

Chart 2635.

Chart 2652.

and shoals extend off the western coasts of Gometra and Eilean Dioghlum for about $1\frac{1}{2}$ cables.

Charts 2652, 2771.

5 **Off-lying islets and dangers.**—A rock, with a depth of 5 fathoms (9^m1) over it, and a patch, with a depth of 7 fathoms (12^m8) over it, lie off the western side of Gometra about 7 and 9 cables westward, respectively, of Rubha Maol na Mine; both these shoals lie on detached banks with depths of less than 10 fathoms (18^m3) over them.

10 Two rocks, with depths of $4\frac{1}{2}$ and $5\frac{1}{2}$ fathoms (8^m2 and 10^m5) over them, lie about $9\frac{1}{2}$ and 7 cables westward, respectively, of the northern extremity of Eilean Doighlum. These shoals lie on detached banks, with depths of less than 10 fathoms (18^m3) over them. A detached bank, with depths of from 9 to 10 fathoms (16^m5 to 18^m3) over it, lies about a quarter of a mile northward of the $4\frac{1}{2}$ -fathom (8^m2) rock. The depths in this vicinity are uneven.

Three-foot rock, situated about 2 miles northward of Rubha na h-Uamha and about 6 cables offshore, has a least depth of 3 feet (0^m9) over it. Sgeir a Chlaidheimh Mòr, about half a mile north-eastward of Three-foot rock, dries about 13 feet (4^m0). Sgeir a Chlaidheimh Beag, about $3\frac{1}{2}$ cables east-north-eastward of Sgeir a Chlaidheimh Mòr, dries 7 feet (2^m1). Within the rocks just described, and close offshore, are other above-water and sunken rocks.

25 The western extremity of Inch Kenneth (page 273), in line with the eastern extremity of Ulva, bearing about 027° , leads close north-westward of Three-foot rock, Sgeir a Chlaidheimh Mòr, and Sgeir a Chlaidheimh Beag.

Chart 2652.

30 Mâisgeir, about $3\frac{1}{2}$ cables southward of Rubha Maol na Mine, is an islet, 19 feet (5^m8) high. A reef extends about 2 cables south-south-eastward, one cable eastward and $1\frac{1}{2}$ cables north-north-eastward from Mâisgeir. An above-water rock lies on the southern end of this reef. A patch, with a depth of $5\frac{1}{2}$ fathoms (10^m5) over it, lies about $2\frac{1}{2}$ cables westward of the southern extremity of Mâisgeir.

35 The channel between Mâisgeir (*Lat. $56^\circ 28' N.$, Long. $6^\circ 18' W.$*) and Gometra is encumbered with rocks which leave a very narrow channel in the centre with a depth of 6 feet (1^m8) in it.

Sgeir na Skeincadh, about $1\frac{1}{2}$ miles eastward of Mâisgeir and 3 cables from Rubha Bhriscadh-ramh, dries 9 feet (2^m7). Bogha Ludden, about $5\frac{1}{2}$ cables south-eastward of Rubha Bhrisdeadh-ramh, has a depth of 4 feet (1^m2) over it. The southern extremity of Garbh eilean, which is steep-to, and the southernmost of a group of islets and rocks connected with the southern coast of Ulva, in line with the southern extremity of Inch Kenneth, bearing 117° , leads south-westward of these rocks.

45 Little Colonsay, 195 feet (59^m4) high, is situated with its north-western extremity about one mile south-south-eastward of Rubha Bhrisdeadh-ramh. A bank, with depths of less than 5 fathoms (9^m1) over it, extends about 3 cables south-westward from the south-western side of Little Colonsay, and there is a detached patch, with a depth of 5 fathoms (9^m1) over it, about $1\frac{1}{2}$ cables farther south-westward. A shoal, with a least depth of 6 fathoms (11^m0) over it, lies about $1\frac{1}{4}$ miles south-westward of the southern extremity of Little Colonsay.

A shoal, with a depth of $3\frac{1}{2}$ fathoms (5^m9) over it, and a shoal, with

Chart 2652.

a depth of $1\frac{3}{4}$ fathoms ($3^{\text{m}}2$) over it, lie about $2\frac{1}{2}$ cables northward and about 4 cables east-north-eastward, respectively, of the north-western extremity of Little Colonsay. A shoal, with a depth of 2 fathoms ($3^{\text{m}}7$) over it, lies about $3\frac{1}{2}$ cables north-north-westward of the eastern extremity of Little Colonsay and about one cable from the north-eastern side of that island. Sgaigein, 2 feet ($0^{\text{m}}8$) high, is situated about $1\frac{1}{2}$ cables northward, and a shoal, with a depth of $4\frac{1}{2}$ fathoms ($8^{\text{m}}2$) over it, about $2\frac{1}{2}$ cables east-north-eastward of the eastern extremity of Little Colonsay. 5

There is a deep channel between Little Colonsay and Garbh eilean, available for vessels with local knowledge, but care should be taken to avoid the dangers described above. 10

Anchorage.—Bail' a Chlaiddh, a small basin at the south-western end of the channel between Gometra and Ulva, affords excellent anchorage to small vessels, about $5\frac{1}{2}$ cables north-north-eastward of Rubha Bhrisdeadh-ramh, in a depth of 5 fathoms ($9^{\text{m}}1$). A vessel approaching this harbour should be careful to avoid Bogha Ludden and Sgeir na Skeineadh, described above. 15

Chart 3015.

20

Loch na Keal.—Islets and dangers.—Loch na Keal is entered between the south-eastern extremity of Ulva and Rubh' a' Ghéarrain (*Lat. $56^{\circ} 27' N.$, Long. $6^{\circ} 08' W.$*), $1\frac{1}{2}$ miles south-south-eastward. Rubh' a' Ghéarrain is a steep bluff, rising close within to high land.

There is a post office at Grulinne, at the head of the loch. 25

Inch Kenneth, about $1\frac{1}{2}$ miles south-south-westward of the eastern extremity of Ulva, is 156 feet ($47^{\text{m}}5$) high; the channel between the eastern side of Inch Kenneth and the western side of Mull is foul. Foul ground extends about $4\frac{1}{2}$ cables northward from the northern end of Inch Kenneth; Maol an Domhnaich, on the northern end of this foul area, dries about 13 feet ($4^{\text{m}}0$). 30

Samalan island, about 5 cables east-north-eastward of the north-eastern end of Inch Kenneth, is 9 feet ($2^{\text{m}}7$) high. The channel between the south-eastern side of Samalan island and Rubh' a' Ghéarrain, $2\frac{1}{2}$ cables south-eastward, is foul; Sgeir a Cheirde, lying in the centre of this channel, dries 8 feet ($2^{\text{m}}4$). Foul ground extends about 2 cables north-westward from Samalan island; Sgeir Bhuidhe, lying in this foul area, dries 3 feet ($0^{\text{m}}9$). 35

Geasgill Beag and Geasgill Mòr are the two largest of a group of islets and rocks lying in the entrance to Loch na Keal; the latter is 38 feet ($11^{\text{m}}6$) high. 40

Sgeir Bhioramull and Sgeir nan Leac, situated close off the south-eastern end of Ulva, dry 10 and 12 feet ($3^{\text{m}}0$ and $3^{\text{m}}7$), respectively. A shoal, with a depth of 2 fathoms ($3^{\text{m}}7$) over it, lies about $1\frac{1}{2}$ cables eastward of Sgeir nan Leac. 45

MacQuarrie's rock, situated in the entrance, about $4\frac{1}{2}$ cables southward of the south-eastern extremity of Ulva, dries one foot ($0^{\text{m}}3$). Foul ground extends nearly half a cable westward, and a bank, with depths of less than 5 fathoms ($9^{\text{m}}1$) over it, extends about one cable north-north-eastward from MacQuarrie's rock. 50

The northern extremity of the Geasgill group (*Lat. $56^{\circ} 27' N.$, Long. $6^{\circ} 10' W.$*) in line with the southern extremity of Garbh eilean, bearing 266° , leads through the fairway southward of MacQuarrie's rock. The eastern extremity of Ulva in line with the eastern extremity

Chart 3015.

of Ard na Caillich, 2 cables north-north-westward, bearing 347° , leads close eastward of the shoal bank north-north-eastward of MacQuarrie's rock.

5 Eorsa island, the western extremity of which is situated about $1\frac{1}{4}$ miles north-eastward of Samalan island, is 313 feet ($95^{\text{m}}4$) high. Ullin rocks, lying from about one to $2\frac{1}{2}$ cables north-westward of the western extremity of Eorsa island, are a group of detached rocks, with depths of from 4 to 5 fathoms ($7^{\text{m}}3$ to $9^{\text{m}}1$) over them. A bank, with 10 depths of less than 5 fathoms ($9^{\text{m}}1$) over it, extends about $2\frac{1}{4}$ cables eastward from the eastern extremity of Eorsa island, and Sgeir Bhuidhe, which lies on this bank, dries 9 feet ($2^{\text{m}}7$). South channel and North channel, southward and northward of Eorsa island, respectively, are both deep, but South channel is the wider.

15 From Rubha na Mòine, on the south-eastern shore of the loch, about one mile eastward of the eastern extremity of Eorsa island, a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extends about 2 cables westward; at the western edge of this bank is a rock, with a depth of less than 6 feet ($1^{\text{m}}8$) over it; a shoal, with a depth of 4 fathoms ($7^{\text{m}}3$) over it, lies about $2\frac{1}{2}$ cables northward of Rubha na Mòine. Gallie rocks, about $6\frac{1}{2}$ cables northward of Rubha na Mòine, have a least depth of 4 feet ($1^{\text{m}}2$) over them.

Scarisdale point is the extremity of the foul ground, which dries 10 feet ($3^{\text{m}}0$), and extends about $1\frac{1}{2}$ cables northward from the southern 25 shore of the loch, $4\frac{1}{2}$ cables east-north-eastward of Rubha na Mòine. Between Scarisdale point and Gallie rocks are several shoals.

Scarisdale rocks, about $4\frac{1}{2}$ cables north-eastward of Scarisdale point, are a group of rocks, lying on the coastal reef, which dry 10 feet ($3^{\text{m}}0$) in places. A shoal, with a depth of 3 fathoms ($5^{\text{m}}5$) over it, lies about 30 6 cables northward of Scarisdale point.

A bare patch in a wood and a conspicuous tree on the northern shore of the loch, about $2\frac{1}{4}$ miles north-eastward of the northern extremity of Eorsa island, in line with a small sharp summit on the skyline (see view C on chart 3015), bearing about 027° , leads north-westward of Gallie rocks. The northern extremity of Eorsa island in line with the summit of Geasgill Mòr (see view A on chart 3015), bearing 253° , leads northward of Gallie rocks, Scarisdale rocks, and the 3-fathom ($5^{\text{m}}5$) shoal 6 cables northward of Scarisdale point (*Lat. $56^{\circ} 28' N.$, Long. $6^{\circ} 02' W.$*).

40 A bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extends about $2\frac{1}{2}$ cables north-westward from Rubha Ard nan Eisirein, a point on the south-eastern side of the loch 9 cables north-eastward of Scarisdale point. A rock, which dries 2 feet ($0^{\text{m}}6$), lies about $2\frac{1}{4}$ cables north-north-westward of Rubha Ard nan Eisirein, and a rock, with a 45 depth of less than 6 feet ($1^{\text{m}}8$) over it, lies about a quarter of a cable farther west-north-westward.

A shoal, with a depth of 4 fathoms ($7^{\text{m}}3$) over it, lies about 6 cables north-north-westward of Rubha Ard nan Eisirein. A bank, which dries, extends about $3\frac{1}{2}$ cables from the head of the loch.

55 **Anchorages.**—There is good anchorage about $5\frac{1}{2}$ cables south-eastward of the south-eastern point of Eorsa island and about $4\frac{1}{2}$ cables from the southern shore of the loch, in depths of from 12 to 15 fathoms ($21^{\text{m}}9$ to $27^{\text{m}}4$), mud.

A small vessel can obtain anchorage about $1\frac{1}{2}$ cables from the north-

Chart 3015.

eastern side of Eorsa island, with the northern extremity of that island in line with Ard Dearg, a point on the northern side of the loch, bearing about 276° , in depths of from 5 to 6 fathoms ($10^{\text{m}1}$ to $11^{\text{m}0}$).

A vessel can obtain good anchorage in the eastern part of the loch, taking care to avoid Gallie rocks and the dangers eastward of them. 5

A vessel anchoring in Loch na Keal should bear in mind that this loch is remarkable for the heavy squalls which sweep over it, and that strong westerly winds cause a swell, which is felt even in the eastern part of the loch. 10

Charts 3015, 2652, 2617, 2515, 3674.

Directions.—A vessel bound for Loch na Keal from southward should pass westward of Duhh Artach lighthouse (page 194), and should not bring that lighthouse to bear more than 173° until the summit of Lunga (page 266) bears 053° and is well open north-westward 15 of Bac Mòr (page 266). She should steer for Lunga on that bearing until Dùn, on Iona (page 192), bears 106° and is well open northward of Reidh eilean (page 193), whence she may steer to pass about half a mile southward of Staffa. 20

Charts 3015, 2652.

From southward of Staffa the vessel should steer with the left fall of Eorsa island in line with the square peak close southward of Cruach Tòrr an Lochain, a mountain 1,133 feet ($345^{\text{m}3}$) high, $4\frac{1}{2}$ miles east-north-eastward of the northern extremity of Eorsa island (see view B on chart 3015), bearing 074° , which leads through the fairway into 25 Loch na Keal, passing between Maol an Doinhnaich and Geasgill Mòr (*Lat. $56^{\circ} 27' N.$, Long. $6^{\circ} 10' W.$*), and southward of MacQuarrie's rock.

Charts 3015, 2652, 2771.

Approaching Loch na Keal from Loch Scridain (page 269) a berth 30 of at least 2 cables should be given to the western coast of Mull, and course shaped to pass eastward of Erisgeir; the vessel should then follow the directions given above.

Chart 3015.

When the south-eastern extremity of Ulva is in line with the eastern 35 extremity of Ard na Cailllich (page 274), bearing 347° , the vessel can steer to pass through either South channel or North channel; the former is considered the better route. If she is proceeding through South channel she should pass south-eastward of Sgeir Bhuidhe, at the eastern end of Eorsa island, at a prudent distance, and steer north- 40 eastward until the northern extremity of Eorsa island is in line with the summit of Geasgill Mòr, bearing 253° , astern, which leads towards the anchorage at the head of the loch. The clearing marks leading north-westward and northward of Gaillie rocks were given on page 274.

If proceeding through North channel she should pass northward of 45 Ullin rocks, and keep not less than one cable northward of Eorsa island, and then proceed as directed above.

Tidal streams.—Along the coast between Loch Scridain and Loch na Keal, in the entrance to the latter, and on both sides of Eorsa island the north- and in-going stream begins —0610 Ohan (+0045 50 Dover), and the south- and out-going stream H.W. Ohan (-0530 Dover); the streams are very weak.

Sound of Ulva.—**Dangers.**—**Submarine cable.**—The Sound of Ulva separates the south-eastern end of Ulva from the western coast

Charts 2155, 2635.

Chart 3015.

of Mull, and connects Loch na Keal with Loch Tuath. It is a narrow, intricate channel with many dangers, as it has a least width of a quarter of a cable, with depths of from 3 to 18 feet (0^m9 to 5^m5) in the north-western part of the sound, which only boats can use.

A ferry crosses the sound, about $6\frac{1}{2}$ cables from the south-eastern entrance.

A submarine cable crosses the sound about half a cable southward of the ferry. See page 7.

10 Eilean Casach, the south-eastern extremity of which is situated about $2\frac{1}{2}$ cables west-north-westward of Ard Dearg, is connected northward with Mull by a reef that dries; foul ground extends about $1\frac{1}{2}$ cables south-south-eastward from its south-eastern end. Sgeir a Charraigein, lying at the southern end of this foul area, dries $9\frac{1}{2}$ feet (2^m9).

15 Clarke rock, situated in the south-eastern entrance to the sound, about 2 cables south-westward of the south-eastern end of Eilean Casach, has a depth of $3\frac{1}{2}$ fathoms (6^m4) over it. The north-eastern extremity of Ard na Cailllich (page 274) in line with a point, $4\frac{1}{2}$ cables north-westward, bearing 318° , leads close south-westward of this rock.

20 Anchorage.—A small vessel can obtain good anchorage in the south-eastern part of the sound, about $1\frac{1}{2}$ cables eastward of Ard na Cailllich (*Lat. $56^\circ 29' N.$, Long. $6^\circ 09' W.$*), in a depth of 7 fathoms (12^m8), mud. A vessel approaching this anchorage should pass about one cable eastward of the south-eastern end of Ulva.

Chart 2652.

Loch Tuath.—Islets and dangers.—Loch Tuath is entered between Eilean Dioghlum (page 271) and Rubh' a' Chaoil, about 2 miles north-north-westward; the southern side of the loch is formed by the northern sides of Gometra and Ulva; a vessel approaching this loch 30 from southward should not close the western side of Gometra within $2\frac{1}{2}$ cables.

Treshnish isles, lying on the southern side of the western entrance to Loch Tuath, are described on page 266.

A rock, which dries, is situated on the northern side of the loch, 35 about $3\frac{1}{2}$ cables west-north-westward of Rubh' an t-Suibhein, a promontory $1\frac{1}{2}$ miles east-south-eastward of Rubh' a' Chaoil.

Bogha Mòr, about $2\frac{1}{2}$ cables southward of Rubh' an t-Suibhein, has a depth of 2 fathoms (3^m7) over it.

A rock, with a depth of less than 6 feet (1^m8) over it, is situated 40 on the western side of the entrance to Traigh na Cille, a bight on the northern shore of the loch, about $1\frac{1}{2}$ miles eastward of Rubh' an t-Suibhein; another similar rock lies about three-quarters of a cable farther north-north-eastward.

Eilean Rainich, about $2\frac{1}{2}$ miles eastward of Rubh' an t-Suibhein, 45 lies on the coastal reef close off the northern shore of the loch. An Carraigean, $1\frac{1}{2}$ cables south-south-eastward of Eilean Rainich, dries about 13 feet (4^m0).

Bogha nan Ceard, about one mile south-eastward of Eilean Rainich and about $1\frac{1}{2}$ cables from Tòrr an Ard, the western entrance point of 50 Ballygown (Balligown) bay, dries 2 feet (0^m6). A shoal, with a depth of $2\frac{1}{2}$ fathoms (4^m6) over it, lies about $2\frac{1}{2}$ cables south-westward of Tòrr an Ard. A bank, with depths of less than 5 fathoms (9^m1) over it, extends about $2\frac{1}{2}$ cables southward and south-westward from Bogha nan Ceard.

Chart 2652.

Sgeir Dubhail, about 5 cables north-north-westward of Tòrr Ardalum, a promontory on the south-western side of the north-western entrance to the Sound of Ulva (page 275), dries 7 feet (2^m1) ; a shoal, with a depth of 4 fathoms (7^m3) over it, lies about $2\frac{1}{2}$ cables westward of Sgeir Dubhail. South-eastward of Sgeir Dubhail there are numerous islets and rocks. 5

Anchorage.—Sorby bay is entered between Tòrr Ardalum and Rubha nan Gall, $8\frac{3}{4}$ cables west-north-westward ; it affords the only safe anchorage in the loch during all winds, is easy of access, and has 10 a moderate depth and good holding ground. A good berth is with the north-eastern extremity of Rubha nan Gall in line with the north-eastern extremity of the land north-westward, bearing about 300° , about $1\frac{3}{4}$ cables offshore, in a depth of about 9 fathoms (16^m5), mud.

A vessel entering Sorby bay should take care to avoid Sgeir Dubhail 15 and the shoal, with a depth of 4 fathoms (7^m3) over it, westward of it, also a shoal, with a depth of $4\frac{1}{2}$ fathoms (8^m7) over it, lying in the entrance of the bay, about 6 cables east-south-eastward of Rubha nan Gall.

Tidal streams.—The in-going stream begins —0555 Oban (+0100 20 Dover) the out-going stream begins +0015 Oban (-0515 Dover) ; the streams are very weak.

Charts 2652, 2832.

Coast.—Calgary bay is entered between a point about $1\frac{1}{2}$ miles northward of Rubh' a' Chaoil and Rubha nan Oirean about $1\frac{1}{2}$ miles 25 north-north-eastward. Being open to south-westerly and westerly winds, it is only suitable for anchorage during northerly and easterly winds and fine weather.

Chart 2832.

At the head of the bay is Calgary castle, and there is a post and 30 telegraph office at Calgary.

Foul ground extends about 3 cables south-south-westward from Rubha nan Oirean. A shoal, with a depth of 2 fathoms (3^m7) over it, lies about $2\frac{1}{2}$ cables south-south-eastward, and a shoal, with a depth of 5 fathoms (9^m1) over it, about 5 cables east-south-eastward of Rubha 35 nan Oirean.

The head of Calgary bay dries out about $1\frac{1}{2}$ cables, and a bank, with depths of less than 5 fathoms (9^m1) over it, extends about 5 cables farther.

A vessel approaching Calgary bay from northward should give the 40 coast of Mull a berth of at least 5 cables. The coast between Rubha nan Oirean, and Caliach point, the north-western extremity of Mull, $1\frac{1}{2}$ miles northward, is fringed by a reef, which extends, in places, $2\frac{1}{4}$ cables offshore.

Port Langamull, which is entered about $1\frac{1}{2}$ miles eastward of Caliach 45 point (*Lat. $56^{\circ} 36' N.$, Long. $6^{\circ} 19' W.$*), is open northward.

Submarine cable.—A submarine cable, the direction of which is indicated on the chart, is landed at the head of Calgary bay ; see page 7.

Tidal streams.—Between Rubh' a' Chaoil and Caliach point the 50 north-going stream begins —0510 Oban (+0145 Dover) and the south-going stream +0115 Oban (-0415 Dover) ; the streams in both directions run fairly strongly along the coast, and the spring rate is from 2 to 2.5 knots off the salient points, but not more than about one

Chart 2832.

knot across the entrance to Calgary bay. The streams in Calgary bay are imperceptible.

Chart 2832, with plan of Loch a Chumhainn.

5. **Loch a Chumhainn.**—**Dangers.**—**Caution.**—Loch a Chumhainn is entered between Rubha an Ard, the eastern entrance point of Port Langamull, and Quinish point, $1\frac{1}{2}$ miles north-eastward. The head of the loch dries out about $9\frac{1}{2}$ cables. Both sides of the loch are rocky and foul. Good shelter, except from northerly and north-westerly winds which cause a heavy swell, can be obtained here.

Owing to the imperfect nature of the survey the plan of Loch a Chumhainn on chart 2832 should be used with caution.

Sgeir Mhòr, about $7\frac{1}{2}$ cables west-south-westward of Quinish point, dries 7 feet (2^m1).

15. Croig house a white house situated on the south-western shore of the loch, about $9\frac{1}{2}$ cables south-eastward of Rubha an Ard, in line with Càrn Mòr, a conical peak, 1,116 feet (340^m2) high, about $2\frac{3}{4}$ miles southward, bearing 180° , leads eastward of this reef in a depth of about 4 fathoms (7^m3) ; a vessel should keep a little westward of this alignment.

Sgeirean Beaga, about 4 cables eastward of Rubha an Ard, dries 7 feet (2^m1). Beinn Hiant (page 279), bearing 061° , open north-westward of Sorne point, leads north-westward of Sgeirean Beaga. See view on chart 2832.

25. **Anchorages.**—A vessel can anchor eastward of Sgeirean Beaga with Croig house in line with Càrn Mòr, bearing 180° , in depths of from 5 to 6 fathoms (9^m1 to 11^m0).

A small vessel with local knowledge can proceed south-eastward into the loch, and anchor east-north-eastward of Croig house, in a depth of 30 2 fathoms (3^m7).

Chart 2832.

Coast.—Loch Mingary is entered about $3\frac{1}{2}$ cables east-north-eastward of Quinish point ; it is a narrow inlet the head of which dries out for about half its length.

35. Cuan Mòr, situated on the north-eastern side of the entrance about 2 cables north-westward of Rubh' an Laorin, the north-eastern entrance point, is a group of above-water and sunken rocks.

The coast between Sorne point (*Lat. $56^\circ 39' N.$, Long. $6^\circ 11' W.$*), 7 cables north-eastward of Rubh' an Laorin, and Ardmore point, the northern extremity of Mull, 2 miles east-north-eastward, is fringed with a narrow reef. Glengorm castle, which is conspicuous, is situated about 6 cables south-eastward of Sorne point.

About $1\frac{3}{4}$ cables east-south-eastward of Sorne point is a landing place which can be used in fine weather.

45. Ardmore bay is entered between Ardmore point and Aigéann Charraig, $5\frac{1}{2}$ cables west-south-westward ; it affords shelter from southerly winds, and is useful as a temporary anchorage. Ardmore point is low, rocky, and steep-to.

Charts 2832, 2155, 2515, 3674.

50. **Tidal streams.**—The streams begin nearly simultaneously off Caliach point and Point of Ardnamurchan, but in mid-channel between the points they are rotatory and probably run much as at a position 5 miles 219° from Ardnamurchan lighthouse, see page 287.

It should be noted that the north-east-going stream at this position

Charts 2832, 2155, 2515, 3674.

and the north-going streams off Caliach point and Point of Ardnamurchan begin nearly simultaneously at about -0510 Oban (+0145 Dover), and the south-going streams begin simultaneously at about +0115 Oban (-0415 Dover); but in the north-western approach to ⁵ the Sound of Mull (see below), near mid-channel off Sròn Bheag, where the streams are very weak, the east-going stream begins -0200 Oban (+0455 Dover), and the west-going stream begins +0300 Oban (-0230 Dover).

The streams run about northward and southward past Caliach point, ¹⁰ but there is very little stream along the coast; between Caliach point and Ardmore point. In Loch a Chumhainn and Loch Mingary the in-going streams begin about -0555 Oban (+0100 Dover), and the out-going streams begin about +0010 Oban (-0520 Dover), but the streams are very weak.

Though there is little or no stream along the coast westward of Ardmore point, off the point very weak streams begin to run eastward towards the Sound of Mull about -0200 Oban (+0455 Dover), and westward from the sound about +0300 Oban (-0230 Dover). There is little or no stream in Bloody bay (page 294). ¹⁵

Off Rubha nan Gall (*Lat. 56° 38' N., Long. 6° 04' W.*), the south-east-going stream begins about -0100 Oban (+0555 Dover), the north-west-going stream begins about +0400 Oban (-0130 Dover); the spring rate off the point is probably about from 1.5 to 2 knots. Eddies form on both sides of the point off which there are ripples or ²⁰ overfalls.

Chart 2155.

SOUND OF MULL AND APPROACHES.—Sound of Mull, separating the north-eastern side of the island of Mull from the south-western side of Morvern peninsula, forms a sheltered passage for ³⁰ vessels of moderate size, bound between the southern ports on the western coast of Scotland and the Pentland firth. It possesses many good temporary anchorages along its shores, whilst near its northern end the harbour of Tobermory is easy of access by day or at night.

Many shoals exist in the sound, but they are mostly marked by ³⁵ buoys.

In fine weather with winds from between north-east and east, there is frequently a fresh breeze on the weather side of the sound, whilst there is scarcely any wind to leeward. Under Beinn Hiant, a mountain 1,722 feet (524^m9) high with two peaks, $4\frac{1}{2}$ miles north-north-eastward ⁴⁰ of Tobermory, and about Mingary castle, $1\frac{1}{2}$ miles westward of Beinn Hiant, at the north-western entrance, a fresh gale sometimes blows continuously for hours, whilst at Tobermory and the adjacent parts of the sound the wind is light.

Local magnetic anomaly.—See page 285. ⁴⁵

Caution.—Submarines frequently exercise in and off the north-western approach to the Sound of Mull, westward of longitude $6^{\circ} 05' W.$. See Notice to Mariners No. 8 of each year.

Pilots.—Pilots for the Sound and for all parts of the Hebrides can be obtained at Tobermory. ⁵⁰

Chart 3607.

South-eastern part of Sound of Mull.—Islets and dangers.—
Lights.—Buoyage.—Lady's rock, on which there is a light-beacon,

Chart 3607.

situated in the south-eastern approach to Sound of Mull, is described on page 201.

Duart point, the northern extremity of a promontory on the south-western shore, about $6\frac{1}{2}$ cables north-north-westward of William Black's memorial tower (page 201), is rocky, and steep-to ; Duart castle is situated close to the point.

Between Rubh' a' Ghuirnein, $7\frac{1}{2}$ cables west-north-westward of Duart point, and Rubha na Srobine, $8\frac{1}{2}$ cables north-westward, a bank 10 with depths of less than 5 fathoms ($9^{\text{m}}1$) over it, extends as much as $1\frac{1}{2}$ cables offshore. A bank, with depths of from 5 to 20 fathoms ($9^{\text{m}}1$ to $36^{\text{m}}6$) over it, extends $8\frac{1}{2}$ cables north-eastward from this portion of the coast.

The south-eastern entrance to the Sound of Mull lies between 15 Scallastic point, about $1\frac{1}{4}$ miles north-westward of Rubha na Srobine, and Rubha an Ridire, about $1\frac{1}{4}$ miles east-north-eastward.

Rubha an Ridire, the southern extremity of Morvern peninsula, is almost steep-to. Eilean Rubha an Ridire, about 5 cables north-westward of Rubha an Ridire and about $1\frac{1}{2}$ cables from the western 20 side of this promontory, is a grey islet, 50 feet ($15^{\text{m}}2$) high. A shoal, with a depth of $2\frac{1}{2}$ fathoms ($4^{\text{m}}6$) over it, lies about three-quarters of a cable south-south-eastward, and foul ground extends about one cable north-north-westward from this islet. There is a channel about half a cable wide between Eilean Rubha an Ridire and the promontory.

25 Eilean Rubha an Ridire and the dangers in its vicinity are covered by the green sector of Ardtornish light, with that light bearing less than 302° .

Scallastic point (*Lat. $56^{\circ} 29' N.$, Long. $5^{\circ} 43' W.$*) is the eastern entrance point of Scallastic bay ; it rises about a quarter of a mile 30 inland to Druim an Dhubhair, a rocky mound, 82 feet ($25^{\text{m}}0$) high, covered with trees. Foul ground extends about $4\frac{1}{2}$ cables north-north-westward from Scallastic point ; Sgeir nan Gobhar, close to the northern end of this foul ground, is 5 feet ($1^{\text{m}}5$) high. Shoals, with depths of $2\frac{1}{2}$, $2\frac{1}{2}$, and $4\frac{1}{2}$ fathoms ($5^{\text{m}}0$, $4^{\text{m}}6$, and $7^{\text{m}}8$) over them, lie 35 about $3\frac{1}{2}$, $5\frac{1}{2}$, and 7 cables north-westward, respectively, of Scallastic point.

Glas eileanan consists of two islets, of which the eastern is 15 feet ($4^{\text{m}}6$) high. Shoals extend about $3\frac{1}{2}$ cables south-eastward from the eastern islet, and foul ground extends about $1\frac{1}{2}$ cables west-north-westward from the western islet.

A light is exhibited, at an elevation of 34 feet ($10^{\text{m}}4$), from a white circular structure on a white masonry base, 22 feet ($6^{\text{m}}7$) in height, on the eastern islet of Glas eileanan.

A shoal, with a depth of $2\frac{1}{2}$ fathoms ($4^{\text{m}}6$) over it, lies about one 45 cable north-eastward of Glas Eileanan light-structure, and a shoal, with a depth of 5 fathoms ($9^{\text{m}}1$) over it, lies about $1\frac{1}{2}$ cables north-north-westward of the western islet. The bottom in the vicinity of these islets is very uneven.

The south-western extremity of Ardtornish point (page 281), in 50 line with Lochaline pier, $1\frac{1}{4}$ miles north-westward, bearing about 310° , leads close north-eastward of the $2\frac{1}{2}$ -fathom ($4^{\text{m}}6$) shoal mentioned above.

The channel between Glas eileanan and Sgeir nan Gobhar requires local knowledge.

Chart 3607.

Yule rocks, about 7 cables west-north-westward of Glas Eileanan light-structure, have a least depth of 4 feet (1^m2) over them, and are marked on their northern side by a red can buoy ; Lismore light-tower, bearing 125° and just open north-eastward of Glas Eileanan light-structure, leads north-eastward of these rocks. 5

The foul ground in the vicinity of Sgeir nan Gobhar, the dangers surrounding Glas Eileanan, and Yule rocks are covered by the *red* sector of Ardtornish light, between the bearings of 310° and 342° .

Between Rubha an Ridire and Ardtornish point the north-eastern shore of the sound is formed of basaltic cliffs, 700 feet (213^m4) high. Within these cliffs, about $1\frac{1}{2}$ miles north-eastward from Rubha an t-Sasunnaich, which is situated $6\frac{1}{2}$ cables eastward of Ardtornish point, is Glais bheinn, 1,567 feet (477^m6) high, the Table of Lorn, a remarkable plateau, 1,350 feet (411^m5) high, with vertical sides, being on its 15 eastern slope.

Ardtornish point (*Lat. $56^\circ 31' N.$, Long. $5^\circ 45' W.$*) is steep-to, and wooded on its southern slope. Ardtornish castle, a ruin, the highest part of which is 105 feet (32^m0) high, stands on the point.

A light is exhibited, at an elevation of 24 feet (7^m3), from a white 20 tower, 24 feet (7^m3) in height, situated on Ardtornish point.

Ban eileanan, situated close off the south-western shore of the sound, about $3\frac{1}{2}$ cables north-north-westward of Garmony point, a low shingly point about 2 miles west-north-westward of Scallastle point, are two islets, covered with grass, the south-eastern of which is 25 9 feet (2^m7) high, and the north-western 8 feet (2^m4). Garmony house stands about half a mile west-south-westward of Garmony point, close to a prominent belt of trees.

Avon rock, about $8\frac{1}{2}$ cables north-north-westward of Garmony point and about $3\frac{1}{2}$ cables offshore, has a least depth of $1\frac{1}{2}$ fathoms (2^m3) 30 over it, and is marked on its north-eastern side by a red can buoy ; a shoal, with a depth of $6\frac{1}{2}$ fathoms (11^m9) over it, lies about $1\frac{1}{2}$ cables south-eastward of Avon rock.

A shoal, with a depth of $2\frac{1}{2}$ fathoms (5^m0) over it, lies about $1\frac{1}{2}$ cables eastward of Rubha Leth Thorcaill, the extremity of a promontory 35 $7\frac{1}{2}$ cables north-westward of Ban eileanan ; a shoal bank extends about $1\frac{1}{2}$ cables offshore, between Ban eileanan and Ruhha Leth Thorcaill. Avon rock and the shoals in its vicinity are covered by the green sector of Ardtornish light, between the bearings of 057° and 095° .

Duart castle, bearing 131° and open north-eastward of Scallastle 40 point, leads north-eastward of Avon rock.

Rubha Letli Thorcaill rises at a short distance inland to a small peaked mound, 90 feet (27^m4) high, and farther inland to Cnoc an Teine, a conical hill, 215 feet (65^m5) high.

Chart 3608, plan of Loch Aline.

45

Bogha Lurcain, about one mile north-westward of Ardtornish point and about half a cable from Bolorkle point, the eastern entrance point of Loch Aline, dries ; a conspicuous war memorial cross, 30 feet (9^m1) in height, stands on the western entrance point of Loch Aline, about $2\frac{1}{2}$ cables north-westward of Bogha Lurcain. Lochaline pier is situated 50 $4\frac{1}{4}$ cables westward of Bogha Lurcain.

Loch Aline is described on page 291.

Chart 3607

Between Rubha Dearg, $6\frac{1}{2}$ cables westward of Lochaline pier, and

Chart 3607.

the entrance to Savary river, $1\frac{1}{2}$ miles west-north-westward, a vessel should not approach the northern shore within 2 cables.

The mouth of Savary river dries out about $1\frac{1}{2}$ cables ; Sgeir Savary, at the southern edge of this shoal, dries.

Between the entrance to Savary river and Eilean na Beithciche (*Lat. $56^{\circ} 33' N.$, Long. $5^{\circ} 52' W.$*), one mile west-north-westward, a bank, with depths of less than 5 fathoms ($9^{\text{m}}1$) over it, extends about $1\frac{1}{2}$ cables offshore. Eilean na Beithciche is grassy. A white house with a tower is situated about $2\frac{1}{2}$ cables north-north-eastward, and the manse, a two storeyed building almost obscured by trees, about $3\frac{1}{2}$ cables north-north-westward, of the north-western extremity of Eilean na Beithciche.

From Rubha Leth Thorcaill, the southern shore trends about one mile westward to Fishnish point. Fishnish bay, the head of which dries out about 2 cables, is entered between Fishnish point and Rubha na Leitreach, 9 cables westward.

Between Rubha na Leitreach and the entrance to Forsa river, $1\frac{1}{2}$ miles westward, a bank, with depths of less than 5 fathoms ($9^{\text{m}}1$) over it, extends as much as $1\frac{1}{2}$ cables offshore. A rock, which dries 9 feet ($2^{\text{m}}7$), lies about $2\frac{1}{2}$ cables north-westward of Rubha na Leitreach and half a cable offshore. Sgeir Ghlas, about 6 cables west-north-westward of Rubha na Leitreach and one cable offshore, dries 8 feet ($2^{\text{m}}4$).

From the mouth of Forsa river a bank of shingle extends about 3 cables offshore. Pennygown, a group of farm buildings, is situated 3 cables southward of the entrance to this river, and Glenforsa house stands about $4\frac{1}{2}$ cables south-westward of the entrance.

Fiunary rocks, about 4 cables westward of Eilean na Beithciche, extend about $3\frac{1}{2}$ cables offshore, in the entrance to Camas Shalachain ; some of these rocks dry. The south-western side of Fiunary rocks is marked by a black conical buoy. Camas Shalachain, a bight on the northern shore, immediately westward of Eilean na Beithciche, dries out about one cable, fitted with a radar reflector. Clach na Criche or Wishing stone, about $2\frac{1}{2}$ cables west-north-westward of the western entrance point of Camas Shalachain, is a grey stone, about 40 feet ($12^{\text{m}}2$) high, with a small archway through it, which is visible from east-south-eastward and west-north-westward.

Charts 3607, 3718.

Eileanan Glasa, the northernmost of which is Dearn sgeir, are a group of grass-covered rocks lying in the fairway of the sound ; the largest of these rocks is about 45 feet ($13^{\text{m}}7$) high ; this group is steep-to on its north-eastern side.

A light is exhibited, at an elevation of 23 feet ($7^{\text{m}}0$), from a white beacon, 26 feet ($7^{\text{m}}9$) in height, situated on Dearn sgeir, the northernmost rock of Eileanan Glasa.

Several shoals are situated between Eileanan Glasa and Rubha Mòr, one mile south-westward ; this channel should not be used without local knowledge.

Rubha Mòr has several houses on it. Two piers from Rubha Mòr (*Lat. $56^{\circ} 31' N.$, Long. $5^{\circ} 56' W.$*), one north-eastward and the other north-westward. The latter was in ruins in 1949.

Bogha, about $4\frac{1}{2}$ cables east-north-eastward of Rubha Mòr, is awash, and a black conical buoy marks its southern side.

Charts 3607, 3718.

A patch of white cliff on the western shore of Salen bay, about $7\frac{1}{2}$ cables westward of Rubha Mòr, bearing 277° and just open northward of Rubha Mòr, leads southward of Bogha, in a depth of 3 fathoms ($5^{\text{m}}5$) ; this leading mark requires local knowledge, as it leads into shoal water both off the mouth of Forsa river and off Rubha Mòr. The north-western pier-head at Rubha Mòr in line with the Free church belfry at Salen, $5\frac{1}{2}$ cables south-westward, bearing 212° , leads close north-westward of the shoals between Rubha Mòr and Eileanan Glas, and close south-eastward of a rocky patch about $4\frac{1}{2}$ cables north-north eastward of Rubha Mòr.

Central part of Sound of Mull.—Islets and dangers.—Buoys.—
Salen bay is entered between Rubha Mòr and a point about $8\frac{1}{2}$ cables west-north-westward. Several rocks, which dry, fringe the head of this bay ; Antelope rock, about $1\frac{1}{2}$ cables west-north-westward of Rubha Mòr, has a least depth of 4 feet ($1^{\text{m}}2$) over it, and is marked on its north-eastern side by a red can buoy. Maid of Lorne rocks, about $3\frac{1}{2}$ cables westward of Rubha Mòr and about 2 cables offshore, have depths of less than 6 feet ($1^{\text{m}}8$) over them. A rock, with a depth of $2\frac{1}{2}$ fathoms ($4^{\text{m}}1$), rock, over it, lies about 5 cables westward of Rubha Mòr and about $1\frac{3}{4}$ cables offshore.

Chart 3718.

The ruins of Aros castle are situated on a point on the south-western shore, about 9 cables west-north-westward of Rubha Mòr ; close west-north-westward of the castle is Aros Mains, a group of white 25 houses.

Rubha Ard Ealasaid is a salient point about $2\frac{3}{4}$ cables north-north-eastward of Aros castle. Aros lodge, a white house, is situated on Rubha Ard Ealasaid ; on the northern side of Rubha Ard Ealasaid is a stone pier, which dries, and is available for boats.

Between Rubha Ard Ealasaid and Arla point, $1\frac{1}{2}$ miles north-north-westward, there are no dangers beyond about $1\frac{1}{2}$ cables offshore. Arla rock, about $2\frac{1}{4}$ cables northward of Arla point, dries 8 feet ($2^{\text{m}}4$).

Charts 3607, 3718.

Caisteal nan Con, in ruins, stands on a point on the north-eastern shore, $1\frac{1}{2}$ miles north-westward of the western entrance point of Camas Shalachain, and is conspicuous. About one cable eastward of Caisteal nan Con is a large brown shed with a galvanized iron roof, and close north-westward of this shed stands a brown hut. A shoal, with a least depth of $6\frac{1}{2}$ fathoms ($12^{\text{m}}3$) over it, lies $4\frac{1}{2}$ cables westward ; a shoal, 40 with a depth of $3\frac{1}{2}$ fathoms ($6^{\text{m}}4$) over it, lies $1\frac{1}{2}$ cables westward, and Sgeir Con, with a least depth of $1\frac{1}{2}$ fathoms ($2^{\text{m}}3$) over it, lies 2 cables west-north-westward of Caisteal nan Con (*Lat. $56^{\circ} 34' N.$, Long. $5^{\circ} 56' W.$*).

Chart 3718.

Between Caisteal nan Con and Dun Bàn, $1\frac{1}{2}$ miles north-westward, a bank, with depths of from $2\frac{1}{2}$ to 10 fathoms ($4^{\text{m}}6$ to $18^{\text{m}}3$) over it, extends, in places, as much as $3\frac{1}{2}$ cables offshore. The outer shoal on this bank, about $6\frac{1}{2}$ cables south-south-eastward of Dun Bàn, has a least depth of 4 fathoms ($7^{\text{m}}3$), rock, over it.

The eastern fall of Druim Nead an Fhircin, a hill, 276 feet ($84^{\text{m}}1$) high, lying $5\frac{1}{2}$ miles north-north-westward of Arla point, in line with Beinn nan Ord, bearing 316° , leads south-westward of all the shoals lying between Caisteal nan Con and Dun Bàn, except that with a

Chart 3718.

depth of $6\frac{1}{2}$ fathoms ($12^{\text{m}}3$) over it, $4\frac{1}{2}$ cables westward of Caisteal nan Con. Beinn nan Ord, a conical hill, lies close north-westward of Beinn na Seilg (page 286). See view on chart 3718.

5 Killundine river flows into the sound about $5\frac{1}{2}$ cables south-eastward of Dun Bàn, and a shoal of shingle extends about one cable offshore at its mouth. Killundine house, on the slopes of the hills about $5\frac{1}{2}$ cables south-eastward of the mouth of the river, is a two-storeyed building. A boathouse, with a rusty galvanised iron roof, stands on 10 the north-western side of the entrance to the river.

Between Dun Bàn and Bonnavoulin, a small village with a conspicuous row of white cottages, $1\frac{1}{2}$ miles north-north-westward, there are many rocks and shoals, extending, in places, about 3 cables offshore. Bogha Bhuiig, the outer rock of which dries, is situated about $1\frac{1}{2}$ miles 15 north-north-westward of Dun Bàn and $1\frac{1}{2}$ cables offshore. A bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extends about one cable north-westward from Bogha Bhuiig, and is marked near its western edge by a black conical buoy; a bank, with depths of less than 5 fathoms ($9^{\text{m}}1$) over it, extends about $1\frac{1}{2}$ cables southward and about 20 three-quarters of a cable westward from this buoy.

Big Stirk (page 285), bearing 335° and just open westward of Rubh' an Dùin Bhàin, a salient point 9 cables north-westward of Bonnavoulin, leads south-westward of all the shoals between Dun Bàn and Bonnavoulin (*Lat. $56^{\circ} 37' N.$, Long. $5^{\circ} 59' W.$*). See view B on chart 25 3718.

Glenmoryen cottage, which is two-storeyed and conspicuous, stands close to the shore, $5\frac{1}{2}$ cables north-north-westward of Dun Bàn.

Rubh' an t-Sean Chaisteil, a promontory on the south-western shore about one mile north-north-westward of Arla point, is grassy 30 and attains an elevation of about 50 feet ($15^{\text{m}}2$); it is faced by low cliffs, and is almost steep-to. Ardnacross, $5\frac{1}{2}$ cables south-south-westward of Rubh' an t-Sean Chaisteil, is a farm house, and about $3\frac{1}{2}$ cables north-north-eastward of Ardnacross the ruins of an old castle stand close to the shore.

35 A shoal, with a depth of 3 fathoms ($5^{\text{m}}5$) over it, lies close eastward of Rubh' an t-Sean Chaisteil.

Between Rubh' an t-Sean Chaisteil and the south-eastern extremity of Calve island, $2\frac{1}{2}$ miles north-westward, the shore is almost steep-to, and is backed by steep wooded cliffs. A shoal, with a depth of $4\frac{1}{2}$ 40 fathoms ($8^{\text{m}}2$) over it, is situated $5\frac{1}{2}$ cables south-south-eastward of the south-eastern extremity of Calve island and about three-quarters of a cable offshore.

Chart 1836.

Calve island is 68 feet ($20^{\text{m}}7$) high at its southern end. Two rocks, 45 lying close off the eastern side of the island, about $2\frac{1}{2}$ and $5\frac{1}{2}$ cables northward of its south-eastern extremity, respectively, dry 3 and 5 feet ($0^{\text{m}}9$ and $1^{\text{m}}5$); the latter is called Sgeir Calve. Bodach a' Chailbhe, about $7\frac{1}{2}$ cables north-north-westward of the south-eastern extremity of the island, is an isolated pillar, 28 feet ($8^{\text{m}}5$) high, connected with 50 the north-eastern coast of Calve island, and shows up when open north-eastward of the island. Eilean na Beithe, 34 feet ($10^{\text{m}}4$) high, lies close off the western side of Calve island. A shallow hight, Acairseid Mhòr, separates it from the north-western side of the island. Eilean Dheanish, close westward of the north-western extremity of Eilean

Chart 1836.

na Beithe, to which it is joined by a reef that dries, is 7 feet (2^m1) high.

Tobermory harbour is described on page 293.

Chart 3718.

Between Bonnavoulin and Rubh' an Duin Bhàin, a bank, with 5 depths of less than 5 fathoms (9^m1) over it, extends in places about $1\frac{1}{2}$ cables offshore. A rock, which dries 2 feet (0^m6), lies $3\frac{1}{2}$ cables west-north-westward of Bonnavoulin and about half a cable offshore.

Rubh' an Duin Bhàin is a small peninsula.

Between Rubh' an Duin Bhàin and Auliston point, $1\frac{1}{4}$ miles north-¹⁰ ward, foul ground extends, in places, about $1\frac{1}{2}$ cables offshore. Sgeir Chorrach, about $9\frac{1}{2}$ cables northward of Rubh' an Duin Bhàin and about three-quarters of a cable offshore, is 5 feet (1^m5) high.

From Auliston point (*Lat. $56^{\circ} 39' N.$, Long. $6^{\circ} 00' W.$*), the north-western extremity of Morvern peninsula, foul ground extends about ¹⁵ one cable north-westward.

Local magnetic anomaly.—A local magnetic anomaly was reported, in 1951, in the sound, as indicated on the chart, between lat. $56^{\circ} 34' N.$ and lat. $56^{\circ} 36' N.$, increasing the normal magnetic variation by amounts up to 6° .²⁰

North-western part of Sound of Mull.—Islets and dangers.—Light.—Light-buoy.—Between Rubha nan Gall, on which there is a light-tower, on the south-western side of the sound, and Rubha na Seallbhaig, 2 miles west-north-westward, there are no dangers beyond three-quarters of a cable offshore. Rubha nan Gall is a flat rock, 25 lying on the coastal reef, about a quarter of a cable offshore, and is steep-to on its north-eastern side. Sgeir Sgreabach, about $3\frac{1}{2}$ cables westward of Rubha nan Gall and about half a cable offshore, dries 4 feet (1^m2).

A light is exhibited, at an elevation of 55 feet (16^m8), from a white tower, 63 feet (19^m2) in height, situated on Ruhha nan Gall.³⁰

The coast between Rubha nan Gall and Rubha nan Seallbhaig rises to steep high braes.

Between Rubha na Seallbhaig and Ardmore point (page 278), the shore is steep-to.³⁵

Little Stirk, about $8\frac{1}{2}$ cables west-south-westward of Auliston point, dries 10 feet (3^m0) ; a shoal, with a depth of 2 fathoms (3^m7) over it, lies three-quarters of a cable southward of Little Stirk. Big Stirk, $1\frac{1}{2}$ cables northward of Little Stirk, is one foot (0^m3) high.

There is a deep channel, with a least width of $2\frac{1}{2}$ cables, between ⁴⁰ Stirk rocks and the shore southward of Auliston point.

Red rocks, about one mile west-north-westward of Auliston point, are three rocks, close together, one of which dries 8 feet (2^m4). A shoal, with a depth of $2\frac{1}{2}$ fathoms (4^m1) over it, lies about one cable north-north-eastward ; a shoal, with a depth of $3\frac{1}{2}$ fathoms (5^m9) over it, about 2 cables west-north-westward ; and a shoal, with a depth of 5 fathoms (9^m1) over it, about $4\frac{1}{2}$ cables north-north-westward of Red rocks.⁴⁵

New rocks, about 9 cables north-north-eastward of Rubha nan Gall, have a least depth of 3 feet (0^m9) over them, and are marked at their southern end by a conical light-buoy, painted black, fitted with a radar reflector, and exhibiting a *white flashing light every six seconds*.

On the same bank as Stirk, Red, and New rocks there are numerous rocks and shoals ; the kelp on the rocks having depths of less than

Chart 3718.

6 feet (1^m8) over them, shows at low water. No vessel should attempt to pass between the rocks in this area.

The eastern extremity of Rubha na Leip, a promontory, 276 feet (84 $m1$) high, immediately southward of Rubha nan Gall, in line with Aros waterfall, $4\frac{1}{2}$ miles southward of the summit of Rubha na Leip, bearing 168°, leads westward of New rocks (see view D on chart 3718). Creag nan Sgarbh, the north-western extremity of Oronsay (page 297), in line with the 127-foot (38 $m7$) peak of Risga, an islet $1\frac{1}{2}$ miles farther eastward, bearing 083°, leads northward of Red rocks and the shoals in their vicinity, but it should be noted that the shoal, with a depth of 5 fathoms (9 $m1$) over it, $4\frac{1}{2}$ cables north-north-westward of Red rocks, lies about one cable northward of this leading line. See view C on chart 3718 and view facing this page.

15 The summit, 164 feet (50 $m0$) high, near the western side of Oronsay in line with Crnachan Charna, the southern of two summits, each 546 feet (166 $m4$) high, on Carna (page 297), bearing 090°, leads about $3\frac{1}{2}$ cables northward of Ardmore point, about $1\frac{1}{2}$ cables southward of the 5-fathom (9 $m1$) shoal mentioned above and about one cable northward of the patch, with a depth of $2\frac{1}{2}$ fathoms (4 $m1$) over it, about $1\frac{1}{4}$ cables north-north-eastward of Red rocks. See view facing this page.

Macparlin rock, about 2 miles north-north-eastward of Rubha nan Gall light-tower (*Lat. 56° 38' N., Long. 6° 01' W.*) and about $8\frac{1}{2}$ cables south-westward of Maclean's nose, a point on the southern side of 25 Ardnairchian peninsula, has a least depth of $3\frac{1}{2}$ fathoms (6 $m9$) over it; it lies near the western edge of a bank, with depths of from 13 to 20 fathoms (23 $m8$ to 36 $m6$) over it.

The green sector of Rubha nan Gall light, between the bearings of 161° and 266°, covers Stirk, Red, New, and Macparlin rocks.

30 Maclean's nose is a steep rocky point, whence the land rises in rugged steps to Beinn Hiant (page 279), one mile north-north-eastward.

Mingary bay is entered between Maclean's nose and Rubha Aird an Iasgaich, 2 miles west-north-westward. Mingary castle, in ruins, lies close to the shore $1\frac{1}{2}$ miles west-north-westward of Maclean's nose; 35 the castle consists of an irregular and extensive pile of buildings, the front of which forms the continuation of a vertical rock, and is conspicuous.

Mingary rock, about $5\frac{1}{2}$ cables eastward of Rubha Aird an Iasgaich and about $2\frac{1}{2}$ cables from a small rocky promontory, 8 feet (2 $m4$) high, 40 jutting into the head of the bay, has a least depth of 4 fathoms (7 $m3$) over it.

Kilchoan bay is entered between Rubha Aird an Iasgaich and Sròn Bheag, a high steep rocky point, $1\frac{1}{4}$ miles westward; the dangers in this bay are described on page 295.

45 Within Sròn Bheag the land rises irregularly to a considerable height, culminating in Beinn na Seilg 1,117 feet (340 $m5$) high about one mile north-north-westward.

Chart 2832.

About 2 miles south-westward of Sròn Bheag is a fishing hank, with 50 depths of from 10 to 20 fathoms (18 $m3$ to 36 $m6$) over it; in stormy weather it is desirable to avoid it, as the sea in its vicinity is heavy and confused.

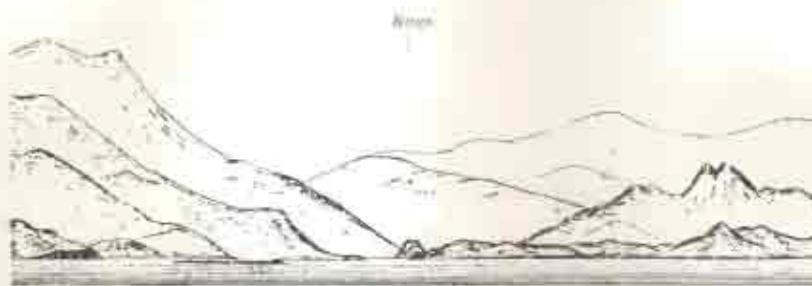
Between Sròn Bheag and Eilean nan Seachd Seisrichcan, $2\frac{1}{4}$ miles west-north-westward, the shore is almost steep-to, but close northward



Skerryvore lighthouse.
(Original date 1930.)



Ardnamurchan
lighthouse.
(Original date 1930.)



Creag nan Scarrb in line with the 127-foot summit of Riaga,
bearing 083°, or the 164-foot summit near the western side
of Oronsay, in line with Cruachan Charna, bearing 090°.

(Original date 1933.)

Chart 2832.

of the point $1\frac{1}{2}$ miles west-north-westward of Sron Beag a bank on which there is a rock, with a depth of less than 6 feet (1^m8) over it, extends about $1\frac{1}{2}$ cables westward. Eilean nan Seachd Seisrichean is bare, rocky and steep-to on its south-western side ; it is separated from Ardnamurchan peninsular by a narrow channel. Port Choinnich is a creek close northward of Eilean nan Seachd Seisrichean.

A bank, with a least depth of 9 fathoms (16^m5) over it, is situated about $2\frac{1}{2}$ miles west-north-westward of Eilean nan Seachd Seisrichean ; the sea breaks over this bank in stormy weather, when it should be avoided.

Chart 2507.

Between Eilean nan Seachd Seisrichean and Point of Ardnamurchan (*Lat. $56^{\circ} 44' N.$, Long. $6^{\circ} 13' W.$*), about 2 miles north-north-westward, the coast is steep-to, bold and rocky.

15

Point of Ardnamurchan is a rugged mountainous promontory ; the lighthouse on the point is surrounded by a high white wall, over which the chimneys of the dwelling houses within are just visible.

A light is exhibited, at an elevation of 180 feet (54^m9), from a grey granite tower, 118 feet (36^m0) in height, on Point of Ardnamurchan.

See view facing page 286.

A fog signal is sounded from the lighthouse.

Coastguard.—There is a coastguard station at Point of Ardnamurchan. *See page 10.*

25

Off-lying bank.—*See page 477.*

Charts 3607, 3718.

Tidal streams.—In the Sound of Mull and its approaches the tidal streams run generally in the direction of the fairway ; in the description below these streams are referred to as south-east-going and north-west-going throughout, though the true directions are more nearly eastward and westward in the north-western approach, and northward and southward in the south-eastern approach.

The times at which the streams begin become later, and their rates increase, through the sound from north-westward to south-eastward, but whereas the time at which the south-east-going stream begins is only about $1\frac{1}{2}$ hours later in the south-eastern approach than in the north-western approach, the corresponding difference between the times at which the north-west-going streams begin is about 4 hours. This variation occurs because in the north-western approach the south-east-going stream runs for about 5 hours only, and the north-west-going stream for about $7\frac{1}{2}$ hours, whereas in the south-eastern approach the south-east-going stream runs for about $7\frac{1}{2}$ hours and the north-west-going stream for about $5\frac{1}{4}$ hours only.

The times at which the streams begin, and their spring rates are shown, with their mean directions, in the table below ; the positions of the stations in the table are :

- Station (a) : in the north-western approach $10\cdot4$ cables 352° from Ardmore point.
- " (b) : in mid-channel in the northern part of the Sound, off Calve island and 5 cables 092° from Sgeir Calve.
- " (c) : in mid-channel in the northern channel in the middle part of the Sound, 4 cables 018° from Eileanan Glasa light-structure.

Charts 2155, 2515, 3674, 2635.

Charts 3607, 3718.

- " (d): in mid-channel in the northern channel at the south-eastern end of the Sound, 3 cables 046° from Glas Eileanan light-structure.
 5 " (e): off Duart point in the south-eastern approach, 11 cables 285° from Lismore light-tower.

Note.—The letters in brackets are only for reference between the table and the chart and have no other significance.

In the table the unbracketed time intervals refer to high water at 10 Oban ; the bracketed time intervals refer to high water at Dover.

Station	SE. going stream begins	Mean Direction	Sp. rate	NW. going stream begins	Mean Direction	Sp. rate
(a)	—0200 (+0455)	081	0·3	+0300 (—0230)	264	0·2
(b)	—0030 (—0600)	160	1·0	+0430 (—0100)	349	0·8
(c)	—0100 (+0555)	128	0·6	+0600 (+0030)	307	0·7
(d)	—0300 (—0600)	135	1·8	+0610 (+0045)	315	1·8
(e)	—0020 (—0550)	155	2·1	+0530 (+0125)	345	3·0

At all stations the streams are more or less rotatory or their directions are irregular. At station (a) (*Lat. $56^{\circ} 40' N.$, Long. $6^{\circ} 08' W.$*) the south-east-going stream is rotatory and changes direction from about 045° to about 110° ; the north-west-going stream is irregular, 15 with directions varying between about 250° and 295° . At station (b) the south-east-going stream begins in a direction about 140° , but changes rather quickly to about 185° , and then slowly back to 140° ; the north-west-going stream is rather irregular, with directions varying between about 330° and 355° . At station (c) the streams in both 20 directions are rather irregular; the south-east-going stream varies in direction between about 110° and 145° ; the north-west-going stream varies in direction between about 300° and 330° . At station (d) the streams are more regular, but the south-east-going stream varies in directions between 120° and 140° , and the north-west-going stream 25 varies in direction between about 300° and 320° . At station (e) (see page 220) the stream is more or less rotatory; at springs the south-east-going stream runs in directions changing from about 140° to 170° , the north-west-going stream runs in directions changing from about 330° to 360° .

30 The south-east-going and north-west-going streams meet:
 About —0200 Oban (+0455 Dover) : between Ardmore point and Sròn Bheag.

Between about —0100 and —0030 Oban (+0555 and —0600 Dover) : 35 in the Sound between about Rubha nan Gall and Rubha an Ridire ; for all practical purposes the stream may be considered slack through the whole length of the Sound between these times.

The south-east-going and north-west-going streams separate:
 About +0300 Oban (—0230 Dover) : between Ardmore point and Sròn Bheag.

Charts 3607, 3718.

About +0400 Oban (-0130 Dover) : north-eastward of Rubha nan Gall.

About +0500 Oban (-0030 Dover) : off Rubh' an t-Sean Chaisteil.

About +0600 Oban (+0030 Dover) : off Eileanan Glas.

About -0600 Oban (-0055 Dover) : off Rubha an Ridire.

In the channels southward of Glas Eileanan and Eileanan Glas the streams run about as in the northern channels.

Inshore on both sides of the sound the streams begin about half an hour earlier than in mid-channel ; the streams run fairly strongly off ¹⁰ the salient points on both sides and there may be ripples or overfalls especially off Rubha nan Gall, Rubh' an t-Sean Chaisteil and Ardtornish point : in the bays between the points the streams are weak and there may be eddies.

In the south-eastern entrance, where the streams are fairly strong, ¹⁵ there are overfalls off Scallastle point and Sgeir nan Gobhar, Glas eileanan and Yule rocks, and Rubha an Ridire and Eilean Rubha an Ridire ; there are eddies in Scallastle bay and Inuinmore bay during the north-west-going stream, and south-eastward of Glas eileanan during the south-east-going stream ; there are probably also eddies ²⁰ between Glas eileanan and Yule rocks during the north-west-going stream.

Along the coast between Scallastle point and Duart point (*Lat. 56° 27' N., Long. 5° 39' W.*) the south-east-going stream, spring rate about 2 knots, begins -0025 Oban (-0555 Dover) ; the north- ²⁵ west-going stream, spring rate about 2.5 knots, begins -0550 Oban (+0105 Dover). In Craignure bay there are probably eddies during the streams in both directions ; in Duart bay the stream probably runs nearly continuously eastward towards Duart point. *See also* ³⁰ page 220.

Off the coast between Maclean's nose and Point of Ardnamurchan information regarding the streams is not available, but they are certainly weak nearly out to Point of Ardnamurchan, and probably imperceptible in Mingary bay and Kilchoan bay.

In the entrance to Loch Sunart (*see* page 296), the east-going stream ³⁵ begins -0500 Oban (+0155 Dover), the west-going stream begins +0130 Oban (-0400 Dover) ; the spring rates are from 0.4 to 0.5 knot.

Off Point of Ardnamurchan the north-going stream begins -0525 Oban (+0130 Dover), the south-going stream begins +0100 Oban ⁴⁰ (-0430 Dover) ; the spring rates are about 1.5 knots.

Some information regarding the streams off the coast may possibly be obtained by interpolating between these times and rates, but it is probable that along the coast south-eastward of Point of Ardnamurchan as far as Eilean nan Seachd Seisrichean, the streams begin ⁴⁵ at the same time as off the point.

Chart 3607.

Anchorage in south-eastern approach.—Beacons.—Duart bay is entered between Duart point and Rubh' a' Ghuirmein ; it is unsuitable for anchorage, as there is deep water very close to the low water ⁵⁰ line.

In case of necessity anchorage could be obtained with the northern extremity of Duart point in line with the south-western point of Eilean Musdile (page 221), bearing 094°, and the salient point on the western

Chart 3607.

side of this bay, $2\frac{1}{2}$ cables southward of the northern extremity of Rubh' a' Ghuirmein, in line with Torosay castle, which is situated amongst trees $2\frac{1}{2}$ cables from this salient point, bearing 248° , in a depth of 13 fathoms ($23^{\text{m}}8$).

A small stone pier is situated on the western side of Duart point ; this pier, which is available for boats, is marked at its outer end by an iron perch. A pier is situated on the western side of Duart bay, $1\frac{1}{2}$ cables southward of Rubh' a' Ghuirmein ; there is a boathouse 10 almost surrounded by trees at the inner end of the pier.

A rock, which dries 2 feet ($0^{\text{m}}6$), is situated about half a cable north-north-eastward of the pier-head ; a rock, with a depth of 5 feet ($1^{\text{m}}5$) over it, lies a quarter of a cable farther eastward.

Temporary anchorage can be obtained on the bank lying north-15 eastward of the coast between Rubh' a' Ghuirmein and Rubha na Sròine (page 280), but not less than a quarter of a mile offshore.

Craignure bay is entered between Rubha na Sròine and Java point, 6 cables north-westward ; it affords shelter from winds from south, through west, to north-west. The best anchorage for small vessels is 20 with Ruhha na Sròine in line with Lismore lighthouse, bearing about 107° , in a depth of 5 fathoms ($9^{\text{m}}1$), sand. Anchorage for larger vessels can be obtained with Duart castle, bearing 124° , and open north-eastward of Rubha na Sròine, and the Free church manse, a two-storeyed house situated 3 cables southward of Java point, bearing 25 250° , in a depth of 13 fathoms ($23^{\text{m}}8$).

Vessels plying between Oban and Tobermory call regularly at Craignure. Small quantities of provisions can be obtained here.

At the southern end of Craignure bay, about $1\frac{1}{2}$ cables west-south-westward of Rubha na Sròine, is a stone pier, on the south-western 30 side of which small vessels can lie in a depth of 10 feet ($3^{\text{m}}0$) at high water ; a white flagstaff stands on the head of this pier. A church, with a belfry, is situated about $1\frac{1}{2}$ cables south-south-westward of the pier-head, and there is a white inn in this vicinity. Java lodge, on the north-western side of Craignure bay, about 2 cables west-north-west-35 ward of Java point, is a grey stone building, partly obscured by trees from eastward.

Temporary anchorage can be obtained on the bank southward of Glas eileanan (*Lat. $56^\circ 30' N.$, Long. $5^\circ 43' W.$*), with the cottage situated on the shore of Inninmore bay, one mile north-north-westward 40 of Rubha an Ridire, bearing not more than 022° and well open eastward of Glas eileanan, in depths of from 12 to 14 fathoms ($21^{\text{m}}9$ to $25^{\text{m}}6$).

Scallastle bay.—Scallastle bay is entered between Scallastle point and Garmony point, about 2 miles west-north-westward.

A small golf pavilion is situated about 4 cables south-westward of 45 Scallastle point ; Scallastle farm is situated about $2\frac{1}{2}$ cables west-south-westward of the golf pavilion, and a school house, a small dark green building with a red roof, stands on the southern shore of the bay, about $4\frac{1}{2}$ cables north-westward of Scallastle farm.

The dangers on the eastern side of the entrance to Scallastle bay 50 are described on page 280 ; in addition a shoal, with a least depth of 2 fathoms ($3^{\text{m}}7$) over it, lies about $5\frac{1}{4}$ cables westward of Scallastle point and about $2\frac{1}{2}$ cables offshore.

There are several shoals in the north-western part of Scallastle bay. Anchorage can be obtained in Scallastle bay with the southern

Chart 3607.

extremity of Rubha an Ridire bearing 082° and open northward of Sgeir nan Gobhar and the school house, described above, bearing 183°, in a depth of 9 fathoms (16^m5), good holding ground.

Inninmore bay, entered between Rubha an Ridire and Rubha 5 an t-Sasunnaich, affords anchorage during offshore winds.

Ardtornish bay.—Dangers.—Anchorage.—Ardtornish bay is entered between Rubha an t-Sasunnaich and Ardtornish point, 7 cables westward. Inninbeg cottage stands close to the shore at the head of the bay. 10

A spit, on the western edge of which there is a rock, with a depth of 5 feet (1^m5) over it, extends 1½ cables westward from Rubha an t-Sasunnaich.

Shoals, with depths of 4½ and 5 fathoms (8^m2 and 9^m1) over them, lie about 2 and 3 cables west-north-westward, respectively, of Rubha 15 an t-Sasunnaich.

Anchorage can be obtained, during offshore winds, with Inninbeg cottage bearing 343°, and Ardtornish point, 249°, in a depth of 7 fathoms (12^m8).

A small pier, with a least depth of 2 feet (0^m6) alongside, is situated 20 about 3 cables northward of the light-tower on Ardtornish point (*Lat.* 56° 31' *N.*, *Long.* 5° 45' *W.*).

Chart 3608, plan of Loch Aline.

Loch Aline.—Dangers.—Beacons.—Loch Aline is entered between Bolorkle point, about one mile north-westward of Ardtornish point, 25 and a point about 2½ cables westward; within the bar, which has a least depth of 9 feet (2^m7) over it, it is deep and free from dangers in the fairway; the head of the loch dries out about 4½ cables.

The village of Lochaline, where small quantities of provisions can be obtained, stands on the western side of the entrance to the loch, and 30 there is a row of cottages on the brae above. A two storeyed white house stands on the western side of the entrance, about one cable north-eastward of the war memorial cross (page 281), and is conspicuous. A small church with a belfry, stands on the hillside, about 2¾ cables north-north-westward of the conspicuous white house. 35 Ardtornish Towers, a large house situated on the eastern side of the head of the loch, has a lofty square clock tower, and is conspicuous. The remains of Kinlochaline castle are situated on the western side of the head of the loch.

Rannoch river and River Aline flow into the loch, on the eastern 40 and western sides of its head, respectively; both rivers are crossed by bridges near their mouths.

Two white leading beacons, which stand on the western shore about 3½ and 4½ cables north-north-eastward, respectively, of the war memorial cross, in line bearing 356°, lead about half a cable westward 45 of Bogha Lurcain, situated about half a cable south-south-westward of Bolorkle point and across the southern and central portions of the bar in a least depth of 12 feet (3^m7).

Sgeir nam Balg, which dries 7 feet (2^m1) and is marked by a beacon, lies about one cable off the eastern shore and 9½ cables north-north- 50 eastward of Bolorkle point. Sgeirean nan Ròn, marked by a beacon, lies one cable off the western shore and about 1½ miles north-north-eastward of the war memorial cross.

A ferry plies across the entrance of the loch.

Chart 3608, plan of Loch Aline.

Vessels plying between Oban and Tobermory call regularly at Loch Aline.

Piers.—Lochaline pier is situated 2½ cables west-south-westward of the war memorial cross, and had, in 1937, a least depth of 15 feet (4^m6) alongside. There is a post and telegraph office at the inner end of this pier.

A stone pier, with a depth of 4 feet (1^m2) alongside, is situated close northward of the conspicuous white house.

10 Tidal streams.—In the entrance to Loch Aline the in-going stream begins about —0525 Oban (+0130 Dover), the out-going stream begins about +0040 Oban (—0450 Dover); the spring rate in each direction is about 2·5 knots.

There is little stream in the loch.

15 Directions.—Anchorage.—A vessel entering Loch Aline should keep the leading beacons in line, bearing 356°, which leads about half a cable westward of Bogha Lurcain and across the southern portion of the bar, in a least depth of 12 feet (3^m7). She should then keep in mid-channel, and having crossed the bar bear eastward, and anchor 20 off the eastern shore, in depths of from 8 to 10 fathoms (14^m6 to 18^m3).

Small vessels generally anchor off the western shore, a position more convenient for communication with the village.

Chart 3607.

Anchorage between Loch Aline and Bonnavoulin.—Between 25 Rubha Dearn (*Lat. 56° 32' N., Long. 6° 48' W.*) and Eilean na Beithiche (page 282), a bank, with depths of less than 10 fathoms (18^m3) over it, extends about 2 cables offshore, on which vessels can obtain temporary anchorage, not less than 2 cables offshore, in depths of from 13 to 16 fathoms (23^m8 to 29^m3).

30 Chart 3718.

Temporary anchorage can be obtained off Bonnavoulin with the western end of the row of white cottages bearing 070° and Rubh' an Dhin Bhain bearing 334°. The dangers in the southern approach to this anchorage are described on page 284.

35 Port nam Freumh, close northward of Bonnavoulin village, has a small pier on its north-western side, with a depth of 8 feet (2^m4) alongside it at high water springs. Vessels plying between Oban and Tobermory call here regularly.

Chart 3607.

40 Fishnish bay.—Fishnish bay (page 282), on the southern side of the Sound, is entered between Fishnish point and Rubha na Leitreach.

A farmhouse, with a high barn about a quarter of a cable westward of it, stands near the head of the bay, and Corrynachenchy, a white building, is situated on the hillside 3½ cables west-south-westward 45 of the farmhouse.

Anchorage can be obtained with Fishnish point in line with Lochaline pier, bearing 055°, and the farmhouse near the head of the bay bearing 155°, in a depth of 16 fathoms (29^m3).

Small vessels can anchor a little closer in, but the 5-fathom (9^m1) 50 and 3-fathom (5^m5) lines lie very close together.

Charts 3607, 3718.

Salen bay.—Salen bay (page 283) is shallow and encumbered with dangers; it is only suitable for small vessels with local knowledge. A considerable swell is felt here with north-westerly and northerly gales.

Charts 3607, 3718.

The tidal streams in this bay are weak.

The principal dangers in Salen bay, also those in the approach from south-eastward, are described on page 283.

Anchorage can be obtained westward of a line joining the western pier-head at Rubha Mòr and the Free church, in depths of from 10 to 14 fathoms (18^m3 to 25^m6), but large vessels should not swing southward of a line joining Rubha Mòr (*Lat. 56° 31' N., Long. 5° 56' W.*) and Glenforsa house.

Chart 3718.

There is well-sheltered anchorage for large vessels, in depths of from 15 to 18 fathoms (27^m4 to 32^m9), good holding ground of thick mud, northward of a line joining Eileanan Glasa and Aros castle.

Small vessels can anchor off Aros castle, in a depth of 6 fathoms (11^m0), good holding ground, but the depths in this part of the bay, 15 farther inshore, decrease rapidly.

Charts 3607, 3718.

Salen.—Salen is a straggling village at the head of Salen bay.

The western pier at Rubha Mòr is in ruins, but the eastern pier has a least depth of 15 feet (4^m6) at its head.

There is a post and telegraph office here, and vessels plying between Oban and Tobermory call regularly.

Small quantities of provisions can be obtained at Salen, and water is laid on to the pier.

Chart 3718.

Anchorage northward of Arla point.—Temporary anchorage can be obtained in the bight between Arla point (page 283) and Ruhh' a Ghlaich, 7 cables north-north-westward, with the Free church at Salen bearing 164° and just open eastward of Rubha Ard Ealasaid, in depths of from about 10 to 15 fathoms (18^m3 to 27^m4).

Vessels anchoring in this bight should take care to avoid Arla rock and the coastal reef in this vicinity (*see* page 283).

Chart 1836.

Tobermory harbour.—**Light.**—Tobermory harbour lies between the eastern side of Mull and the western side of Calve island (page 284), 35 and affords safe anchorage. The principal entrance, north-westward of Calve island, is about 3½ cables wide; both these entrance points are steep-to within about half a cable.

Dòirlinn a' Chailbhe, the south-eastern entrance to the harbour, is convenient for small vessels near high water, as during a south-westerly gale, when squalls are frequent and strong, there is difficulty in making the anchorage through the northern entrance.

Dòirlinn a' Chailbhe, which has a least width of about half a cable, dries. At high water springs it has a depth of about 13 feet (4^m0). A rock, which dries 9 feet (2^m7), is situated on the south-western side 45 of the channel, just within the south-eastern entrance, and another rock, which dries 9 feet (2^m7), lies close offshore, on the north-eastern side of the channel, about a quarter of a cable north-north-westward of the first rock.

The south-western entrance point at the north-western end of 50 Dòirlinn a' Chailbhe (*Lat. 56° 37' N., Long. 6° 03' W.*) in line with the Free church spire, 8½ cables west-north-westward, bearing 300°, leads through the south-eastern entrance and the south-eastern part of Dòirlinn a' Chailbhe.

Chart 1836.

Abhuinn Loch nam Mioll flows into Tobermory harbour, at its southern end, and forms a waterfall about 3 cables inland, which is visible from seaward.

- 5 Three prominent white marks are situated on the south-western shore of the harbour, about $3\frac{1}{2}$, 5 and $6\frac{1}{2}$ cables west-north-westward of Aros house.

A distillery, with a chimney, is situated at the southern end of the town, about 9 cables north-westward of Aros house. A radio mast, 10 about 80 feet ($24^{\text{m}}4$) high, is situated about one cable northward of the distillery chimney. The Free church, with a spire, stands on the hillside, a quarter of a cable east-north-eastward of the radio mast.

A light is exhibited, at an elevation of 15 feet ($4^{\text{m}}6$), from a post, 7 feet ($2^{\text{m}}1$) in height, situated at the head of the Old pier. A church, 15 with a square tower, stands half a cable north-westward; and a hotel with a turret is situated about $1\frac{1}{2}$ cables east-north-eastward of the Free church. A conspicuous flagstaff stands in the grounds of this hotel.

Anchorages.—The best anchorage is either off the town, about 20 $2\frac{1}{2}$ cables east-south-eastward of Tobermory light-post, in depths of from 14 to 16 fathoms ($25^{\text{m}}6$ to $29^{\text{m}}3$), or a little nearer inshore, according to the draught and length of the vessel.

The holding ground off the south-western coast of Calve island is not so good as that near the town.

25 **Tidal streams.**—There is very little stream in the principal entrance, and the streams in the harbour are imperceptible; in Dòirlinn a' Cbailebhe a north-west-going stream begins about -0550 Oban (+0105 Dover) at neaps, but at springs when the channel dries near the south-eastern entrance, this stream does not begin until later. 30 A weak south-east-going stream begins about +0015 Oban (-0515 Dover).

Tobermory.—Tobermory is the principal town in the island of Mull.

There are two stone piers at Tobermory. The Old pier (*Lat. 35° 56' 37" N., Long. 6° 04' W.*), on which is the light-post, is about half a cable long, and has a depth of 10 feet ($3^{\text{m}}0$) at high water at its outer end, but at low water it dries out about 60 feet ($18^{\text{m}}3$) south-eastward of this pier. Mishnish pier, about one cable east-north-eastward of the Old pier, has a least depth of 8 feet ($2^{\text{m}}4$) alongside it.

40 Small quantities of fresh provisions, and water are obtainable.

There is regular communication by sea with Oban, Staffa, and Iona. There is also communication by sea with Glasgow, Skye, and the Outer Hebrides.

Life-saving.—A line-throwing apparatus is maintained at Tobermory; see page 9.

Chart 3718.

Bloody bay.—Bloody bay is entered between Ruhha nan Gall and Rubha na Sealbhaig, about 2 miles west-north-westward. It is used as a quarantine anchorage for Tobermory. A vessel anchoring here 50 should take care to avoid Sgeir Sgreabach (page 285).

Good holding ground of thick mud will be found, in a depth of 20 fathoms ($36^{\text{m}}6$), about 3 cables offshore. A good herth, which can generally be found at night, is with Rubha nan Gall light bearing 126° , distant about 6 cables. A vessel approaching this position should

Chart 3718.

steer for the clear-cut western side of Druim na Srione cruime, about half a mile westward of Rubha nan Gall light-tower, bearing 180°.

Anchorages between Maclean's nose and Sròn Bheag.—5

Light.—Dangers.—A small pier extends from the eastern side of Rubha Aird an Iasgaich ; on the northern side of the pier there is a depth of 4 feet (1^m2).

A light is occasionally exhibited, at an elevation of 17 feet (5^m2), from a mast, 13 feet (4^m0) in height, situated on the head of this pier. 10

Marv rock, with a depth of 1 $\frac{1}{2}$ fathoms (3^m2) over it, and a shoal, with a depth of 2 $\frac{1}{2}$ fathoms (5^m0) over it, lie about 1 $\frac{1}{2}$ cables eastward and 2 cables east-north-eastward, respectively, of the head of the pier ; a rock, with a depth of one foot (0^m3) over it, lies close northward of the head of the pier. 15

Vessels plying between Oban and Lochboisdale in the Hebrides call here regularly.

Kilchoan bay is entered north-eastward of Sròn Bheag ; it is rocky and shallow, and the shores of the bay are foul ; it is not a good anchorage. Along the northern shore of this bay are the scattered 20 cottages of the hamlet of Kilchoan.

Glas eilean, 30 feet (9^m1) high, lies close southward of the eastern entrance point of Kilchoan bay ; a hank, with depths of less than 3 fathoms (5^m5) over it, extends about 1 $\frac{1}{2}$ cables south-westward from Glas eilean. 25

Bogha Caol Ard, about 5 $\frac{1}{2}$ cables east-north-eastward of Sròn Bheag and one cable offshore, dries 6 feet (1^m8). A shoal, with a depth of 3 fathoms (5^m5) over it, lies about 7 $\frac{1}{2}$ cables east-north-eastward of Sròn Bheag and about 2 cables offshore. Bogha na Keal, about 2 cables farther east-north-eastward, just dries, and is marked by a 30 perch.

Small vessels occasionally anchor northward of Bogha na Keal, in depths of from 1 $\frac{1}{2}$ to 3 fathoms (2^m7 to 5^m5), sand.

Life-saving.—A line-throwing apparatus is maintained at Kilchoan ; see page 9. 35

Chart 3607.

Directions.—The south-eastern approach to the Sound of Mull is between Lismore lighthouse (page 201) and Duart point. Lady's rock, on which there is a light-beacon, lies in the fairway ; the channel westward of Lady's rock is preferable. 40

After passing north-eastward of Duart point (*Lat.* 56° 27' *N.*, *Long.* 5° 39' *W.*) a vessel should steer to pass in mid-channel between Glas eileanan and Eileanan Rubha an Ridire, and thence northward of Ynle rocks, which are marked by a red can buoy.

At night the white sector of Ardtornish Point light, between the 45 bearings of 302° and 310°, leads through the fairway between Glas eileanan and Eileanan Rubha an Ridire, passing north-eastward of Yule rocks, to within a short distance of this light, but it should be noted that a shoal, with a depth of 6 fathoms (11^m0) over it, lies just inside the western edge of this sector, 6 $\frac{1}{2}$ cables north-westward of 50 Glas eileannan light-structure.

Charts 3607, 3718.

After passing southward of Ardtornish point a vessel should steer to pass about a quarter of a mile north-eastward of Eileanan Glasa light-beacon, passing northward of Avon rock, marked by a red can

Charts 3607, 3718.

bouy, and thence steer to pass in mid-channel between Calve island and Morvern peninsula, taking care to avoid Bogha Bhuiig, marked by a black conical buoy, and the shoal ground in its vicinity.

- 5 At night Ardtornish Point light, astern, showing *white* between the bearings of 095° and 108° , leads westward through the fairway of the Sound, passing northward of Avon rock, towards Eileanan Glasa ; the latter bearing leads through the fairway north-eastward of Eileanan Glasa.

- 10 From abreast the southern end of Calve island, the vessel should steer for the summit of Beinn na Seilg (page 286), bearing 318° , which leads in mid-channel between Rubha nan Gall lighthouse and New rocks.

- A vessel bound northward at night should note that Rubha nan Gall light (*Lat. $56^{\circ} 38' N.$, Long. $6^{\circ} 04' W.$*), bearing more than 266° , 15 shows *white* southward of Stirk, Red and New rocks, and that the *green* sector of that light, between the bearings of 161° and 266° , covers those dangers, while the light, bearing less than 161° , astern, and showing *red*, leads westward of them.

Chart 3185.

- 20 **LOCH SUNART.**—Loch Sunart is entered between Auliston point (page 285) and Maclean's nose, about 2 miles north-north-westward. Its head is separated from Loch Linnhe by a neck of land about $4\frac{1}{2}$ miles wide. It is enclosed by hills and mountains, the most remarkable being Beinn Resipol, which attains an elevation of 2,707 feet ($843^{\text{m}4}$) 25 about $2\frac{3}{4}$ miles northward of the loch, and $3\frac{1}{2}$ miles from its head.

A conspicuous red-roofed cottage is situated on the northern side of the loch, about $2\frac{1}{2}$ miles eastward of Maclean's nose.

- The loch is, generally speaking, deep, but between Rubha Aird Shlignich and Rubha an Aisig Mhòir, $1\frac{1}{2}$ and $4\frac{1}{2}$ miles, respectively, 30 within the entrance, the depths are irregular.

Between Garbh eilean, on the northern side of the loch, $5\frac{1}{2}$ miles from its head, and Torran a Chonnaidh, $6\frac{1}{2}$ cables south-westward, there is a bar (*see page 299*), the depths increasing again for about $2\frac{1}{2}$ cables, and then shoaling as Lauderdale Narrows are approached.

- 35 In Lauderdale Narrows, about one mile south-eastward of Garbh eilean, the least depth in the fairway is 16 feet ($4^{\text{m}9}$). Inside the Narrows there is deep water.

- Islets and dangers in the outer part of the loch.**—Sligneach Beag, about $1\frac{1}{4}$ miles east-south-eastward of Maclean's nose, is a steep-40 to group of rocks, which dries 10 feet ($3^{\text{m}0}$). Sligneach Mòr, about $2\frac{3}{4}$ cables south-westward of Rubha Aird Shlignich, is 2 feet ($0^{\text{m}6$) high ; foul ground, on which there is a rock which dries 5 feet ($1^{\text{m}5$)), extends one cable eastward and southward, and $1\frac{1}{2}$ cables south-westward from Sligneach Mòr. There is a deep channel, about one 45 cable in width, between Sligneach Mòr and Rubha Aird Shlignich (*Lat. $56^{\circ} 40' N.$, Long. $5^{\circ} 58' W.$*).

- Creag nan Sgarbh, the north-western extremity of Oronsay in line with the 127-foot ($38^{\text{m}7$) peak of Risga, bearing 083° , leads close southward of Sligneach Beag and Sligneach Mòr, but a shoal, with a 50 depth of 5 fathoms ($9^{\text{m}1$) over it, lies about $1\frac{1}{2}$ miles north-westward of Auliston point and about one cable northward of this leading line (chart 3718). *See view on chart 3185.*

The southern shore of the loch, from Auliston point to Tàrr nan Con,

Chart 3185.

a promontory, 337 feet (102^m7) high, $1\frac{1}{2}$ miles eastward, is almost steep-to.

Oronsay, the south-western end of which is close northward of Tòrr nan Con, is much indented, and attains an elevation of 176 feet (53^m6). The eastern end of this island is connected with the mainland southward by a reef that dries. Foul ground extends about $1\frac{1}{2}$ cables north-westward from the south-western end of Oronsay; Ceann Garbh, near the north-western end of this foul area, dries 3 feet (0^m9). Oronsay rocks, about $2\frac{1}{4}$ cables from the western side of Oronsay, have a least depth of 8 feet (2^m4) over them; there is a deep channel eastward of these rocks. Sgeirean Glas is a spit of foul ground extending about one cable northward from Rubha an Aisig, the central promontory on the northern side of Oronsay.

Glenborrodale castle, 2 miles eastward of Rubha Aird Shlignich, bearing 067° and open north-westward of the north-western extremity of Oronsay, leads north-westward of Oronsay rocks.

Eilean Mhòir, the south-western extremity of which is situated about $9\frac{1}{2}$ cables east-north-eastward of Rubha Aird Shlignich, is 116 feet (35^m4) high. A bank, with depths of less than 3 fathoms (5^m5) over it, extends about three-quarters of a cable westward and about half a cable southward and eastward from this islet. The northern end of Eilean Mhòir is connected with the northern shore of the loch by a reef that dries.

Sgeir Bhuidhe, about $1\frac{1}{2}$ miles eastward of the south-western extremity of Eilean Mhòir and about three-quarters of a cable from the northern shore of the loch, is 19 feet (5^m8) high. Sgeir a Choire, 14 feet (4^m3) high, lies about one cable east-south-eastward of Sgeir Bhuidhe, and a shoal bank extends a short distance southward from Sgeir a Choire.

Risga lies with its north-western extremity about 2 cables south-eastward of Sgeir Bhuidhe. Foul ground extends about three-quarters of a cable westward from its north-western end and about one cable eastward from its eastern end. A shoal, with a depth of 8 feet (2^m4) over it, lies about $1\frac{1}{2}$ cables westward of the north-western end of Risga (*Lat. $56^{\circ} 40' N.$, Long. $5^{\circ} 54' W.$*). Eilean an Fhèidh, the southern end of which is about three-quarters of a cable northward of the northern side of Risga, is connected with the mainland northward by a reef that dries. Foul ground, terminating in Sgeir a Choire, extends about one cable westward from the south-western end of Eilean an Fhèidh; foul ground also extends about three-quarters of a cable south-eastward from the south-eastern end of that island. The channel between Risga and Eilean an Fhèidh, in which there are depths of from 36 to 52 feet (11^m0 to 15^m8) in the fairway, can be used by small vessels with local knowledge.

Ross rock, about one cable south-westward of the southern extremity of Risga, has a depth of one foot (0^m3) over it. The northern extremity of Oronsay in line with the third shoulder of Rubha Aird Shlignich, bearing 283° , leads southward of this rock. (*See view B on chart 3185.*)

Broad rock, about 2 cables east-south-eastward of the eastern extremity of Risga, has a depth of one foot (0^m3) over it.

Carna, the northern extremity of which, Rubha an Aisig Mhòir, is situated about 5 cables eastward of the eastern extremity of Risga, and

Chart 3185.

is 546 feet ($166^{\text{m}}4$) high. The navigable channel northward of it is about $1\frac{1}{2}$ cables wide.

Foul ground extends about three-quarters of a cable westward from 5 a position on the western side of Carna, about 7 cables south-south-westward of its northern extremity ; Bo Crithean, which dries 2 feet ($0^{\text{m}}6$), lies on this foul ground.

Eilean nan Gillean, 16 feet ($4^{\text{m}}9$) high, situated close off the northern shore of the loch, about one mile eastward of the northern extremity of 10 Carna, is connected with the shore by a reef that dries, and a shoal bank extends a short distance southward from it. Depths of 32 feet ($9^{\text{m}}8$) and 13 feet ($4^{\text{m}}0$) are situated one cable west-north-westward and south-south-eastward, respectively, of Eilean nan Gillean. Eilean nan Gillean forms the eastern entrance point of Laga bay. Dùn 15 Ghallain, 45 feet ($13^{\text{m}}7$) high, 3 cables eastward of Eilean nan Gillean, is connected with the northern shore by a reef that dries ; on this islet are the ruins of an old castle. A rock, which dries 7 feet ($2^{\text{m}}1$), lies three-quarters of a cable southward of Dùn Ghallain. Dùn Ghallain rock, about three-quarters of a cable south-eastward of the south-20 eastern side of Dùn Ghallain, is awash.

Rubha an Aisig Mhoir in line with Risga peak, bearing 274° , leads southward of Dùn Ghallain rock.

Islets and dangers in the inner part of the loch.—Between Dùn Ghallain and Rubha Bhuailte, about $2\frac{1}{2}$ miles north-eastward, the 25 north-western shore of the loch is almost steep-to.

From Rubha Aird Beithe, $7\frac{1}{2}$ cables eastward of Rubha Bhuailte, a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extends about $1\frac{1}{2}$ cables west-south-westward. A patch, with a depth of 47 feet ($14^{\text{m}}3$) over it, lies about 4 cables west-south-westward of Rubha Aird Beithe.

30 The south-eastern shore of the loch, from abreast Dùn Ghallain to Rubha nan Aighean, about 3 miles north-eastward, is practically steep-to. From Rubha Aird Earnaich, about three-quarters of a mile east-north-eastward of Rubha nan Aighean, foul ground, on which are two rocks that dry 2 and 6 feet ($0^{\text{m}}6$ and $1^{\text{m}}8$), respectively, extends 35 about three-quarters of a cable northward and one cable eastward.

A patch, with a depth of 11 feet ($3^{\text{m}}4$) over it, lies about $2\frac{1}{2}$ cables west-south-westward of the northern extremity of Rubha Aird Earnaich (*Lat. $56^{\circ} 42' N.$, Long. $5^{\circ} 45' W.$*).

Sgeir an't Seangain, 20 feet ($6^{\text{m}}1$) high, is situated about $4\frac{1}{2}$ cables 40 east-south-eastward of Rubha Aird Earnaich. Shoals, with depths of 17 and 14 feet ($5^{\text{m}}2$ and $4^{\text{m}}3$) over them, are situated about three-quarters of a cable northward and eastward, respectively, of Sgeir an't Seangain ; patches, with depths of 21 and 33 feet ($6^{\text{m}}4$ and $10^{\text{m}}1$) over them, lie about one cable and $1\frac{1}{2}$ cables, respectively, north-45 eastward of Sgeir an't Seangain.

Eilean mo Shlinneag, situated close off the southern shore of the loch, about $8\frac{1}{2}$ cables east-south-eastward of Rubha Aird Earnaich, has foul ground extending about 3 cables north-north-westward from it, on which there are rocks awash and sunken.

50 On the northern side of the loch, a patch, with a depth of 30 feet ($9^{\text{m}}1$) over it, lies about $6\frac{1}{2}$ cables northward of Eilean mo Shlinneag. A spit, on which there are rocks that dry, and with a depth of 12 feet ($3^{\text{m}}7$) over its extremity, extends about $1\frac{1}{2}$ cables offshore, from a position about 5 cables north-eastward of Eilean mo Shlinneag.

Chart 3185.

Eilean a' Chuilinn, about $1\frac{1}{2}$ cables westward of Garbh eilean and about 2 cables from the northern shore of the loch, has foul ground extending between it and the mainland north-eastward. A spit, with a depth of less than 6 feet (1^m8) over it, at its southern end, extends about $1\frac{1}{2}$ cables south-south-westward from the southern end of Eilean a' Chuilinn.

A patch, with a depth of 24 feet (7^m3) over it, lies about 4 cables west-south-westward of Eilean a' Chuilinn and a shoal, with a depth of 12 feet (3^m7) over it, lies about $1\frac{1}{2}$ cables southward of this 24-foot 10 (7^m3) patch.

Garbh eilean is connected with the mainland north-eastward by a shoal bank, and a shoal bank extends about one cable westward from its south-western end. A rock, which dries 10 feet (3^m0), lies one cable westward of the southern extremity of Garbh eilean. Foul 15 ground lies between the northern ends of Eilean a' Chuilinn and Garbh eilean.

Between Garbh eilean and Torran a Chonnaidh, about $6\frac{1}{2}$ cables south-westward, is a bar, with depths of from 4 to 17 feet (1^m2 to 5^m2) over it, extending from about 3 to 5 cables south-westward of 20 Eilean a' Chuilinn. Between the northern end of this bar and the southern end of the spit, with a depth of less than 6 feet (1^m8) over it, extending south-south-westward from Eilean a' Chuilinn, the navigable channel across the bar is reduced to a width of about one cable.

From the southern end of Rubha an Daimh, about $2\frac{1}{2}$ cables south-eastward of Garbh eilean, foul ground extends $1\frac{1}{2}$ cables south-westward. Sgeir Mhali (*Lat. $56^{\circ} 41' N.$, Long. $5^{\circ} 41' W.$*), near the western edge of this foul area, dries 6 feet (1^m8) and from it foul ground, near the edge of which is Sgeir nan Eun, an islet, 10 feet (3^m0) high, extends about 2 cables eastward.

Laudale river flows into the loch on its southern side, southward of Sgeir Mhali; a bank, which dries, extends about $1\frac{1}{2}$ cables northward from the mouth of the river; the navigable channel in this vicinity is about $1\frac{1}{2}$ cables wide.

From the north-eastern extremity of Rubh' an Dùnain, a promontory, 134 feet (40^m8) high, $1\frac{1}{2}$ miles south-eastward of Eilean mo Shlinneag, a shoal bank extends nearly half a cable north-eastward, and, about half a cable farther north-eastward, is a detached shoal, with a depth of 17 feet (5^m2) over it, which contracts the channel to a width of about half a cable.

Between Rubh' an Dùnain and Rubha nan Clach, $5\frac{1}{2}$ cables east-south-eastward, the bight is filled with a reef which dries, and a bank, with depths of less than 6 feet (1^m8) over it, extends half a cable outside the edge of this reef.

Eilean Mòr, lying close off the northern shore of the loch, to which it is joined by a reef that dries, about $1\frac{1}{2}$ miles south-eastward of the southern extremity of Garbh eilean, is 104 feet (31^m7) high. Glas eilean lies about half a cable south-westward of the western extremity of Eilean Mòr and a bank, with depths of from 5 to 16 feet (1^m5 to 4^m9) over it, extends $3\frac{1}{2}$ cables west-north-westward from Glas 50 eilean.

Laudale Narrows, the navigable channel westward and southward of Glas eilean, is about half a cable wide.

There is a wooden jetty, with a depth of 5 feet (1^m5) alongside, on

Chart 3185.

the southern shore about 2 cables east-south-eastward of Rubha nan Clach.

Above Lauderdale Narrows the fairway of the loch is deep and clear of dangers as far as the entrance to Strontian river, about $2\frac{1}{2}$ miles eastward of Eilean Mòr, with the exception of a spit, with depths of 38 feet (11^m0), or less, over it, extending about $1\frac{1}{4}$ cables northward from Rubha an't Sabhail on the southern shore about one mile eastward of Rubha nan Clach.

10 Eilean a' Mhuirich is situated close off the northern shore of the loch, about 2 miles eastward of the eastern extremity of Eilean Mòr ; it is connected with the shore by a bank that dries, and rocks which dry as much as 5 feet (1^m5), extend about half a cable southward from it.

The bight immediately north-westward from this islet is filled with a reef that dries, and a bank, with depths of less than 30 feet (9^m1) over it, extends about 2 cables south-westward of the south-western edge of this reef. Rocks, with depths of 14 and 9 feet (4^m3 and 2^m7) over them, lie, respectively, $2\frac{1}{4}$ cables westward and $1\frac{1}{2}$ cables west-north-westward of Eilean a' Mhuirich.

20 Strontian river flows into the loch on its northern side, about 7 cables eastward of Eilean a' Mhuirich ; an extensive sandbank is formed by silt brought down by this river, extending about $2\frac{1}{2}$ cables offshore.

The head of the loch dries out about $4\frac{1}{2}$ cables.

25 **Tidal streams.**—Off the entrance to Loch Sunart about half a mile northward of Red rocks, the stream is more or less rotatory clockwise ; it runs north-westward +0530 Oban (H.W. Dover) and changes gradually, through north, to about north-east by +0030 Oban (-0500 Dover) ; it then changes gradually, through east, south, and west, to about north-west by +0530 Oban (H.W. Dover) ; the spring rate in all directions is from 0·5 to one knot.

In the outer part of the loch, at a position on the northern side of the channel about 4 cables south-eastward of Rubha Aird Slignish, the in-going stream, spring rate 0·4 knot, begins -0500 Oban (+0155 Dover) ; the out-going stream, spring rate 0·5 knot, begins +0130 Oban (-0400 Dover). The streams probably begin at about these times everywhere in the loch.

During the in-going stream a weak eddy runs outward along the northern shore between about Camas nan Geall and Maclean's nose, and a similar eddy runs along the southern shore between about Camas nan Liath and Auliston point (*Lat. 56° 39' N., Long. 6° 00' W.*).

In mid-channel between Rubha Aird Slignish and Oronsay the spring rate in both directions is about one knot. Farther inwards the rate of the stream varies with the width and depth of the channel ; in the narrow entrances to Loch Teacuis and in the channel northward of the northern extremity of Carna the spring rate is about 2·5 knots in both directions, but there is very little stream in the wide channel off Salen bay. As Lauderdale Narrows are approached the rate increases and in the Narrows the spring rate of the in-going streams is said to be 3 knots, and of the out-going stream 3·5 knots. There is little or no stream in the inner part of the loch above the Narrows.

Anchorages.—For large vessels the most sheltered anchorage during southerly winds is about 3 cables eastward of the eastern side of Carna, in the entrance to Caol Chàrna.

Chart 3185.

Eastward of Ruhha Aird Shlignich a bank, with depths of from $8\frac{1}{2}$ to 16 fathoms (15 m 5 to 29 m 3) over it, extends about one mile south-south-westward from Rubha Camp an Righ, about $8\frac{1}{2}$ cables north-eastward of Rubha Aird Shlignich ; there are depths of 20 fathoms (36 m 6), 5 or more, on either side of the bank and vessels of deep draught can find anchorage, with good holding ground, on the eastern or western edges of the bank, according to the direction of the wind, with Rubha Aird Shlignich bearing 270°.

Small vessels can find sheltered anchorage in the bays described 10 below.

Camas nan Geall, a small bight on the western side of Rubha Aird Shlignich, is open south-westward. A vessel entering this bight should be careful to avoid Sgeir Fhada, a rocky spur extending about one cable south-eastward from its western entrance point, and also a rock, 15 which dries 8 feet (2 m 4), about 2 cables westward of Sgeir Fhada.

Between the eastern side of Rubha Aird Shlignich and the western side of Eilean Mòr are three small indentations in the northern shore of the loch, Camas Bàn, Camas Feàrna, and Port na Croisg. The head of Camas Bàn dries out about $2\frac{1}{2}$ cables ; the head of Camas Feàrna 20 dries out about three-quarters of a cable, and there are depths of from 24 to 48 feet (7 m 3 to 14 m 6) in the fairway of this bight. Foul ground extends about $1\frac{1}{2}$ cables from the head of Port na Croisg and just within the entrance to this bight are depths of from 36 to 60 feet (11 m 0 to 18 m 3) in the fairway. 25

Loch na Droma Buidhe, between the southern side of Oronsay (*Lat. 56° 40' N., Long. 5° 56' W.*) and the southern shore of Loch Sunart, is entered from westward ; the eastern entrance is foul, and dries.

A vessel can obtain anchorage in the western part of Loch na Droma Buidhe, about 2 cables east-south-eastward of the north-eastern 30 extremity of Tòrr nan Con and about one cable from the southern shore of the loch, in a depth of about 60 feet (18 m 3), mud.

The western entrance to Loch na Droma Buidhe is about half a cable wide, and has depths of from 40 to 60 feet (12 m 2 to 18 m 3) in the fairway. A vessel should keep in mid-channel until the loch begins to 35 open out, and then bear northward to avoid a spit which extends one cable north-eastward from the north-eastern side of Tòrr nan Con ; there is a depth of 15 feet (4 m 6) over the north-eastern edge of this spit, and a rock, with a depth of 3 feet (0 m 9) over it, lies a little farther southward. 40

Glenmore bay, on the northern side of the loch, is entered between the eastern side of Eilean Mòr and Rubha Aird Druimnich, a point $5\frac{1}{2}$ cables east-south-eastward ; a sandy beach at its head dries out about 2 cables.

Foul ground extends about half a cable from the western side of 45 this bay, and one cable from its eastern side ; foul ground also extends about three-quarters of a cable from the western side of Rubha Aird Druimnich. Rocks, which dry 7 and 10 feet (2 m 1 and 3 m 0), lie about half a cable off the eastern shore about $2\frac{1}{2}$ cables south-eastward and $2\frac{1}{2}$ cables east-north-eastward, respectively, of the south-eastern 50 extremity of Eilean Mòr.

A shoal, with a depth of less than 6 feet (1 m 8) over its northern end and a depth of 13 feet (4 m 0) over its southern end, obstructs the head of the bay.

Chart 3185.

Anchorage, sheltered except from south-westward, can be obtained in Glenmore bay, in a depth of about 48 feet ($14^m 6$), about $1\frac{1}{2}$ cables eastward of the eastern extremity of Eilean Mòr.

5 There is a good and sheltered anchorage about $1\frac{1}{2}$ cables east-north-eastward of the eastern extremity of Oronsay, in a depth of 48 feet ($14^m 6$), mud, tenacious holding ground.

Loch Teacuis extends about $2\frac{1}{2}$ miles south-eastward from the southern end of Carna. There is a foul and narrow channel on either side of Carna leading into this loch, only available for small vessels of light draught with local knowledge. The tidal streams set more strongly through the eastern channel.

10 Salen bay, on the northern shore of Loch Sunart, is entered between Rubha Bhailte (*Lat. $56^{\circ} 42' N.$, Long. $5^{\circ} 47' W.$*) and An Cnap, $15 3$ cables east-north-eastward; the head of the bay dries out about one cable. The scattered hamlet of Salen stands on the shores of the bay; small quantities of provisions can be obtained here. Foul ground extends about half a cable from the eastern, and one cable from the western side, of the bay; a rock, which dries 2 feet ($0^m 6$), is situated 20 about 3 cables north-north-eastward of Rubha Bhailte and about three-quarters of a cable from the western side of the bay, narrowing the navigable channel to about half a cable in width.

Good anchorage for small vessels may be obtained in Salen bay, about $3\frac{1}{2}$ cables north-westward of the southern extremity of An Cnap 25 and about three-quarters of a cable from the eastern shore of the bay, in depths of from 24 to 36 feet ($7^m 3$ to $11^m 0$), good holding ground. A black conical buoy marks the anchorage in Salen bay.

A ruined wooden pier extends from the western shore of the bay, about 2 cables within Ruhha Bhailte, and a sloping stone jetty or 30 hard about $1\frac{1}{2}$ cables farther northward. The former pier dries, but is used by coasters at high water.

Good sheltered anchorage for small vessels may be obtained in the bight south-eastward of Garbh eilean, about $1\frac{1}{2}$ cables eastward of the southern extremity of that islet, in a depth of about 42 feet ($12^m 8$). 35 mud and clay.

There is good anchorage in Port a' Challtnin, the bight south-westward of Rubha na Sròine (Stroine), $2\frac{1}{2}$ miles eastward of Rubha nan Clach, about $2\frac{1}{2}$ cables west-south-westward of Ruhha na Sròine and about $1\frac{1}{2}$ cables offshore, with Rubha na Sròine bearing 060° , in a 40 depth of 42 feet ($12^m 8$), mud.

The ruins of a small stone pier or hard, which is used as a landing place, extends from the northern shore of the loch, about $2\frac{1}{2}$ cables north-westward of Eilean a' Mhuirich (*Lat. $56^{\circ} 41' N.$, Long. $5^{\circ} 36' W.$*).

There is good anchorage off a small pier extending from the northern 45 shore of the loch, about $1\frac{1}{2}$ miles eastward of Eilean a' Mhuirich, in a depth of 18 feet ($5^m 5$), mud.

Strontian, a village on Strontian river, has occasional communication by sea. Small quantities of provisions can be obtained here.

Directions.—Having cleared Red rocks, off the entrance to Loch 50 Sunart, on one of the two leading lines mentioned on page 286, a vessel should, when the conspicuous red-roofed cottage about 8 cables north-eastward of Ruhha Aird Shligich bears about 032° and is open eastward of that point, steer in mid-channel to pass northward of Sgeircean Glas and, when past the north-eastern extremity of Oronsay, she

Chart 3185.

should steer with the latter point in line, with the third shoulder of Rubha Aird Shlignich, bearing 283° , astern, which leads southward of Ross rock (*see* view B on chart 3185).

Having cleared Ross rock, the vessel should steer in mid-channel, care being taken to avoid Broad rock, and, after passing northward of Rubha an Aisig Mhoir, she may either steer with the latter point in line astern with the 127-foot (38^m7) summit of Risga, bearing 274° , or she may keep in mid-channel and pass northward of the bank with a depth of 49 feet (14^m9) over it, situated about 3 cables south-westward of Dùn Ghallain islet; the former alignment leads about one cable northward of the 49-foot (14^m9) bank.

When past Dùn Gallain rock the vessel should steer in mid-channel until about midway between Rudha Aird Beithe and Rubha Aird Earnaich. Thence she should steer with the southern house in Salen bay in line with Rubha Aird Beithe, bearing 275° , astern, until the bridge at Resipol, about one mile eastward of Rubha Aird Beithe, is in line with Resipol farm, about one cable north-north-westward, bearing 339° ; these two latter marks should be kept in line, astern, until Sgeir an't Seangain bears 294° and is seen midway between Eilean mo Shilinneag and a wooded point on the mainland about half a cable south-westward, which leads through the channel over the bar south-westward of Eilean a' Chuillinn and Garbh eilean. When Eilean a' Chuillinn is abeam, the vessel should steer for Rubh' an Dùmain, bearing about 133° , to pass about $1\frac{1}{2}$ cables south-westward of Sgeir Mhali. Thence she should steer to pass in mid-channel through the Narrows and when Eilean Glas bears about 100° she should steer to pass about a quarter of a cable southward of Eilean Glas and three-quarters of a cable southward of Eilean Mòr (*Lat.* $56^{\circ} 41' N.$, *Long.* $5^{\circ} 39' W.$), thence proceeding in mid-channel up the loch.

Laudale Narrows have a least width of about half a cable, and as the tidal streams run strongly through the Narrows (*see* page 300) the utmost caution is required here.

Charts 2155, 2475, 2515, 3674, 2635.

CHAPTER VI

THE HEBRIDES—BERNERAY TO NORTH UIST

Charts 2508, 2635.

THE HEBRIDES.—The Hebrides or Western isles lie between the parallels of $55^{\circ} 25'$ and $58^{\circ} 30'$ N. latitude, and the meridians of $5^{\circ} 26'$ and $8^{\circ} 40'$ W. longitude.

5 The Outer Hebrides lie westward of the northern part of Scotland, being divided from it by the Sea of the Hebrides and the Minch. These isles extend from Barra head (*Lat. $56^{\circ} 47'$ N., Long. $7^{\circ} 38'$ W.*), about 113 miles north-north-eastward, to Butt of Lewis, and, excepting the channels between the islands at the southern end of the Outer 10 Hebrides, the Sounds of Barra and Harris are the only navigable channels through them.

The fundamental rock of the Hebrides generally is gneiss, traversed by veins of granite and trap. The soil is bog, varying from a few inches to 20 feet ($6^{\text{m}} 1$) in depth. On the western side blown shelly 15 sand, mixing with the bog, produces good pasture land. With the exception of a portion of the northern part of Lewis, and a few small patches on the other islands, the eastern coasts are bleak and sterile.

Trees are found only in three places in the Hebrides.

The Outer Hebrides are comparatively low, being mostly less than 20 500 feet ($152^{\text{m}} 4$) high. They consist chiefly of bleak stretches of bog or moorland, interspersed with numerous lakes and inlets of the sea, and by ranges of hills in Barra, South Uist, and Harris.

The population of The Hebrides in 1956 was about 100,000.

Fauna.—The red deer is found in North Uist, Harris, and Lewis. 25 The otter is numerous in places, inhabiting the cairns along the sea shore, and at the entrance to Loch Eport.

Sea fowl are numerous and of great variety. The wild swan is seen in winter, but does not breed here. The eider duck is numerous, and breeds on the Flannan isles (*Lat. $58^{\circ} 17'$ N., Long. $7^{\circ} 35'$ W.*) and other 30 solitary islands.

The common wild goose breeds on the small islands of inland lochs and frequents the western coasts of the Hebrides. The barnacle goose migrates to Barra and North Uist during autumn and winter.

Chart 2.

35 **OUTLYING ISLANDS, BANKS, AND DANGERS WESTWARD AND NORTHWARD OF THE HEBRIDES.**—**Rockall.**—Rockall (*Lat. $57^{\circ} 36'$ N., Long. $13^{\circ} 40'$ W.*), a remarkable rocky islet, situated about 200 miles west-north-westward of Barra head, at the southern end of the Hebrides, is about 83 feet ($25^{\text{m}} 3$) in extent at its

Chart 2.

Chart 2.

base, and 70 feet ($21^{\text{m}}3$) high. The islet is of coarse granite, said to be highly magnetic. The summit of the islet, sharp-pointed and whitened by the deposit of sea birds, can only be ascended on its north-eastern side, but a landing can seldom be effected, and even in the finest weather is difficult, the rock being steep on all sides. *See views facing page 306.*

Rockall is about 18 miles southward of the northern end of Rockall bank, which extends about 60 miles north-north-eastward and south-south-westward, and has depths of from 42 to 100 fathoms ($76^{\text{m}}8$ to $102^{\text{m}}9$). Rockall bank is resorted to by fishing craft at certain seasons.

Helen's reef, about 2 miles east-north-eastward of Rockall, is small and has a depth of about 6 feet ($1^{\text{m}}8$) over it; it is steep-to and generally marked by breakers; at low water springs the summit of the reef has been seen in the trough of the seas, but towards high water, and in fine weather, the sea only breaks over it at long intervals. There is nothing, except the breakers, to indicate approach to this reef, and to avoid it, a vessel should not bring Rockall to bear between 200° and 290° , when in its vicinity.

Hasselwood rock, about $1\frac{1}{2}$ cables north-eastward of Rockall, is a small detached rock, which dries 3 feet ($0^{\text{m}}9$); there are depths of 30 fathoms ($54^{\text{m}}9$) between this rock and the islet.

Caution.—Fishermen state that they have seen the sea break from 3 to 4 miles farther eastward of Rockall than the above-mentioned shoals.

Local magnetic anomaly.—A local magnetic anomaly is reported to exist northward and north-eastward of Rockall, the focus of the disturbance appearing to be from about 2 to 3 miles off the island.

Care should be taken when navigating in this vicinity.

Banks northward of Rockall.—George Bligh bank, about 74 miles northward of Rockall, was discovered by the research vessel *George Bligh* in 1921; the least depth found on this bank, which is about 10 miles in extent, was 260 fathoms ($475^{\text{m}}5$).

Rosemary bank, about 150 miles north-eastward of Rockall and about 118 miles from the north-western side of the Hebrides, was discovered by H.M.S. *Rosemary* in 1930; the least depth found on this bank was 258 fathoms ($471^{\text{m}}8$). In 1934, a depth of 188 fathoms ($343^{\text{m}}8$) was reported by S.S. *Bergensfjord* on this bank.

Chart 2474.

St. Kilda group.—St. Kilda group, about 34 miles west-north-westward of the western extremity of North Uist, the centre island of the Outer Hebrides, is uninhabited, and consists of three islands, St. Kilda, Soay (*Lat. $57^{\circ} 50' N.$, Long. $8^{\circ} 38' W.$*), and Boreray, Dun islet, close south-eastward of the southern end of St. Kilda, and three large inaccessible rocks, Levenish, $1\frac{1}{2}$ miles eastward of the south-eastern end of Dun, Stac Lee, about half a mile westward of the western extremity of Boreray, and Stac an Armin, about a quarter of a mile north-westward of the northern extremity of Boreray. *See view facing page 306 and view on chart 2635.*

The group forms part of the Scottish National Trust, and is leased as a nature reserve; the Scottish Nature Conservancy provide a warden to protect wild birds, and study bird migration.

The channel between St. Kilda and Boreray is about $3\frac{1}{4}$ miles wide, free from dangers, and deep.

Chart 2.

Chart 2474.

This group consists chiefly of two descriptions of igneous rocks, one of a moderately light and the other a darker colour, the former being granite, the latter gabbro. The eastern part of St. Kilda, the main island, is chiefly granite, whilst the dark crags and tattered pinnacles in the other parts of the island, as well as in the other islands and islets of the group, particularly Boreray, are gabbro. Some of the rock of St. Kilda is strongly magnetic.

The coastline of all these islands is honeycombed with large caves.
10 Aspect.—The islands, islets, and rocks of St. Kilda group are precipitous, the coasts being great cliffs of dark colour. Haze, mist or fog often prevents the islands being seen until within a distance of 5 miles or less.

From the vicinity of North Uist the group has the appearance of 15 a number of pillars on the horizon, but as a vessel approaches the mountains become more distinct.

Off-lying banks.—A bank, with a depth of 10 fathoms (18^m3) over it, the position of which is approximate, lies about 18 miles east-north-eastward of the eastern extremity of St. Kilda.

20 A shoal, with a depth of 4½ fathoms (8^m2) over it, was reported, in 1948, to lie about 16 miles eastward of St. Kilda.

St. Kilda.—St. Kilda, the principal island of the group, attains an elevation in Conachair, near its north-eastern end, of 1,392 feet (424^m3). This mountain has a smooth conical appearance from northward, and 25 it is the highest cliff in the British isles.

On the eastern side of this island is Village bay, and on its northern side, at its western end, Loch a Ghlinne or Glen bay. Landing can be effected in both these bays, but the remainder of the coast is precipitous and steep-to, the cliffs, which are frequented by sea-birds, 30 being from 200 to over 1,000 feet (61^m0 to 304^m8) high. Landing is occasionally possible at one of the caves on the northern coast, but probably it is never possible to land on the southern coast on account of the surf.

St. Kilda (*Lat. 57° 49' N., Long. 8° 35' W.*) is hilly, and though 35 there are no trees or shrubs on the island, the hills are green to their summits; a gully, containing a stream, runs down the hillside on the western side of Conachair.

Chart 1144, plan of Village bay.

Dun.—Dun, which is separated from the southern end of St. Kilda 40 by a narrow channel which dries, is a rocky ridge terminating at its south-eastern end in a point named Gob an Duin, on which are the crumbling and inconspicuous ruins of a castle. Dun attains an elevation in Bioda Mòr of 571 feet (174^m0); the contour of this hill is serrated in a fantastic manner. The south-western coast of Dun is 45 precipitous and indented, while the north-eastern is a steep green slope.

About 1½ cables within Gob an Duin, Dun is penetrated by a high natural tunnel, through which the sea flows, but it is not safe for boats on account of sunken rocks.

Landing on Dun is difficult, but can be effected when the sea is 50 smooth close to a cave at the north-western end of this islet.

Chart 2474.

Dangers.—Levenish, a large rock, with nearly vertical sides and a round summit, 180 feet (54^m9) high, has a ridge of rocks, which dries 5 feet (1^m5), extending a short distance northward from it; a shoal

To face page 386.



*Showing east end unerected
about 2 miles*



*Showing south end unerected
about 1½ miles*

Two Views of Rockall
(Originals dated 1897.)



Sayay

St. Kilda
distant 70°-12 miles.

Leverick

Boreray

St. Kilda group.
(Original dated 1910.)

To last page 301.



Flannan Isles (lighthouse)
(Original dated 1953.)



Elegan Mòr,
bearing 137°, 2 miles.

Flannan Isles (lighthouse not shown).
(Original dated 1912.)



Barra Head lighthouse, bearing 100°.
(Original dated 1912.)

Chart 2474.

with a depth of 6 fathoms (11^m0) over it, lies about 4 cables westward of Levenish, and there is often a confused sea over this shoal.

When the tidal stream opposes the wind there are usually several heavy tide rips across the channel between the south-eastern extremity of Dun and Levenish, starting close to Dun ; these rips strongly resemble the sea breaking over rocks, particularly in heavy weather, but the water is deep, except for the 6-fathom (11^m0) shoal. 5

A vessel can pass on either side of Levenish, but if passing westward care should be taken to avoid the 6-fathom (11^m0) shoal. 10

Chart 1144, plan of Village bay.

Village bay.—**Buoyage.**—**Anchorage.**—Village bay affords safe anchorage, and is protected from the strength of all winds except from those between north-east and south-east. A certain amount of swell is caused by strong south-westerly winds, and during gales the squalls 15 that come down from the hills in unpredictable directions are very violent, if only momentary, but the holding ground is good, and the discomfort caused by the swell is not very great, so the bay is frequented by steam trawlers and steam whalers for shelter during the constantly recurring spells of bad weather that prevail in this region. At the 20 head of the bay there are the houses of an uninhabited village and a beach of large stones and boulders; there is a flagstaff situated about 5 cables westward of Rubha an Uisg, the eastern extremity of St. Kilda. A church and a school are situated close eastward of the flagstaff. 25

Giasgeir and Sgeir Mòr, two small above-water rocks, are situated in the channel between St. Kilda (*Lat.* 57° 49' N., *Long.* 8° 35' W.) and Dun, about a quarter of a cable north-westward and 1½ cables south-westward, respectively, of the northern extremity of Dun.

A can light-buoy, painted red, exhibiting a *red flashing light every 30 two and a half seconds*, and a can light-buoy, painted red, exhibiting a *red flashing light every second*, are moored about 6 cables south-south-eastward and 4½ cables southward of the flagstaff.

A conical light-buoy, painted black, exhibiting a *white flashing light every second*, is moored about 2½ cables south-eastward of the flagstaff. 35

A mooring buoy is situated about 2 cables southward of the flagstaff.

The best anchorage is with Sgeir Mòr bearing 217° and just open north-westward of Giasgeir, and the north-eastern side of Gob an Duin bearing 147°, in a depth of 11 fathoms (20^m1), sand.

There is a concrete pier, with steps and an iron ladder on its western side, projecting from the shore on the northern side of Village bay, just westward of the manse ; it protects a boat slip situated between it and the shore. The pier is usually accessible to boats, except during heavy gales, but at low water boats cannot get alongside owing to thick seaweed and heavy boulders on the bottom. 40

Chart 2474.

Loch a Ghlinne.—**Anchorage.**—Loch a Ghlinne or Glen bay is a small indentation on the northern side of St. Kilda. From the head of this bay a straight valley runs south-eastward between the hills, and the stream through it falls into the head of the bay at a place 50 where the rocky cliff is sufficiently low and sloping to permit of landing being effected.

The bay is well sheltered except from northward, and affords anchorage to small vessels, in a depth of 20 fathoms (36^m6), except close to

Chart 2474.

the rocky shore at the head where there is a depth of 10 fathoms ($18^{\text{m}}3$). The anchorage is not comfortable owing to the swell, but is often used by trawlers when a south-easterly gale is blowing right into 5 village bay.

Soay.—Soay, close west-north-westward of St. Kilda, has a rounded summit, 1,220 feet ($371^{\text{m}}9$) high, which falls on the western coast in a nearly vertical black cliff, and slopes to the eastern coast in a very steep grassy incline, terminating northward and southward in vertical 10 cliffs ; the cliff at the south-eastern end of Soay is less precipitous, and can be scaled.

There are several rocks in the channel separating Soay from St. Kilda, of which Stac Biorach, close eastward of the south-eastern extremity of Soay (*Lat. $57^{\circ} 50' N.$, Long. $8^{\circ} 38' W.$*), and Soay stac, 15 close eastward of Stac Biorach, may be mentioned ; the latter is 231 feet ($70^{\text{m}}4$) high.

There is reported to be a deep channel, navigable in fine weather, close to the north-western end of St. Kilda. The only landing place on Soay is at the south-eastern end.

20 **Boreray.**—Boreray, about $3\frac{1}{2}$ miles north-eastward of St. Kilda, rises to a pinnacle summit 1,240 feet ($377^{\text{m}}9$) high ; its coasts consist of black cliffs, rising into curiously shaped peaks from 300 to 1,000 feet ($91^{\text{m}}4$ to $304^{\text{m}}8$) high ; the southern side of this island is covered with grass.

25 **Stac Lee and Stac an Armin** are 539 and 622 feet ($164^{\text{m}}3$ and $189^{\text{m}}6$) high, respectively ; they are similar in outline, with one side slightly sloping and the others vertical precipices. But as they stand with their long sides at right angles to each other, one of them always appears vertical-sided and narrow, while the other has a sloping side and is 30 wider.

Gannets (*solan geese*) breed on these rocks, and nowhere else in the group ; the upper parts of the rocks are, in consequence, quite white in appearance.

There is a deep navigable channel between Stac Lee and the western 35 side of Boreray which is free from dangers. The channel between Boreray and Stac an Armin is encumbered with rocks, and cannot be used, even by boats.

Landing on Boreray can only be effected near the southern end of the island, close to Sgarbhstac, a rock lying close off the south-western side of Boreray.

Charts 3331, plan of Flannan isles, 2386.

Flannan isles.—Dangers.—Light.—Flannan isles, about 44 miles west-south-westward of Butt of Lewis (page 424) and 16 miles from the western side of Lewis, the northern island of the Hebrides, consist 45 of several islets and rocks, forming three detached groups. Gealtaire Mòr, the easternmost of these rocks, is 25 feet ($7^{\text{m}}6$) high. See views facing page 307.

Chart 3331, plan of Flannan isles.

Eilean Mòr, the largest islet, is 283 feet ($86^{\text{m}}3$) high. The only 50 inhabitants are the lighthouse keepers, but it is visited by fishermen and others about the middle of June to obtain nests of the eider duck and eggs of other sea birds, which breed here in great numbers. The best landing place is on the south-western side of Eilean Mòr, but it should only be attempted in moderate weather.

Charts 2508, 2635, 2.

Chart 3331, plan of Flannan isles.

A light is exhibited, at an elevation of 330 feet ($100^{\text{m}}6$), from a white tower, 75 feet ($22^{\text{m}}9$) in height, situated on the north-eastern part of Eilean Mòr. See view facing page 307. There is a radio telephone at the lighthouse.

A bank, with a depth of 20 fathoms ($36^{\text{m}}6$) over it, lies about $7\frac{1}{2}$ cables southward from the southern end of the western group of Flannan isles; a shoal, with a depth of $6\frac{1}{2}$ fathoms ($11^{\text{m}}9$) over it, lies about 7 cables north-north-eastward of the northern end of the same group; the sea breaks over the former, occasionally in heavy 10 gales, and over the latter in bad weather.

A rocky shoal, with a depth of $6\frac{1}{2}$ fathoms ($11^{\text{m}}9$) over it, is situated about 3 cables south-westward of the south-western extremity of Sgeir Righinn (*Lat. $58^{\circ} 16' N.$, Long. $7^{\circ} 35' W.$*), the southernmost islet of the eastern groups of the Flannan isles, and a shoal, with a depth of $2\frac{1}{2}$ fathoms ($4^{\text{m}}6$) over it, lies about one cable south-south-eastward of the north-eastern extremity of the same islet; the sea breaks on both these shoals in bad weather. A shoal, with a depth of $1\frac{1}{2}$ fathoms ($2^{\text{m}}3$) over it, lies about $2\frac{1}{2}$ cables north-westward of the northern extremity of Soray, which lies about $1\frac{1}{2}$ cables northward of Sgeir Righinn. A shoal, with a depth of $2\frac{1}{4}$ fathoms ($4^{\text{m}}1$) over it, lies about half a cable westward of the islet close westward of the western extremity of Eilean Mòr, and a rock, with a depth of less than 6 feet ($1^{\text{m}}8$) over it, is situated about a quarter of a cable north-westward of the north-western extremity of Eilean Mòr.

Chart 2386.

Outlying banks. A bank, with a least depth of 30 fathoms ($54^{\text{m}}9$) over it, lies about 17 miles north-eastward of Eilean Mòr.

A bank, with a depth of 18 fathoms ($32^{\text{m}}9$) over it, which has not been examined, was reported, in 1955, about $10\frac{1}{4}$ miles north-north-eastward of Eilean Mòr.

In 1951, a bank, with a depth of 23 fathoms ($42^{\text{m}}1$), rock, over it, was reported to lie about 5 miles west-south-westward of Eilean Mòr light-structure.

Chart 2508.

A bank, with a depth of 27 fathoms ($49^{\text{m}}4$) over it, was reported to lie about 13 miles south-south-westward of the same light-structure.

Chart 2635.

A bank, with depths of from 20 to 50 fathoms ($36^{\text{m}}6$ to $91^{\text{m}}4$) over it, was reported, in 1947, to lie about 31 miles north-north-westward of Eilean Mòr.

Charts 3331, plan of Sula sgeir, 1954

Sula sgeir.—Sula sgeir, about 35 miles northward of Butt of Lewis (page 424), is a precipitous rocky islet, 222 feet ($67^{\text{m}}7$) high; the south-eastern and north-western sides of this islet should not be approached too closely. See views on chart 2635.

It is visited during the summer by the inhabitants from Lewis for the purpose of taking solan geese and their eggs.

Chart 3331, plan of Sula sgeir.

Gralisgeir, an above-water rock, lies about $3\frac{1}{2}$ cables southward of the southern extremity of Sula sgeir; several rocks lie close off the north-western side of this islet, and Bogha corr is situated about 6 cables westward of the northern extremity of Sula sgeir.

Charts 3331, plan of Rona, 1954.

Rona.—Rona, an uninhabited island situated about 10 miles eastward of Sula sgeir is triangular in shape and generally flat. Near its south-eastern end a steep hill, 348 feet (106^m1) high, has a vertical cliff 5 facing southward. See view on chart 2635.

Rona (*Lat. 59° 07' N., Long. 5° 49' W.*) lies near the south-western end of a bank, with depths of from 12 to 30 fathoms (21^m9 to 54^m9) over it, which extends about 3 $\frac{1}{2}$ miles north-eastward from the island. *Chart 3331, plan of Rona.*

10 Landing is generally difficult, but the best places are on the northern side of the hill, mentioned above, or in a small creek on its southern side, according to the direction of the wind ; landing has been effected without difficulty on the eastern side of the northern point of the island, which point is a narrow spur of moderate height projecting from 15 higher land. Here, at the steep side of the entrance of a small cavern, are some natural steps.

There are several good fishing banks in the locality, which are frequented by fishing vessels.

Gealldruig Mòr, situated about 2 $\frac{1}{2}$ cables southward of the south-eastern extremity of Rona, is an above-water rock, and Gealldruig Beag, a smaller rock, lies about one cable northward of Gealldruig Mòr. Bogh' a Mheadhon La, about 6 $\frac{1}{2}$ cables westward of Gealldruig Mòr and about 1 $\frac{1}{2}$ cables from the southern side of Rona, is a small rock.

A rock, with a depth of less than 6 feet (1^m8) over it, on which the 25 sea breaks in heavy weather, the position of which is approximate, was, in 1940, reported to lie about half a mile northward of the eastern extremity of Rona.

Shoals, with a least depth of 4 fathoms (7^m9) over them, are situated about 6 cables east-south-eastward of the northern extremity of Rona 30 and from about 2 $\frac{1}{2}$ to 4 $\frac{1}{2}$ cables from its eastern side ; there may be less water in this vicinity.

A rock, with a depth of 6 feet (1^m8) over it, is situated about 2 cables north-north-eastward of the northern extremity of Rona ; the sea breaks on this rock in moderate weather.

35 Rona should be approached cautiously, especially on its south-western side.

Chart 2.

Currents.—The prevailing westerly or south-westerly winds cause, on the average, a weak north-east-going current in the waters westward of the Outer Hebrides and along the western coasts of the islands ; with strong and long-continued winds from these directions the current near the land may be appreciable ; with strong and long-continued northerly or north-easterly winds the current may be reversed.

Tidal streams.—The few observations which have been obtained 45 in the waters westward of the Outer Hebrides show the stream between about 10 miles and 50 miles from the land to be weak, and either rotatory or rather irregular in its direction. At a position, 42 miles 288° from Barra head, the stream is weak and more or less rotatory clockwise ; it is weakest, spring rate 0.3 knot, in a west-north-westerly direction, —0550 Stornoway (+0220 Dover) ; strongest, spring rate 0.7 knot, in a direction 025°, —0155 Stornoway (—0610 Dover) ; weakest, spring rate 0.5 knot, in a south-easterly direction, +0115 Stornoway (—0300 Dover), and strongest, spring rate 0.7 knot, in a direction 215°, +0315 Stornoway (—0100 Dover).

Chart 2.

At a position about 7 miles offshore, 12.5 miles 173° from Shillay disused lighthouse (*Lat. $57^{\circ} 32' N.$, Long. $7^{\circ} 42' W.$*), the stream is very weak and rather variable in direction ; the north-north-east going stream, spring rate 0.4 knot, begins —0610 Stornoway (+0200 Dover), and runs in directions varying between about 000° and 045° ; the south-west-going stream, spring rate 0.4 knot, begins H.W. Stornoway (-0415 Dover), and runs in directions between 205° and 235° .
5

Near St. Kilda the north-east-going stream begins about +0540 Stornoway (+0125 Dover), and the south-west-going stream begins 10 about —0035 Stornoway (-0450 Dover), the spring rate in each direction in the immediate vicinity of the islands is about 3 knots, and is much less farther from the islands. These times are not reliable as they are based on insufficient observations. From a very short and insufficient series of observations obtained about 20 miles north-north- 15 eastward of Flannan isles the streams in the vicinity are very variable but appear to begin to run in north-westerly directions about —0540 Stornoway (+0230 Dover), and in south-easterly direction about +0045 Stornoway (-0330 Dover) ; the spring rate in each direction is from 0.5 to 0.8 knot.
20

Northward of about lat. 58° N. the streams appear to be variable and very weak. Near the western coasts of the Outer Hebrides the streams may differ greatly from those at sea.

Charts 1144, plan of Sound of Berneray, 2474.

SOUTHERN GROUP OF OUTER HEBRIDES.—The southern 25 group of the Outer Hebrides consists of a number of islands, islets, and rocks, extending from Barra head, the southern extremity of Berneray, the southernmost island, for about 18 miles north-north-eastward to the northern end of Barra, the northernmost island of this group.
30

Chart 2474.

Off-lying banks.—Sgriobh bhan or White Strip, about $8\frac{1}{2}$ miles south-south-westward of Barra head (*Lat. $56^{\circ} 47' N.$, Long. $7^{\circ} 39' W.$*), has a depth of 27 fathoms (49^m4), rock, over it.

Chart 2635.

Two banks, each with a depth of 30 fathoms (54^m9) over it, lie about $6\frac{1}{2}$ miles west-south-westward and $8\frac{1}{2}$ miles south-westward of Sgriobh bhan.
35

Tidal streams.—The streams in the Sea of the Hebrides differ greatly from those which run along the eastern side of the Outer 40 Hebrides between Barra head and East Loch Tarbert. The streams probably change very quickly as the land is left, and 3 or 4 miles offshore resemble more nearly those of the sea than those along the coast.

In the Little Minch, though there are local variations, the streams near the land do not differ much from those in the channels.
45

The streams close inshore off the east coast of Lewis are the same as those that occur in the centre of North Minch.

Currents.—There are no permanent currents along these coasts and information regarding the effects of wind is not available ; there is, however, no doubt that, along the coast between Barra head and 50 Kebock head, strong and long-continued southerly and south-westerly winds increase both the duration and the rate of the north- and north-east-going stream, and correspondingly reduce the south-west- and

Chart 2635.

south-going stream ; similarly, strong and long-continued northerly and north-easterly winds increase both the duration and rate of the south-going stream between Rubha Geal and Rubha Quidnish, and correspondingly reduce the north-going stream. Southerly winds probably have little effect between Rubha Ouidnish and Rubha Geal, or northerly winds between Kebock head and Barra head, but the effects of both southerly and northerly winds are greatest between Rubha Quidnish and Kebock head, and along this coast, and in the channels in the Little Minch generally, the effects of wind are probably considerable.

Chart 1144, plan of Sound of Berneray.

Berneray.—Berneray has a wedge-shaped appearance from north-eastward or south-westward, the western end of the island, where it attains an elevation of 625 feet (190^m5), being its highest part (see views on plan and on chart 2474) ; the southern coast consists of rugged cliffs varying from 143 feet (43^m6) at its eastern to 619 feet (188^m7) at its western end.

In 1948 Berneray was uninhabited, except for the lighthouse 20 keepers.

During the breeding season, the high cliffs of Berneray and Mingulay swarm with sea-birds ; both the birds and their eggs, are used for food.

Sgeir Mör, about $1\frac{1}{2}$ cables south-eastward of the eastern extremity 25 of Berneray, is a rocky islet, 35 feet (10^m7) high ; there is a boat channel close northward of this islet.

Light.—Radiobeacon.—Barra Head light is exhibited, at an elevation of 683 feet (208^m2), from a white stone tower, 60 feet (18^m3) in height, situated on Sron an Duin (*Lat. 56° 47' N., 7° 39' W.*), near the 30 western extremity of Berneray. (See view facing page 307.) A radio-beacon transmits from this light-tower. There is a radio telephone at the light-tower.

Tidal streams.—At a position 3·6 miles 193° from Barra Head light-tower, the stream is more or less rotatory clockwise, but the 35 east-going stream may be said to begin -0500 Stornoway (+0310 Dover), and the west-going stream may be said to begin +0115 Stornoway (-0300 Dover) ; the spring rate in each direction is 1·5 knots. Off the coast between Berneray and the Sound of Barra the streams begin about 2 hours earlier than off Barra head. See Table 40 of Tidal streams for K09 and K06 stations in Tidal Streams European Waters Part II 1948.

Between Berneray and the Sound of Barra the streams run in the general directions of the coast ; the north-east-going stream begins +0515 Stornoway (+0100 Dover) ; the south-west-going stream 45 begins -0045 Stornoway (-0500 Dover) ; the spring rate in each direction is about 1·5 knots off the salient points, but is less in the bays, and also farther to seaward. See also Table of Tidal streams for station J08 in Tidal Streams European Waters, Part II 1948.

Near the eastern entrance to all the sounds a westerly set will be 50 experienced whilst the west-going stream is running in them, or approximately during the south-west-going stream along the coast. See also page 375.

Charts 1144, plan of Sound of Berneray, 2474.

Mingulay.—Mingulay (see view on chart 2474), which was un-

Charts 1144, plan of Sound of Berneray, 2474.

inhabited, in 1948, is situated about 4 cables northward of Berneray ; it attains an elevation of 885 feet (269^m7). This island on easterly or westerly bearings shows four rounded summits, which become merged into three on north-easterly or south-westerly bearings.

5

The western coast of Mingulay consists of precipitous cliffs, from 115 to 747 feet (35^m0 to 227^m7) high ; the southern coast is not very bold, though there are no off-lying rocks, with the exception of Geirum Beag and Geirum Mòr (see below). Skipisdale, on the southern coast of the island, is the best landing place ; the eastern coast, although generally rugged, is less steep and slopes more gradually than the western. About the middle of the eastern coast is Mingulay bay with a sandy beach a quarter of a mile long ; landing may be effected in very moderate weather at either end of this beach, according to the wind, adjoining the rocks, but generally there is a swell on the shore. 15

Chart 1144, plan of Sound of Berneray.

Dangers.—Geirum Mòr, situated about one cable south-westward of the south-western extremity of Mingulay, is 162 feet (49^m4) high, with black cliffs ; there are no dangers beyond a quarter of a cable from this islet. Geirum Beag lies close east-north-eastward of Geirum 20 Mòr.

Twin rocks, about 5 cables north-westward of Geirum Mòr and three-quarters of a cable from the western side of Mingulay, are two above-water rocks, with a channel eastward of them. Sunk rock, lying 5 cables north-north-eastward of Twin rocks and half a cable 25 from the northern extremity of Arnamul, an islet close off the western side of Mingulay, is awash.

Chart 2474.

The Red Boy, situated close westward of the north-western extremity of Mingulay, is a remarkable detached rock.

30

Barnacle rock, Sgeir nam Uibhean, Solon Beag, and Solon Mòr, are four rocks or islets, lying close eastward of the north-eastern extremity of Mingulay ; there is a boat channel between them and Mingulay (*Lat. 56° 49' N., Long. 7° 38' W.*).

Anchorage.—Anchorage can be obtained, during westerly or north- 35 westerly winds, off the entrance to Mingulay bay, with the eastern extremity of Solon Beag, the south-easternmost of the four rocks mentioned above, open eastward of Rubha Domhain, the northern entrance point of the bay, in depths of from 9 to 10 fathoms (16^m5 to 18^m3) ; this anchorage is not, however, protected from the south- 40 westerly swell.

Chart 1144, plan of Sound of Berneray.

Sound of Berneray.—The Sound of Berneray, between Berneray and Mingulay, has a least width of $2\frac{1}{2}$ cables, and is free from dangers in the fairway. Comparatively smooth water will generally be experienced by vessels proceeding eastward through the sound.

45

Shelter rock, about $7\frac{1}{2}$ cables east-south-eastward of Gerium Mòr, and three-quarters of a cable from the northern side of Berneray, dries about 8 feet (2^m4) ; there is a channel, with a least depth of one fathom (1^m8), southward of this rock.

50

Tidal streams.—The stream appears to be affected by eddies ; close southward of Berneray and in the Sound of Berneray the east-going stream begins —0605 Stornoway (+0205 Dover) and runs for about $4\frac{1}{2}$ hours ; the west-going stream begins —0150 Stornoway

Chart 1144, plan of Sound of Berneray.

(—0605 Dover) and runs for about $8\frac{1}{4}$ hours ; the spring rate of the east-going stream is about 2.5 knots in the sound, and when it is running strongly, and the wind is in the east, there is turbulence at 5 the eastern end of the sound. Close southward of the island the spring rate of the east-going stream is about 2 knots ; the stream runs about east-south-eastward off the south-western coast of the island and about north-eastward off the south-eastern coast where there are overfalls, probably caused by the stream meeting a south-west-going 10 eddy from the sound. The west-going stream is weaker than the east-going stream.

Anchorage.—Anchorage can be obtained, unless there is a heavy sea running, with Shelter rock in line with the south-western extremity of Geirum Mòr, bearing 281° , and the storehouse, situated on the 15 northern side of Berneray, $2\frac{1}{2}$ cables south-eastward of Shelter rock, bearing 196° , in a depth of $4\frac{1}{2}$ fathoms (8^m2) ; the holding ground is good, firm sand, and the tidal streams are not felt here. This anchorage is sheltered with winds from south, through west, to north.

Very heavy squalls are experienced with southerly and south-20 westerly gales, but the swell is not felt.

Chart 2474.

Pabbay.—Pabbay, an uninhabited island, the south-western extremity of which is situated about $1\frac{1}{2}$ miles north-north-eastward of Mingulay, attains an elevation of 554 feet (168^m9). Rosinish, a long, 25 bare, rocky point, 133 feet (40^m5) high, extends south-eastward from the north-eastern point of the island, from which it is separated at high water. Dark, narrow, vertical fissures intersect the cliffs on the south-western coast of this island.

A rock, which dries, is situated one cable from the middle of the 30 western side of Pabbay, and a rock, with a depth of 3 fathoms (5^m5) over it, the same distance from the middle and most salient part of the northern side ; a rock, which dries, lies half a cable southward of the southern end of Rosinish. With the exception of these dangers the island is steep-to.

35 Bagh Ban, between the eastern side of Pabbay and the south-western side of Rosinish, is not suitable for anchorage : the head of this bight is sandy, and dries out one cable.

Sound of Mingulay.—The Sound of Mingulay, between Mingulay and Pabbay, is free from dangers in the fairway.

40 Outer Heisker (*Lat. $56^{\circ} 51' N.$, Long. $7^{\circ} 37' W.$*), situated in the western entrance to the sound, about 9 cables west-south-westward of the south-western extremity of Pabbay, is a rocky and nearly inaccessible islet, 120 feet (36^m6) high. Inner Heisker, lying about 6 cables eastward of Outer Heisker, is a group of three islets. Between 45 Outer and Inner Heisker the bottom is uneven, and in heavy weather the sea often breaks completely across this area ; if there is a heavy sea running a vessel proceeding through the sound should pass southward of these islets.

Tidal streams.—In Sound of Mingulay the east-going stream, 50 spring rate about 3 knots, begins +0500 Stornoway (+0045 Dover) ; the west-going stream, spring rate from 2 to 2.5 knots, begins —0145 Stornoway (—0600 Dover). During the east-going stream a heavy race extends about $3\frac{1}{2}$ cables eastward from the northern point of Mingulay. After passing through the sound, the east-going stream

Chart 2474.

turns southward and meets the east-going stream from the Sound of Berneray, and there are overfalls off the eastern side of Mingulay where the streams meet.

Sandray.—Sandray, an uninhabited island, the south-western extremity of which is situated about 2 miles north-eastward of Pabbay, is 672 feet (204^m8) high ; a large sandy patch on the eastern side of the island is a good landmark. 5

Flodday, an islet about 9 cables westward of the north-western extremity of Sandray, is 136 feet (41^m5) high ; its western coast consists of black cliffs. There is a natural arch through the centre of this island. 10

There are several rocks off the western side of Sandray.

A shoal, with a depth of 4½ fathoms (8^m2) over it, lies about 2 cables south-westward, and a bank, with a depth of 8 fathoms (14^m6) over it, 15 about 3 cables south-eastward of the southern extremity of Sandray.

Eilean Mòr, lying close south-eastward of the eastern extremity of Sandray, is a bare, black, rocky islet, with a peak about 30 feet (9^m1) high.

A bank, with a least depth of 7 fathoms (12^m8) over it, is situated 20 1½ miles east-north-eastward of Eilean Mòr ; it is reported that a dangerous sea for small vessels occurs in this vicinity during south-easterly gales.

Sound of Pabbay.—The Sound of Pabbay, between Pabbay south-westward, and Flodday and Sandray north-eastward, is a safe channel. 25

Lingay (*Lat. 56° 52' N., Long. 7° 35' W.*), situated in the centre of the western entrance to the sound, about 6 cables northward of the northern extremity of Pabbay, is 263 feet (80^m2) high ; its coasts are cliffy and moderately bold. From north-westward Lingay shows a rounded summit falling steeply southward and sloping gradually 30 north-eastward to a low point.

A bank, with a depth of 8 fathoms (14^m6) over it, lies 4½ cables westward of Lingay.

Greanamul, an islet about 7½ cables eastward of Lingay, is 83 feet (25^m3) high ; a smaller islet lies close westward of Greanamul, and a 35 shoal bank extends about 2 cables south-south-eastward and the same distance west-north-westward of Greanamul. About midway between Lingay and Greanamul is a shoal, with a depth of 7 fathoms (12^m8) over it.

A vessel proceeding through the sound should give the northern 40 extremity of Pabbay a berth of 1½ cables, or pass northward of Lingay and Greanamul, taking care to avoid the shoal bank west-north-westward of Greanamul, and the 4½-fathom (8^m2) shoal 2 cables south-westward of the southern extremity of Sandray.

Tidal streams.—In mid-channel in the Sound of Pabbay, the east-going stream, spring rate from 3·5 to 4 knots, begins +0500 Stornoway (+0045 Dover) ; the west-going stream, which is weaker than the east-going stream, begins -0145 Stornoway (-0600 Dover). The east-going stream is strongest during about its first 3 hours. 45

Eddies form on both sides of the sound, and close inshore the streams begin about 3 hours earlier than in mid-channel. 50

Sound of Sandray.—Dangers.—Sound of Sandray, between Flodday and Sandray, on the south, and Vatersay, an island, about 4 cables northward of Sandray, on the north, requires local knowledge

Chart 2474.

for its navigation, as there are several dangers in or near the fairway.

A bank, with a depth of 4 fathoms (7^m3) over it, on which the sea frequently breaks, extends about 3 cables northward from Flodday,
 5 and the channel here is further narrowed by a shoal, with a depth of
 $1\frac{1}{2}$ fathoms (2^m7) over it, lying about 2 cables west-north-westward of
 the southern extremity of Vatersay and close off the south-western
 end of that island. A rock, which dries 2 feet (0^m6), lies close south-
 ward of the fairway, about 2 cables north-westward of the north-western
 10 extremity of Sandray. A chain of rocks extends about 4 cables south-
 eastward from the south-eastern extremity of Vatersay; Sgeir a Chlogat,
 the south-eastermost of these rocks, is 10 feet (3^m0) high
 and steep-to, but $1\frac{1}{2}$ cables south-south-eastward of it is a shoal, with
 a depth of $1\frac{1}{2}$ fathoms (2^m7) over it.

15 A vessel approaching Sound of Sandray from westward should, before the western extremity of Flodday (*Lat. $56^{\circ} 54' N.$, Long. $7^{\circ} 34' W.$*), bears more than 160° , bring the northern side of Sgeir a Chlogat in line with the southern extremity of Muldoanich (*see below*) and when within about half a mile of Sgeir a Chlogat she should steer to pass close
 20 southward of that rock, or fully half-way between it and the northern side of Sandray, as indicated by the pecked line on chart 2474, so as to avoid the shoal, with a depth of $1\frac{1}{2}$ fathoms (2^m7) over it, $1\frac{1}{2}$ cables south-south-eastward of Sgeir a Chlogat.

25 **Tidal streams.**—In the Sound of Sandray the streams appear to begin at the same times, and to run at the same rates, as the streams in the Sound of Mingulay; *see page 315.*

Charts 1144, plan of Castle bay and Approaches, 2474.

Vatersay.—Vatersay is divided into two parts by a low sandy isthmus, on each side of which is a bay; Bagh Siar, the western bay,
 30 has moderate depths, and is sandy near its head, but affords no anchorage; Vatersay bay, the eastern bay, is described on page 317. Heishival Mòr, the sunmit of the island, about one mile south-eastward of the north-western extremity of Vatersay, is 619 feet (188^m7) high. A vessel should not approach the western side of the northern part of
 35 Vatersay, because of overfalls.

Islands and dangers.—Muldoanich, about $1\frac{1}{2}$ miles eastward of the south-eastern extremity of Vatersay, is 499 feet (152^m1) high and rises precipitously from the sea, except on its western side. Muldoanich is steep-to, but from Rubh' a Mhorbhuiile, its north-western extremity,
 40 a chain of islets and rocks extends to Creag Mòr, the northern entrance point of Vatersay bay, $1\frac{1}{2}$ miles west-north-westward. There are channels of varying depths between these islets and rocks.

Chart 1144, plan of Castle bay and Approaches.

Foul ground extends about 2 cables westward and northward from
 45 Rubh' a Mhorbhuiile. Sgeirean Fiaclach, $3\frac{1}{2}$ cables west-north-westward of Rubh' a Mhorbhuiile, are a group of bare, rugged rocks, several feet high; a shoal bank, on which lie some rocks, which dry from 4 to 5 feet (1^m2 to 1^m5), extends about one cable south-south-westward from these rocks. A rock, which dries 3 feet (0^m9), lies about $2\frac{1}{2}$ cables
 50 westward, and a rock, awash, about $2\frac{3}{4}$ cables north-westward, respectively, of Sgeirean Fiaclach.

Sgeir na Miuce, about 5 cables north-westward of Sgeirean Fiaclach, consists of two rocky islets, situated close together, and a few feet high. There is a least depth of 3 fathoms (5^m5) in the channel between

Chart 1144, plan of Castle bay and Approaches.

Sgeirean Fiaclach and Sgeir na Mince, but care should be taken to avoid the dangerous rocks described above, and the channel should not be attempted without local knowledge.

Snuasimul, an islet, 38 feet (11^m6) high, is situated $3\frac{1}{4}$ cables east-south-eastward of Creag Mör (*Lat.* $56^{\circ} 56' N.$, *Long.* $7^{\circ} 29' W.$). Uinessan, 65 feet (19^m8) high, an islet joined to Creag Mör by a reef which dries, and has a sandy patch on its northern side, which is visible from northward. There is a very narrow channel close westward of Snuasimul, which is frequently used by small fishing craft ; a rock, which dries 3 feet (0^m9), lies on the western side of this channel ; local knowledge is essential.

Vatersay bay.—**Dangers.**—**Anchorage.**—**Beacon.**—Vatersay bay is sheltered from eastward by Muldoanich and the chain of islets and rocks described above. Am Meall, the southern entrance point, is 321 feet (97^m8) high, and rises steeply from the sea ; about $2\frac{1}{2}$ cables eastward and south-eastward of Am Meall is Masamul, an above-water and sunken reef ; the channel westward of this reef is foul.

Sgeir Vichalea, about 5 cables west-north-westward of Am Meall and $1\frac{1}{2}$ cables from the southern shore of the bay, dries 3 feet (0^m9) ; it is marked by a black iron framework beacon, 20 feet (6^m1) in height, surmounted by a barrel and the top elevated about 12 feet (3^m7) ; a shoal bank extends about half a cable northward from this beacon. A shoal, with a least depth of one foot (0^m3) over it, lies on the northern side of the bay, about $8\frac{1}{2}$ cables westward of the southern extremity of Creag Mör and $1\frac{1}{2}$ cables from the north-western shore of the bay.

Good anchorage can be obtained in Vatersay bay, in depths of from 7 to 8 fathoms (12^m8 to 14^m6), sand ; if anchored sufficiently far in, no swell is experienced. The head of the bay is a broad, low, sandy beach, with a dwelling-house and offices on the southern side, and a house on the north-western side.

Charts 1144, plan of Castle bay and Approaches, 2474.

Directions.—A vessel approaching Vatersay bay from south-eastward should pass from 2 to 3 cables southward of Muldoanich, and thence steer for the entrance of the bay ; when the bay has opened out she should steer for the house on the north-western side of the head of the bay, bearing 280° , which leads through the fairway, passing about $1\frac{1}{4}$ cables northward of Sgeir Vichalea, to the anchorage.

Chart 1144, plan of Castle bay and Approaches.

40

Sound of Vatersay.—**Light.**—The Sound of Vatersay, between Vatersay, Orosay and Sgeir Liath, on the south, and the south-western end of Barra, about one cable northward of Vatersay, on the north, is encumbered with rocks and shoals, and there are overfalls in places, so that local knowledge is necessary for its navigation. The sea breaks heavily in places off both entrances.

Orosay (*Lat.* $56^{\circ} 57' N.$, *Long.* $7^{\circ} 32' W.$), close eastward of the north-eastern extremity of Vatersay, is joined to it by a reef that dries. Sgeir Liath, about $3\frac{1}{4}$ cables east-south-eastward of the north-eastern extremity of Orosay, is a low rocky islet.

50

A light is exhibited, at an elevation of 22 feet (6^m7), from a white building, 20 feet (6^m1) in height, with a white hut close northward of it, on Sgeir Liath.

Tidal streams.—In the Sound of Vatersay the streams appear to

Chart 1144, plan of Castle bay and Approaches.

begin at the same time and to run at the same rates, as the streams in the Sound of Mingulay ; see page 314.

Charts 1144, plan of Castle bay and Approaches, 2770, 2474.

5 Barra.—Aspect.—Barra has many high hills and mountains, all of which, except Beinn Tangaval, 1,086 feet ($331^{\text{m}0}$) high, which is situated one mile east-north-eastward of the south-western extremity of Barra, have a peaked aspect on southerly bearings, but on easterly or westerly bearings they lose much of their peaked appearance ; Beinn 10 Tangaval has a rounded outline from all directions. Beinn Heaval, 1,254 feet ($382^{\text{m}2}$) high, 2 miles eastward of Beinn Tangaval, on northerly bearings, shows a sharp peak, with a double peak, about 200 feet ($61^{\text{m}0}$) lower, north-eastward of the summit. The island gradually rises from Beinn Erival, 848 feet ($197^{\text{m}5}$) high, at the northern end, to 15 Beinn Heaval, at the southern end of the island.

On the southern side of Barra, sheltered by Vatersay and Muldoanicb, is Castle bay, described below.

Chart 2474.

North-western coast.—The north-western coast of Barra consists 20 of rocky points alternating with sandy bays ; the most prominent points are steep-to, but usually a shoal bank extends about half a mile from the entrance to the bays. Doirlinn head, about 6 cables north-north-eastward of the western entrance point of the Sound of Vatersay, is a high vertical bluff, steep-to, and penetrated by a large 25 cavern.

Between Doirlinn head and Greian head, about $2\frac{3}{4}$ miles north-north-eastward, the north-western coast of Barra is much indented with sandy bights. Greian head, a salient promontory, is 140 feet ($42^{\text{m}7}$) high.

30 Charts 2770, 2474.

Between Greian head and Scurrival point, the northern extremity of Barra, which rises close within to Beinn Scurrival, 249 feet ($75^{\text{m}9}$) high, $3\frac{1}{2}$ miles north-eastward, the coast forms a bay. Foul ground extends about 4 cables northward about one mile within the termination of Greian head on its northern side ; there are several shoals in this vicinity, with a least depth of 2 fathoms ($3^{\text{m}7}$) over them.

The only place for a boat to land along the whole of the north-western side of the island is amongst the rocks about one mile southward of Greian head (*Lat. 57° 01' N., Long. 7° 32' W.*).

40 Chart 2770.

South-eastern coast.—The south-eastern coast of Barra is very foul, and is much indented with small rocky bights ; there are more rocks and shoals off this coast than off any other part of the eastern side of the Outer Hebrides. North bay, which is entered about 5 45 miles southward of Scurrival point, affords shelter to a few fishing-boats.

Chart 1144, plan of Castle bay and Approaches.

Castle bay.—Lights.—Anchorage.—Castle bay is entered between Orosay and Rubha Glas, $5\frac{1}{2}$ cables west-north-westward. Orosay, 50 situated $5\frac{1}{2}$ cables north-north-eastward of the northern extremity of Creag Mòr (page 316), is an islet with two hillocks, 54 feet ($16^{\text{m}5}$) high, and there is a ruined house on its western side ; the northern side of Orosay is connected with Barra by a reef that dries. Castle bay is an excellent harbour, with depths of from 3 to 9 fathoms ($5^{\text{m}5}$ to $16^{\text{m}5}$),

Chart 1144, plan of Castle bay and Approaches.

mud, in its northern part and fine sand in its southern part. The holding ground is good.

Kiessimul castle is a ruin on an islet in the north-eastern corner of the bay, about $3\frac{1}{2}$ cables northward of the northern extremity of Orosay. 5

Castle bay was formerly the centre of a considerable fishing industry but, in 1956, only a few fishing craft called for shelter.

In addition to the main pier, well-constructed of reinforced concrete and in excellent condition, there are a number of wooden piers on its shore ; these latter are now derelict and dangerous to use.

A light is exhibited, at an elevation of 23 feet ($7^{\text{m}}0$) from a column, 29 feet ($8^{\text{m}}8$) in height, situated on Dubh sgeir (*Lat. $56^{\circ} 56' N.$, Long. $7^{\circ} 29' W.$*), on the north-eastern side of the entrance to Castle bay, about 2 cables southward of the south-eastern extremity of Orosay. 15

A light is occasionally exhibited, at an elevation of 19 feet ($5^{\text{m}}8$), from a post, 13 feet ($4^{\text{m}}0$) in height, situated on the main pier, on the northern side of Castle bay.

Communications.—There is regular communication by sea with Glasgow, and vessels plying between Oban and Lochboisdale call regularly ; there is a post, telegraph, and telephone office here. There is a regular service between Barra and Glasgow. 20

Coastguard.—Life-saving.—An auxiliary watch is kept at Castle bay (*see page 10*). A motor lifeboat is stationed and a line-throwing apparatus is maintained at Castle bay ; *see page 9.* 25

Port facilities.—Supplies of meat, bread, and groceries may be procured from May to September, but the supplies are more limited in the winter. Water is laid on to the pier.

Dangers in eastern approach.—Light-buoys.—Beacon.—Bo Vich Chuan, the easternmost of the dangers, situated about $1\frac{1}{2}$ miles east-south-eastward of Rubha Mòr, the south-eastern extremity of Barra, has a least depth of 4 feet ($1^{\text{m}}2$) over it, and is steep-to ; it is marked on its southern side by a conical light-buoy, painted black, and exhibiting a white flashing light every six seconds. 30

Chart 2474.

35

The south-eastern extremity of Muldoanich (page 316), in line with the sandy patch on the eastern side of Sandray (page 315), bearing 238° , leads south-eastward of Bo Vich Chuan. *See view G on chart 2770.*

Chart 1144, plan of Castle bay and Approaches

40

A bank, with depths of from 7 to 10 fathoms ($12^{\text{m}}8$ to $18^{\text{m}}3$) over it, lies about 8 cables eastward of the north-eastern extremity of Muldoanich.

Bo Vich il a Vhetur, about one mile eastward of Rubha Mòr, is awash. Bo na Clerich, about 5 cables eastward of Rubha Mòr, has a least depth of 8 feet ($2^{\text{m}}4$) over it. 45

Sgeir a Scape, on which stands a red beacon, 2 feet ($0^{\text{m}}6$) high, is situated about 8 cables south-westward of Rubha Mòr and about 4 cables from the southern side of Barra, dries 3 feet ($0^{\text{m}}9$) ; northward of Sgeir a Scape there are a number of pinnacle rocks, but in the middle of the fairway between it and Barra there is a least depth of 17 feet ($5^{\text{m}}2$). 50

A shoal, with a least depth of one fathom ($1^{\text{m}}8$) over it, 2 cables southward of Sgeir a Scape, and $6\frac{1}{2}$ cables from the southern side of

Chart 1144, plan of Castle bay and Approaches.

Barra ; it is marked on its eastern side by a can light-buoy, painted red and exhibiting a white group flashing light showing two flashes every ten seconds.

5 A rocky shoal, with a least depth of 4 feet (1^m2) over it, is situated about 5 cables north-north-westward of Rubh' a' Mhorbhuiile ; numerous pinnacle rocks lie within 3 cables of it.

A rock, with a depth of 2 fathoms (3^m7) over it, lies about $3\frac{1}{2}$ cables eastward of Dubh Sgeir light-structure ; another rock, with a depth of 10 3 fathoms (5^m5) over it, is situated about the same distance farther southward.

Some rocks, which dry 3 feet (0^m9), extend about 2 cables north-north-eastward from the northern extremity of Uinessan (page 317). Uinessan North rock, about 3 cables north-north-eastward of Uinessan, 15 is awash ; westward of Uinessan North rock a shoal bank extends westward to the northern end of Vatersay.

Rocks extend 2 cables southward from the south-eastern extremity of Orosay, the eastern entrance point of Castle bay ; the middle one is 14 feet (4^m3) high, and Dubh sgeir (*Lat. $56^{\circ} 56' N.$, Long. $7^{\circ} 28' W.$*), 20 the southern rock, on which stands the light-structure, dries about 11 feet (3^m4) ; a shoal bank, with a depth of 16 feet (4^m9) over it, extends about a quarter of a cable southward from the light-structure. Foul ground extends about $1\frac{1}{2}$ cables from the south-western side, and about half a cable from the western side, of Orosay. Inisgeir, about one 25 cable north-westward of the south-western extremity of Orosay, is one foot (0^m3) high, and a shoal, with a depth of $2\frac{1}{2}$ fathoms (5^m0) over it, lies about one cable north-westward of it. An isolated rock, with a least depth of 6 feet (1^m8) over it, lies about $1\frac{1}{2}$ cables northward of Inisgeir.

30 **Tidal streams.**—In position, 1.6 miles 107° from Dubh Sgeir light-structure the tidal streams are weak and rotatory and reach a maximum in direction 070° , spring rate 0.5 knot, at -0500 Stornoway (+0310 Dover) and also a maximum in direction 210° , spring rate 0.5 knot at +0200 Stornoway (-0215 Dover). At other times the 35 streams are weak. In the narrow channel south-west of Dubh Sgeir the east-going stream attains a maximum rate of about 0.5 knot at springs at about -0500 Stornoway (+0310 Dover) and the west-going stream attains a maximum rate of about 0.5 knot at springs at about -0500 Stornoway (+0310 Dover) and the west-going stream attains 40 a maximum rate of about 0.4 knot at springs at about +0120 Stornoway (-0255 Dover). In Castle bay the streams are weak.

Charts 1144, plan of Castle bay and Approaches, 2474.

Anchorages.—Directions.—A vessel approaching from southward should pass from 2 to 3 cables eastward of Muldoanich, and steer 45 north-north-westward until the light-structures on Sgeir Liath and Dubh Sgeir are in line, bearing 283° , and then alter course on to this alignment. After passing Sgeir a Scape course should be altered to 270° until the right-hand side of the gap between Vatersay and Barra is in line with the right-hand side of the white hut on Sgeir Liath, 50 bearing $287\frac{1}{2}^{\circ}$. She should then steer on this alignment, which leads southward of Dubh Sgeir in deep water but it is very narrow and great caution is necessary.

When Inisgeir is in line with the Roman Catholic church, bearing about 010° , a course may be altered for Castle bay, care being taken to

Charts 1144, plan of Castle bay and Approaches, 2474.

avoid the $2\frac{1}{2}$ -fathom ($4^{\text{m}} 6$) shoal one cable north-westward of Inisgeir.

The small bight east-north-eastward of Kiessimul castle affords good anchorage for very small vessels, in depths of from 2 to 3 fathoms ($3^{\text{m}} 7$ to $5^{\text{m}} 5$) ; the best approach is northward of the castle, keeping 5 rather nearer to the northern shore, on which is the village. The Roman Catholic church, situated in this village, about $1\frac{1}{2}$ cables north-north-eastward of the castle, has a square tower with a clock.

Small vessels can anchor close westward of Kiessimul castle in a depth of 4 fathoms ($7^{\text{m}} 3$). Vessels of moderate size should anchor with 10 the castle bearing about 046° in a depth of 6 fathoms ($11^{\text{m}} 0$).

Bagh Beag is a loch, the narrow entrance to which is situated about $5\frac{1}{2}$ cables north-westward of Inisgeir ; it affords excellent anchorage for small craft, in depths of from one to 5 fathoms ($1^{\text{m}} 8$ to $9^{\text{m}} 1$). A rock, which dries 9 feet ($2^{\text{m}} 7$), lies in the middle of the entrance, which 15 elsewhere dries 5 feet ($1^{\text{m}} 5$).

At the northern end of Bagh Beag there is a rock which dries 5 feet ($1^{\text{m}} 5$) ; it can almost always be identified when covered by the long trailing weed which floats on the surface.

Bagh Beag can only be entered at slack water, and then by eye, 20 leaving the rock to port ; at other times the strength of the tidal stream renders navigation impracticable and dangerous.

A vessel approaching the Sound of Vatersay from north-eastward must keep Beinn Scrien, the 603-foot ($183^{\text{m}} 8$) hill on Eriskay, $10\frac{1}{2}$ miles north-north-eastward of the northern extremity of Muldoanich, bearing not more than 014° , and open eastward of the eastern extremity of Gighay, an island $3\frac{1}{2}$ miles south-south-westward of Beinn Scrien, until the south-eastern extremity of Muldoanich (*Lat. $56^{\circ} 55' N.$, Long. $7^{\circ} 27' W.$*) is in line with the sandy patch on the eastern side of Sandray, bearing 238° , which transit should be steered on until the 30 light-structures on Sgeir Liath and Dubh Sgeir are in line, bearing 283° .

Chart 1144, plan of Castle bay and Approaches.

Prohibited anchorage.—Anchorage is prohibited, on account of telegraph cables, in an area, indicated by pecked lines on the chart, 35 south-eastward of Barra ; see page 7.

Chart 2770.

SOUND OF BARRA.—The Sound of Barra, between the north-eastern end of Barra and the southern end of South Uist, is from $3\frac{1}{2}$ to 7 miles wide, but a great part of this space is occupied by islands, 40 islets, and rocks. The south-western side of the sound extends from Bruernish point, 4 miles north-north-eastward of the northern extremity of Muldoanich (page 316), to Fiaray, an island, $2\frac{1}{2}$ cables north-north-eastward of Scurrival point, the northern extremity of Barra. The north-eastern side of the sound extends from Ru Melvick, the south-eastern extremity of South Uist, to Orosay, $6\frac{1}{2}$ miles west-north-westward. 45

The bottom towards the middle and southern portions of the sound is clear shelly sand, with patches of grassy weed in places over which the depths shoal a few feet, but in daylight these patches are visible 50 and easily avoided. Towards the northern portion of the sound, the bottom is rocky and very uneven, and the shoals are only marked by breakers.

Chart 2770.

The southern islands and shores are rocky, with a good deal of heather, but the northern have sandy bays and green sward.

The south-eastern entrance to the Sound of Barra is well defined, 5 and lies between Hellisay and Gighay, two islands lying about $1\frac{1}{2}$ and $3\frac{1}{2}$ miles, respectively, north-eastward of Bruernish point, on the south, and Stack islands and Eriskay, on the north. Stack islands are situated $1\frac{1}{2}$ miles north-eastward of Gighay, and Eriskay is close northward of Stack islands ; Weaver's castle is situated at the southern end 10 of Stack islands (see view H on chart 2770).

The north-western approach between Fiaray and Orosay is not easily distinguished until the entrance to the sound bears about 124° , when Weaver's castle will be visible, but the sound is encumbered with shoals, and great caution is necessary when approaching it in a large 15 vessel.

No local pilot or fisherman is capable of piloting a large vessel through the sound, but a vessel coming from eastward can proceed to Oitir Mör, the anchorage northward of Hellisay and Gighay, without assistance.

20 Aspect.—Bruernish point rises to a hill, 303 feet (92^m4) high.

The northern end of Barra (*Lat. $57^{\circ} 03' N.$, Long. $7^{\circ} 27' W.$*) terminates in a peninsula, which is connected with the island by a low neck of land, with small sand-hills, over which the sea nearly washes at high tides ; the southern end of this neck of land is bounded by the fall 25 of Beinn Erival (page 318), terminating in a steep brae.

Beinn Eoligarry, $1\frac{1}{2}$ miles northward of Beinn Erival, is a green hill, 332 feet (101^m2) high, falling rather steeply westward, and having on its north-eastern slope the two-storeyed slated house of Eoligarry, with offices adjoining, showing prominently from Oitir Mör, but scarcely 30 noticeable from north-eastward. Dun Scurrival, 5 cables north-westward of Beinn Eoligarry, rises very steeply to a narrow truncated top, on which are the remains of an old building ; it is a good mark, but it is obscured by Beinn Scurrival when bearing between 180° and 200° . Beinn Scurrival (page 318) has a plain flat summit ; it terminates 35 northward in the high ground of Scurrival point, and falls southward rather abruptly to low swampy ground.

About $1\frac{1}{2}$ cables south-eastward of Eoligarry house, are the ruins of several ecclesiastical buildings, and adjacent to them is a burial place with several tombstones.

40 Orosay, about 2 miles south-south-eastward of Scurrival point and close off the eastern side of the peninsula, from which it is separated by the Sound of Orosay, a narrow channel which dries, is covered with heather and grass, and, from eastward, shows smooth sloping sides, rising to a flat summit, 121 feet (36^m9) high ; from the southward the 45 island assumes an irregular shape.

Ru Melvick, the south-eastern extremity of South Uist, is a bold rocky headland, 481 feet (146^m6) high, terminating in a bare rock, 35 feet (10^m7) high, which is steep-to.

Easaval, a long, flat-topped hill, 747 feet (227^m7) high, is situated 50 $3\frac{1}{2}$ miles west-north-westward of Ru Melvick ; from northward or southward it shows a long flat summit ; the northern shoulder, a very decided spur terminating in a steep face, extends westward from the highest part.

Pollachar inn, standing on the shore, at the south-western extremity

Chart 2770.

of South Uist, about $1\frac{1}{2}$ miles west-south-westward of Easaval hill (*Lat. $57^{\circ} 07' N.$, Long. $7^{\circ} 20' W.$*), is a two-storeyed slate house, and is visible from north-westward.

Islands and dangers on south-western side of south-eastern entrance.—Several islets and rocks, some of which dry, extend about $6\frac{1}{2}$ cables southward and $4\frac{1}{2}$ cables south-south-eastward from Bruernish point. Sgeir Fiaclach Beag, the southernmost of these rocks, is 5 feet ($1^m 5$) high. Sgeir Fiaclach Mòr, near the south-eastern edge of this foul area, is 2 feet ($0^m 6$) high; some rocks, which dry about 14 feet 10 ($4^m 3$), lie about $1\frac{1}{2}$ cables east-south-eastward of Sgeir Fiaclach Mòr. Bo na clach Mòr, situated about 4 cables south-south-eastward of the southern end of Sgeir Fiaclach Beag, has a least depth of 4 feet ($1^m 2$) over it; a rock, with a depth of 15 feet ($4^m 6$) over it, lies 8 cables south-south-eastward of the southern end of Sgeir Fiaclach Beag. 15

Curachan rock, about $5\frac{1}{2}$ cables east-south-eastward of Sgeir Fiaclach Mòr, is 32 feet ($9^m 8$) high, and is a good mark for identifying the entrance to North bay (page 318). A shoal, with a depth of 6 feet ($1^m 8$) over it, lies about three-quarters of a cable south-south-eastward, and rocks, with depths of from 4 to 8 feet ($1^m 2$ to $2^m 4$) over them, lie 20 from 2 to $3\frac{1}{2}$ cables north-eastward of Curachan rock; a rock awash lies $2\frac{1}{2}$ cables north-north-eastward, of Curachan rock.

There is a deep channel, about $1\frac{1}{2}$ cables wide, south-eastward of the rocks close east-south-eastward of Sgeir Fiaclach Mòr.

There are several islands and islets on the south-western side of the south-eastern entrance to the Sound of Barra; Flodday and Fuiay are the two south-western islands of this group. Flodday, 123 feet ($37^m 5$) high, situated about one mile north-eastward of Bruernish point, is covered with grass and heather, but its south-western extremity, Rubh' a Chaolais, is bare, low, and rocky; it should not be closed to within the distance of $1\frac{1}{2}$ cables. Beatson's shoal, lying about 4 cables southward of the southern end of Flodday, has a least depth of 8 feet ($2^m 4$) over it. 30

Beinn Scrien (page 320), bearing 013° and just open eastward of the south-eastern extremity of Gighay (page 322), leads 4 cables south-35 eastward of Beatson's shoal.

A rock, with a depth of 2 feet ($0^m 6$) over it, lies about $2\frac{1}{2}$ cables north-north-eastward of the eastern extremity of Flodday, in the fairway of the south-eastern entrance of the Sound of Hellisay, which is the channel between Flodday and Fuiay, on the south, and Hellisay, 40 on the north. Rubh' an t-Seana Bhalla, the western extremity of Hellisay, in line with Eoligarry house (page 322), bearing about 306° , leads about $1\frac{1}{2}$ cables north-eastward of this rock.

Snagaras, 29 feet ($8^m 8$) high, one cable northward of the north-western extremity of Flodday (*Lat. $57^{\circ} 00' N.$, Long. $7^{\circ} 21' W.$*), is a 45 rocky, grassy-topped islet. Irishman rock, $3\frac{1}{2}$ cables south-westward of Snagaras, in the narrow channel between Flodday and Fuiay, has a depth of 6 feet ($1^m 8$) over it. Rubba na h Uamh, the south-eastern extremity of Hellisay, bearing about 064° and showing through Caolas Snagaras, the channel between Snagaras and Flodday, leads close 50 north-westward of Irishman rock.

Fuiay, close westward of Flodday, is 346 feet ($105^m 5$) high, and from north-westward shows a prominent peak. Several islets extend about $6\frac{1}{2}$ cables north-westward from Fuiay.

Chart 2770.

Fuiay rock, and another rock, are two detached heads, lying about $2\frac{1}{2}$ cables and $3\frac{1}{2}$ cables north-westward, respectively, of Snagaras, and have depths of 6 feet (1^m8) over them. The northern extremity of Snagaras in line with Rubha na h Uamh, bearing about 070° , leads southward of these rocks.

Hillisay has two distinct peaks, Meall Mòr, near the south-eastern end of the island, being 235 feet (71^m6) high, and Beinn a Charnain, the north-western peak, 236 feet (71^m9) high; the former shows a vertical face, 200 feet (61^m0) high, westward, and is distinctly marked with orange-coloured lichens near the top; the hill terminates in Rubha na h Uamh, which is steep and bold.

Gighay, close eastward of Hillisay, is the north-easternmost of the group of islands and islets on the south-western side of the south-eastern entrance to the Sound of Barra; it attains an elevation of about 300 feet (91^m4), with a cliffy face south-westward; Meall an Laoigh, the north-eastern extremity, appears from south-eastward as a high flat point terminating in a hummock and is steep-to. An Laogh, one cable north-westward of Meall an Laoigh, is 12 feet (3^m7) high; it is separated from the coast by a narrow channel, with a depth of 24 feet (7^m3). About $2\frac{1}{2}$ cables westward of An Laogh, a spit, with a depth of 3 feet (0^m9) over it, extends half a cable offshore.

The channel between Hillisay and Gighay can only be used by boats.

Islands and dangers on north-eastern side of south-eastern entrance.—Buoy.—Binch rock, about $1\frac{1}{2}$ miles east-north-eastward of Meall an Laoigh and $8\frac{1}{2}$ cables southward of Stack islands (*Lat.* $57^\circ 03' N.$, *Long.* $7^\circ 18' W.$), has a depth of 11 feet (3^m4) over it, and is marked on its south-eastern side by a spherical buoy, painted red and white in horizontal bands and surmounted by a St. George's cross.

30 Charts 2770, 2474.

Hartamul (page 325) in line with Rubha na li Ordaig (page 350), bearing 019° , leads eastward of Binch rock, and the eastern extremity of Lingay (page 327), in line with the western side of Orosay (page 322), bearing 327° , leads westward of Binch rock.

35 Chart 2770.

Eilean Leathan, the southernmost and highest of Stack islands, has on it the ruins of Weaver's castle, 162 feet (49^m4) high; Eilean Leathan is steep-to, but foul ground extends a short distance from the coasts of the other islands of this group. Galeac, about $5\frac{1}{2}$ cables east-north-eastward of Weaver's castle, is a rock, about 9 feet (2^m7) high, and is steep-to, except on its eastern side; a rock, with a depth of 4 feet (1^m2) over it, lies about $1\frac{1}{2}$ cables north-eastward of Galeac; Roderick rock, known locally as Rorie's ashes, about $3\frac{1}{2}$ cables north-north-eastward of Galeac, dries one foot (0^m3).

45 A rock, with a depth of 14 feet (4^m3) over it, lies about $1\frac{1}{2}$ miles eastward of Weaver's castle. A rock, with a depth of 22 feet (6^m7) over it, lies about $1\frac{1}{2}$ miles east-north-eastward of the castle; an obstruction was reported, in 1949, to lie about one cable southward of the rock, with a depth of 22 feet (6^m7) over it.

50 Charts 2770, 2474.

Muldoanich (page 316), bearing 213° and just open south-eastward of Rubha na h Uamh, leads close south-eastward of Galeac, of the rock, with a depth of 4 feet (1^m2) over it, north-eastward of Galeac, and of Roderick rock.

Chart 2770.

Eriskay lies close northward of Stack islands, from which it is separated by the Sound of Stack, a narrow channel encumbered with rocks. Beinn Scrien (page 320), its summit, is a sharp well-defined peak ; about half a mile from the southern end of the island is Beùn Stack, 397 feet (121^m0) high. The island is separated from South Uist, $5\frac{1}{2}$ cables north-eastward, by the Sound of Eriskay.

Hartamul, $6\frac{1}{2}$ cables southward of Ru Melvick, is 78 feet (23^m8) high, with a grassy summit ; some above-water and sunken rocks extend about $1\frac{1}{2}$ cables north-eastward from this islet. Red rocks, a group of sunken rocks with narrow channels between them, extend $4\frac{1}{2}$ cables south-south-westward from Hartamul ; the southernmost rock is awash, and a rock, $2\frac{1}{2}$ cables south-south-westward of Hartamul, dries 4 feet.

Charts 2770, 2474.

15

Rubha na h Ordaig (page 350), bearing 014° and well open eastward of the above-water rocks north-eastward of Hartamul, leads eastward of Red rocks.

Chart 2770.

Bo Reme, about 4 cables west-south-westward of Ru Melvick and about $1\frac{1}{2}$ cables offshore, dries 4 feet (1^m2). There is a deep channel between Hartamul (*Lat. $57^\circ 05' N.$, Long. $7^\circ 14' W.$*) and Bo Reme, but there are two shoals, with a depth of 30 feet (9^m1) over them, in the channel, one $1\frac{1}{2}$ cables north-north-eastward and the other $3\frac{1}{2}$ cables north-north-westward, of Hartamul.

25

A shoal, with a depth of 12 feet (3^m7) over it, lies about one mile westward of Ru Melvick and $2\frac{1}{2}$ cables eastward of Roshinish point, the north-eastern extremity of Eriskay. A shoal, with a depth of 15 feet (4^m6) over it, lies about $7\frac{1}{2}$ cables westward of Ru Melvick and $1\frac{3}{4}$ cables from the southern coast of South Uist. Ruhha Dubh rock, about 8 cables westward of Ru Melvick and $1\frac{1}{2}$ cables offshore, dries 4 feet (1^m2).

The northern extremity of Calvay, an islet, 67 feet (20^m4) high, 2 cables north-north-eastward of Roshinish point, in line with Cnoc Mòr, a hill 2 miles west-north-westward of Calvay, bearing 284° , leads 35 southward of Bo Reme and Rubha Dubh rock.

Islands and dangers in Sound of Barra.—Beacons.—Greanainmul, about $8\frac{3}{4}$ cables north-westward of the western extremity of Hellisay, is near the northern end of a group of islets and rocks, which extends to within $2\frac{1}{2}$ cables of the north-western side of Hellisay ; 40 it is flat, 15 feet (4^m6) high, covered with grass, and is the only noticeable islet of this group ; rocks, which dry about 12 feet (3^m7), extend about $1\frac{1}{2}$ cables westward of Greanainmul, and a shoal bank extends about one cable farther westward.

Eoligarry house in line with Dun Scirrival (page 322), bearing 294° , leads close north-eastward of all the rocks between Hellisay and Greanamul.

Sgeir Meall na Hoe, about $4\frac{1}{4}$ cables north-north-eastward of Greanamul, has a least depth of 7 feet (2^m1) over it. The fall of Beinn Eival (page 318), bearing 257° and just open southward of Orosay 50 (page 322), leads close southward of Sgeir Meall na Hoe. See view E on chart 2770.

Fuday, the southern extremity of which is situated about $1\frac{1}{4}$ miles north-north-westward of Hellisay, rises in three rather flat hills, the

Chart 2770.

central and highest being 288 feet (87^m8) high ; the island is covered with grass, and a stream of good water, which is accessible at all times of tide, flows into Cordale Beag, a bight on the southern coast ; Cordale 5 Mòr, on the south-eastern coast of Fuday, is a small well-defined sandy bay.

From Rubha Carraig-chrom (*Lat. $57^{\circ} 03'$ N., Long. $7^{\circ} 22'$ W.*), the eastern extremity of Fuday, rocks and a shoal bank extend about $7\frac{1}{2}$ cables southward. Bonnet rock, near the southern edge of this bank, 10 has a depth of 6 feet (1^m8) over it. Vessels of any considerable draught should not pass between Sgeir Meall na Hoe and Fuday.

Several patches of grass weed, with depths of from 14 to 22 feet (4^m3 to 6^m7) over them, lie about 9 cables east-south-eastward of Rubha Carraig-chrom, and on a clear day have a very suspicious 15 appearance. Bo Tanna, about one mile eastward of Rubha Carraig-chrom, is a rock with two heads, which dry 2 feet (0^m6) : a bank, with a least depth of 10 feet (3^m0), rock, over it, extends $1\frac{1}{2}$ cables south-eastward from Bo Tanna. Cat rock, lying $8\frac{1}{2}$ cables eastward of Rubha Carraig-chrom, is awash ; McVean rock, about $7\frac{1}{2}$ cables east-north- 20 eastward of Rubha Carraig-chrom, has a least depth of 9 feet (2^m7) over it. A very strong overfall extends about half a mile eastward from the coast 2 cables northward of Rubha Carraig-chrom, which area, during the south-east-going stream, has the appearance of a shoal sandbank, but 11 feet (3^m4) is the least depth.

25 Old Man's point, on the western side of Eriskay, one mile north-north-westward of its southern extremity, in line with the northern shoulder of Beinn Serien, bearing 035° , leads south-eastward of Bo Tanna and Cat rock. The eastern extremity of Orosay, bearing 332° and open north-eastward of Lingay, leads close north-eastward of Bo 30 Tanna. Corran Ban, the eastern extremity of Fiaray, bearing 277° and just open northward of Ru Hornish, the northern extremity of Fuday, leads about $3\frac{1}{2}$ cables northward of these rocks, and northward of the overfall mentioned above. See view B on chart 2770.

The north-western coast of Fuday rises in high sandhills ; Dunan 35 Ruadh, the western extremity of Fuday, is a sandy point. Traigh na Reill is a sandbank extending about $2\frac{1}{2}$ cables west-north-westward from the north-western coast of Fuday ; Traillisker, on the north-western edge of Traigh na Reill, about $3\frac{1}{2}$ cables northward of Dunan Ruadh, is a wedge-shaped black rock, 4 feet (1^m2) high. Hornish 40 rocks, close northward of Traillisker, and other rocks in the vicinity, dry in patches. Old Woman's rock, 5 cables westward of the northern extremity of Fuday, dries. A shoal, with a depth of 9 feet (2^m7) over it, lies $4\frac{1}{2}$ cables west-north-westward of Ru Hornish.

Kate beacons (page 327), in line, bearing 273° , lead northward of this 45 9-foot (2^m7) shoal and Old Woman's rock.

In the Sound of Fuday, the channel separating the western side of Fuday (*Lat. $57^{\circ} 03'$ N., Long. $7^{\circ} 23'$ W.*) from the northern end of Barra, there are many rocks and shoals. Eilean Vialish, on the western side of this sound, about 6 cables west-north-westward of Dunan 50 Ruadh, is 11 feet (3^m4) high, with a few tufts of bent grass on it ; Vialish rocks extend $4\frac{1}{2}$ cables north-north-eastward from Eilean Vialish and dry in large patches. Archie rock, $3\frac{1}{2}$ cables north-north-westward of Dunan Ruabh, dries. The Sound of Fuday is only navigable at low water by boats.

Chart 2770.

McGillivray patch, about $9\frac{1}{2}$ cables west-south-westward of Old Man's point, has a depth of 8 feet (2^m4), rock, over it ; Kate beacons in line, bearing 273° , lead close northward of this patch, and Corran Ban, bearing 277° and just open northward of the northern extremity ⁵ of Fuday, leads through the fairway between it and Bo Tanna. See view B on chart 2770.

Maxwell rock, about $8\frac{1}{2}$ cables westward of Old Man's point, is awash ; between Maxwell rock and McGillivray patch there are some shoals, with depths of from 12 to 14 feet (3^m7 to 4^m3), weed, over them. ¹⁰

Lingay is covered with grass, and from southward shows a double summit, the western and highest being 161 feet (49^m1) high, with several dark cavernous indentations breaking the coastline ; from north-westward it shows a single hill.

The area between Lingay and Eriskay, and between them and the ¹⁵ north-eastern shore of the Sound of Barra, is very foul, and can only be used by boats.

Big rock, about $1\frac{1}{2}$ cables west-south-westward of the north-western extremity of Lingay, dries 2 feet (0^m6) ; Beinn Scrien, bearing 088° and just open southward of Lingay, leads close southward of this rock. ²⁰

Drover rocks, about $4\frac{1}{2}$ cables northward of Ru Hornish, have a least depth of one foot (0^m3) over them ; between Drover rocks and Big rock the bottom is very irregular.

Fiaray, on the south-western side of the north-western entrance to the Sound of Barra, lies about $2\frac{1}{2}$ cables north-north-eastward of the ²⁵ northern extremity of Barra, from which it is separated by the Sound of Fiaray ; it rises to two rather flat summits, the western of which is 105 feet (32^m0) high, with a hollow between them. The coast of Fiaray is rocky, except at its eastern extremity, where Corran Ban, which is sandy, and from southward shows more like a sandy bay than ³⁰ a point. Foul ground extends off Fiaray, and it should not be approached within 4 cables, except on its western side where it can be approached to within about 2 cables.

Kate beacons (*Lat. $57^\circ 04' N.$, Long. $7^\circ 26' W.$*) are two white stone beacons on the north-eastern side of Fiaray ; the eastern beacon is ³⁵ surmounted by a wooden triangle, and is 12 feet (3^m7) in height, and 19 feet (5^m8) high ; the western beacon is surmounted by a diamond, and is 39 feet (11^m9) high. The beacons in line, bearing 273° , lead through Drover channel, the channel south-westward of Drover rocks.

The area between the eastern end of Fiaray and the north-western ⁴⁰ end of Fuday is foul.

Inner Temple rock, about $3\frac{1}{2}$ cables northward of the eastern Kate beacon, has a depth of 7 feet (2^m1) over it ; two shoals, with a depth of 6 feet (1^m8) over them, lie, one about $3\frac{1}{2}$ cables east-north-eastward, and the other about 2 cables north-eastward, of the eastern Kate ⁴⁵ beacon.

Temple rock, about $9\frac{1}{2}$ cables north-north-westward of the western Kate beacon, has a least depth of 8 feet (2^m4) over it. There are many other shoals in this vicinity.

Aird rocks, about 8 cables north-westward of the north-western ⁵⁰ extremity of Lingay, dry 2 feet (0^m6). Hasgeir Fiaray, about $1\frac{1}{2}$ miles north-westward of the north-western extremity of Lingay, is a large flat rock which dries 8 feet (2^m4) ; there are several rocks close to it, and a shoal bank extends about $3\frac{1}{2}$ cables west-south-westward, with

Chart 2770.

a depth of 10 feet ($3^{\text{m}}0$) over its extremity. Outer Hasgeir Fiaray, about 2 miles west-north-westward of the north-western extremity of Lingay, is a group of small rocks, which dries 7 feet ($2^{\text{m}}1$).

- 5 The north-eastern extremity of Gighay, bearing 138° and just open north-eastward of the eastern extremity of Fuday, leads about 4 cables south-westward of Outer Hasgeir Fiaray.

Washington reef, about 2 miles north-north-westward of the north-western extremity of Fiaray, has a least depth of 9 feet ($2^{\text{m}}7$), rock, over it, and there are heavy breakers on it in many places ; the heavy swell prevents an examination of this reef. In stormy weather there are heavy breakers about 5 cables south-eastward and south-westward of the south-western end of Washington reef.

Charts 2770, 2474.

- 15 Doirlinn head (page 318), bearing 196° and well open of Greian head (*Lat. $57^{\circ} 01' N.$, Long. $7^{\circ} 32' W.$*), leads westward of Washington reef and all other shoals in the north-western entrance to the Sound of Barra.

Chart 2770.

- 20 Orosay (page 322) lies on the north-eastern side of the north-western entrance to the Sound of Barra ; it is 98 feet ($29^{\text{m}}9$) high, and is only separated from the sandy Boisdale point, $1\frac{1}{4}$ cables east-north-eastward, by very high spring tides.

Submarine cables.—**Prohibited anchorage.**—Anchorage is prohibited on account of a submarine cable, indicated by a pecked line on the chart, in the Sound of Eriskay (page 325). *See page 7.*

Anchorages.—North bay is entered south-westward of Fuiay, and affords anchorage, about $1\frac{1}{2}$ cables west-south-westward of the north-western extremity of Fuiay, in depths of from 34 to 36 feet ($10^{\text{m}}4$ to $11^{\text{m}}0$). The rocks on the north-eastern side of this anchorage prevent a vessel proceeding sufficiently far in to be landlocked.

Small vessels can anchor in an inlet about half a mile farther westward, passing south-westward of Black islands, two small islands, 43 feet ($13^{\text{m}}1$) high, which are practically joined together, lying $4\frac{1}{2}$ cables westward of the north-western extremity of Fuiay, and anchoring about one cable west-north-westward of the western extremity of these islands, in a depth of about 36 feet ($11^{\text{m}}0$) ; as this anchorage is restricted vessels should moor. This anchorage is better sheltered than the anchorage described above ; a vessel proceeding to it should keep in mid-channel when passing south-westward of Black islands. Small quantities of provisions can be obtained at the head of this inlet about $1\frac{1}{4}$ miles westward of Black islands.

Small vessels can obtain secure anchorage in the Sound of Hellisay, about $1\frac{1}{2}$ cables westward of the northern extremity of Flodday, in a depth of about 54 feet ($16^{\text{m}}5$). A vessel proceeding to this anchorage should be careful to avoid the rock, with a depth of 2 feet ($0^{\text{m}}6$) over it, lying $2\frac{1}{4}$ cables north-north-eastward of the eastern extremity of Flodday, and should keep about 2 cables from the south-western side of Hellisay until Snagaras bears about 225° . She should then steer to pass about one cable northward of Snagaras, and thence to the anchorage, taking care to avoid Fuiay rock.

Outer Oitir Mòr, north-westward of Hellisay and Gighay, is a safe anchorage at all times for large vessels, with depths of from 30 to 60 feet ($9^{\text{m}}1$ to $18^{\text{m}}3$), good holding ground. A vessel proceeding to

Chart 2770.

this anchorage should pass about 2 cables eastward and northward of An Laogh (page 324) and anchor about 5 cables north-north-westward of the western extremity of Gighay (*Lat. 57° 01' N., Long. 7° 21' W.*).

Inner Oitir Mòr, the anchorage westward of Greanamul, has depths of from 24 to 39 feet (7^m3 to 11^m9), clay and sand, with occasional patches of short weed ; the depths shoal rapidly north-westward of a line joining the southern extremity of Fuday and the south-eastern extremity of Orosay, and there are two shoals on that line, with depths of 4 and 2 feet (1^m2 and 0^m6) over them, situated 4 and 5½ cables, 10 respectively, of the southern extremity of Fiuday. This anchorage is safe in all winds.

A vessel proceeding to Inner Oitir Mòr should, after passing eastward and northward of An Laogh, steer for Greanamul, bearing about 260°, until within about 1½ cables from it ; she should then keep Eoligarry house in line with Dun Scurrival, bearing 294°, until the fall of Beinn Erival bears 257° and is just open southward of Orosay (see view E on chart 2770), when she can bear southward and anchor anywhere as soon as the western extremity of Orosay, off Boisdale point (page 328), bears about 355° and is open westward of Fuday. During 20 strong easterly or south-easterly winds vessels should proceed to the southern part of this anchorage, passing about 3½ cables westward of Greanamul.

On the coast eastward of Eoligarry house (page 322), about 6½ cables north-north-westward of the northern side of Orosay, is a tidal harbour 25 with a pier, where boats find shelter.

The Sound of Fiaray could be used in emergency by a small vessel at high water, and anchorage obtained, in a least depth of 14 feet (4^m3) when sufficiently out of the swell.

Acairseid Mòr, on the eastern side of Eriskay, about three-quarters 30 of a mile from its southern extremity, is a narrow inlet, the entrance to which is encumbered by rocks, and which can only be used by small vessels.

The Sound of Eriskay, between the northern end of Eriskay (*Lat. 57° 05' N., Long. 7° 17' W.*) and the southern end of South Uist, is used by small vessels, but the depths are so shallow that no permanent anchorage can be obtained ; rocks, sandbanks, and shoals extend from the southern coast of South Uist and obstruct the sound ; the bottom is for the most part covered with sea grass. See prohibited anchorage on page 328.

Tidal streams.—The streams run eastward and westward through the southern sounds but in the Sound of Barra they run inwards at both ends simultaneously, and outwards at both ends simultaneously. The south-east-going stream begins in the Sound of Fiaray and Washington channel, and the north-west-going stream begins in the Sound 45 of Hellisay, between Gighay and Stack islands, in Stack narrows and in the Sound of Eriskay +0525 Stornoway (+0110 Dover) ; the streams in the opposite directions begin -0050 Stornoway (-0505 Dover). The streams meet and separate in Oitir Mòr, and westward of Eriskay, where they are weak and variable.

In Drover channel, where the streams begin as in Washington channel, the south-east-going stream sets towards Fuday, and the north-east-going stream sets towards Drover rocks.

The times at which the streams begin to run north-eastward and

Chart 2770.

south-westward across the south-eastern entrance to the Sound of Barra, and north-westward and south-eastward into and out of the sound, differ by only a few minutes ; branches from the north-east-going stream run into the channels at the south-eastern end of the sound, whilst the south-east-going streams from the channels join the south-west-going streams across the entrance. After passing the entrance, however, the north-east-going stream divides, and whilst one branch continues along the coast, the other turns westward towards 10 Rubha na h Ordaig, off which it again divides and runs north-westward to Loch Boisdale, and south-westward to Ru Melvick and round that point into the Sound of Eriskay. The south-west-going coast stream appears also to run south-westward between Rubha na h Ordaig and Ru Melvick, and along that part of the coast the stream apparently 15 runs continuously south-westward.

Directions.—*From seaward.*—A vessel without local knowledge approaching the Sound of Barra from south-westward or westward would not be able to identify the sound until it is well open, when Beinn Scrien on Eriskay, bearing about 085° and showing northward 20 of Fiaray (*Lat. $57^\circ 04' N.$, Long. $7^\circ 27' W.$*), can be identified by its sharp peak.

Washington channel, between Temple rock and Washington reef, is the deepest channel leading into the Sound of Barra (*see pecked line on chart 2770*). When well westward of the entrance to this channel, a 25 vessel should steer for the dip between the southern fall of Easaval (page 322) and the northern fall of Cruachan, a hill 551 feet (167^{m9}) high, $1\frac{1}{4}$ miles eastward, bearing 072° (*see view C on chart 2770*) ; this alignment, which is, however, rather indefinite, leads through the entrance, in a least depth of 30 feet (9^{m1}), passing about 3 cables 30 northward of Temple rock, and about 2 cables southward of two shoals, one with a least depth of 24 feet (7^{m3}) over it, and the other with a least depth of 18 feet (5^{m5}) over it, situated $1\frac{1}{2}$ miles north-westward and the same distance northward, respectively, of the north-western end of Fiaray ; the sea breaks heavily on these two shoals.

35 The vessel should keep on this alignment until the north-eastern extremity of Gighay bears 138° and is open south-eastward of the eastern extremity of Fuday, or until Dunan Ruadh (page 326) is in line with the summit of Fuiay, bearing 160° (*see view A on chart 2770*), whence she should steer 150° , bringing more of Fuiay to show over 40 Fuday.

The vessel should not get farther eastward than the alignment of Traillisker (page 326) and Dunan Ruadh, bearing 180° , until Kate beacons (page 327) are in line, bearing 273° , which, astern, leads through Drover channel. It should be remembered that the south-east-going stream sets strongly towards the foul area westward of Ru Hornish, and the north-west-going stream towards Drover rocks.

When the eastern extremity of Lingay (page 327) bears 001° , the vessel should steer about 138° , until Corran Ban (page 326) bears 277° , astern, and is just open northward of Ru Hornish (*see view B on chart 2770*), which leads close northward of McVean rock, and between Bo Tanna and McGillivray patch.

When the eastern extremity of Lingay is in line with the western extremity of Orosay (page 322), bearing 327° , the vessel can steer south-eastward with this alignment, astern, into the Sea of the Hebrides.

Chart 2770.

The directions given above lead through the Sound of Barra in a least depth of 22 feet (6^m7), but the channel is very narrow in places.

Temple channel, between Temple and Inner Temple rocks, is a useful channel for vessels of moderate draught, on account of the comparative smoothness of the water, and the distinctness of the marks. The least depth is 16 feet (4^m9) ; it never breaks in the heaviest sea, except such breaking as might be caused by a weather-going tidal stream. 5

The southern extremity of Lingay (*Lat. 57° 05' N., Long. 7° 22' W.*) in line with the summit of Beinn Scrien, bearing 087° (*see view D on chart 2770*), leads through Temple channel, and the vessel should keep on this alignment until Dunan Ruadh is in line with the summit of Fuiay, bearing 180° (*see view A on chart 2770*), whence she should steer 137° , until Kate beacons are in line bearing 273° , whence she should proceed as directed above. 15

A vessel proceeding through either of the channels described above should pay attention to the set of the tidal streams (*see page 329*).

A vessel wishing to anchor in Oitir Mòr (page 322), if of sufficiently light draught to pass westward of McVean and Cat rocks, should keep Kate beacons in line until the eastern extremity of Lingay bears 001° , 20 astern, which leads to an anchorage, in depths of from 28 to 46 feet (11^m6 to 14^m0), after the fall of Beinn Erival bears 257° and is open southward of Orosay (page 322). *See view E on chart 2770.*

From the Sea of the Hebrides.—A vessel making the Sound of Barra from south-eastward should be careful not to mistake the Sound of Hellisay for the main entrance, which is north-eastward of Gighay, and which can be identified by Weaver's castle at the southern end of Stack islands. 25

The vessel should proceed into the sound steering for the eastern extremity of Lingay in line with the western extremity of Orosay, 30 bearing 327° , passing south-westward of Binch rock, and north-eastward of Bo Tanna. She should steer on this alignment until Corran Ban (page 326) bears 277° and is just open northward of Ru Hornish (*see view B on chart 2770*), which leads between McVean rock and McGillivray patch. When the south-western extremity of Orosay 35 bears about 333° and is just open south-westward of Lingay she should steer 317° until Kate beacons are in line, bearing 273° , which leads westward through the fairway of Drover channel. She can then steer to pass through either Temple or Washington channels, reversing the directions given above. 40

Charts 2770, 2474.

A vessel coming from north-eastward through the Sea of the Hebrides should note that Hartamul (page 324) in line with Rubha na h Ordaig, bearing 019° , leads eastward of Binch rock. When the eastern extremity of Lingay is in line with the western extremity of Orosay 45 (*Lat. 57° 08' N., Long. 7° 25' W.*), bearing 327° , she can proceed into the Sound of Barra, as directed above.

Chart 2474.

WESTERN COASTS OF SOUTH UIST, BENBECULA, AND NORTH UIST.—From the north-western end of the Sound of 50 Barra the western coasts of South Uist, Benbecula, and North Uist trend about 34 miles northward to Griminish point.

Tidal streams.—Between Barra head and Ard an Runair (page

Chart 2474.

335), the streams near the land run in about the direction of the coast ; the north-going stream begins -0425 Stornoway (+0345 Dover), and the south-going stream begins +0200 Stornoway (-0215 Dover) ; 5 the spring rate in each direction off the salient points and in the Sound of Monach is about 2 knots, but is less between the points. In the Sound of Causamul, off Ard an Runair, the streams begin about 1½ hours earlier, the north-going stream -0555 Stornoway (+0215 Dover), and the south-going stream +0030 Stornoway (-0345 Dover) ; 10 the spring rate in each direction is about 2 knots.

Southward of Heisker or Monach islands the north-going stream begins -0425 Stornoway (+0345 Dover), and the south-going stream begins +0200 Stornoway (-0215 Dover) ; northward of them the north-going stream begins -0410 Stornoway (+0400 Dover), and the 15 south-going stream begins +0215 Stornoway (-0200 Dover).

At a position 12.5 miles 173° from Shillay disused lighthouse the streams are very weak, spring rate in both directions 0.4 knot, but they gain strength as the shallow water round the islands is approached, and run strongly both westward and eastward of the islands and in 20 the channels between them ; the north-going streams from westward and eastward of the islands meet about 2 miles northward of the islands and form an eddy which runs southward towards them ; similarly the south-going streams meet about 2 miles southward of the islands and form an eddy which runs northward towards them.

25 The streams are strong everywhere in the shallow water round the islands ; their rates are not known, but may be about 3 knots at springs in both directions ; eddies probably form near the islets, rocks and shoals.

See also Table of Tidal streams for station J06 in Tidal Streams 30 European Waters, Part II, 1948.

Charts 2770, 2474.

South Uist.—Aspect.—The western portion of South Uist, where the inhabitants are chiefly congregated, is flat and low, the middle part is hilly, and the eastern part of the island is mountainous and 35 barren.

Easaval, at the southern end of the island, is described on page 322 ; other hills lie between it and Ru Melvick (page 322), Roneval, 1½ miles west-north-westward of Ru Melvick, 654 feet (199^m3) high, being the highest.

40 Chart 2474.

Boisdale hills, the next range northward, lying between Loch Boisdale and Loch Eynort, inlets on the eastern coast of the island, 3 and 7½ miles northward of Ru Melvick (*Lat. 54° 06' N., Long. 7° 14' W.*), respectively, have three distinct round sunmits, of which Stulaval, 45 the northernmost and highest, 4½ miles north-north-eastward of Easaval, is 1,221 feet (372^m2) high ; this range when seen from westward shows above all the other hills in its vicinity until close inshore, and it has much the same appearance when viewed from the eastward.

50 Benmore, the highest and northernmost range in South Uist, rises steeply from the sea, and has three distinct summits, Beinn Mòr, the southernmost, 3½ miles northward of Stulaval, 1,988 feet (605^m9) high, Feaveallach, 1½ miles north-north-eastward of Beinn Mòr, 1,717 feet (523^m3) high, and Hecla, which is prominent, three-quarters of a

Chart 2474.

mile northward of Feaveallach, 1,982 feet (604^m1) high ; on a north-westerly bearing Feaveallach shows as a cliffy summit.

Coast.—The western coast of South Uist is sandy, without indentations, and fringed with low grassy sandhills or machirs ; there are 5 farmhouses and buildings at intervals about one mile inland.

Between Orosay (page 321) and Ardivachar point, 15½ miles northward, the coast, though sandy, is interspersed with rocks, which dry, extending in places about one mile offshore, with patches, with depths of from 1½ to 4½ fathoms (2^m7 to 8^m2) extending about 2½ miles off-shore. There is no shelter or safe landing place for a boat along the whole coast ; in summer, the small boats engaged in lobster fishing are generally hauled up. At night, or in thick weather, a vessel should not approach this coast within a depth of less than 17 fathoms (31^m1).

Rubha Ardvule, 6½ miles northward of Orosay, is a salient point ; 15 about 2 miles north-eastward of this point and about half a mile inland are the ruins of a castle, Ormaclett.

Ardivachar point is low and rocky, but rises to an elevation of about 60 feet (18^m3) a short distance southward.

Ardivachar rocks, about one mile westward of Ardivachar point, 20 dry 9 feet (2^m7) ; foul ground, with several rocks, which dry, lies between the point and Ardivachar rocks.

Hornish point is situated about 1½ miles east-north-eastward of Ardivachar point ; about one mile southward of Hornish point is a Roman Catholic chapel, a long, plain, slated building with a belfry. 25

South ford.—South ford is the area between the northern side of South Uist and the south-western side of Benbecula, which dries. This area is from a quarter of a mile to 1½ miles wide. The western entrance to South ford is closed by a bar through which there is a shallow channel that shifts with gales, but generally in fine weather boats can pass up 30 the channel for half a mile at low water.

The ford itself is at Creagorry hotel, on the south-western side of Benbecula, about 2½ miles east-south-eastward of its south-western extremity (*Lat.* 57° 25' *N.*, *Long.* 7° 23' *W.*) ; it is about three-quarters of a mile wide, and the dangerous part is close to the Creagorry hotel. 35 The ford is dry at low water springs in fine weather, and horses can cross it until nearly half tide ; at high water springs there are depths of from 6 to 8 feet (1^m8 to 2^m4) at the shallowest part of the ford, near the hotel.

Charts 3168, 2474.

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Benbecula.—Aspect.—Benbecula, lying between South Uist and North Uist, 6½ miles northward, is joined to both these islands by sandy fords, which dry. Benbecula is low and flat, Rueval, its only hill, situated about 3½ miles northward of the southern extremity of the island, attaining an elevation of 403 feet (122^m8). The western coast 45 of the island is sandy.

The population of Benbecula is chiefly scattered along the western side of the island.

Chart 2474.

Coast.—From the northern point of the western entrance to South 50 ford the western coast of Benbecula trends about 3 miles northward and thence about 2 miles north-eastward to An Tom ; it is sandy with rocky points drying out from 2 to 3 cables offshore.

Considering that this coast is open to the Atlantic, but little swell

Chart 2474.

is felt, probably owing to the rough shallow ground extending $1\frac{1}{2}$ miles offshore ; the crews of vessels wrecked in this locality have generally been saved.

- 5 A shoal, with a depth of $4\frac{1}{2}$ fathoms ($8^{\text{m}}2$) over it, lies about $1\frac{1}{2}$ miles west-north-westward of the south-western extremity of Benbecula.

Red rock, about 2 miles north-westward of the south-western extremity of Benbecula, dries 2 feet ($0^{\text{m}}6$) ; between the south-western extremity of Benbecula and Red rock, foul ground and a bank, with 10 depths of less than 5 fathoms ($9^{\text{m}}1$) over it, extend about $1\frac{1}{4}$ miles offshore ; a shoal, with a depth of $4\frac{1}{2}$ fathoms ($8^{\text{m}}2$) over it, lies about 4 cables north-westward of Red rock.

The Roman Catholic chapel on South Uist (see above) in line with Beinn Mòr (page 335), bearing 156° , leads close north-westward of the 15 $4\frac{1}{2}$ fathom ($8^{\text{m}}2$) shoal 4 cables north-westward of Red rock.

Bo Ruag, about $4\frac{1}{2}$ miles north-westward of the south-western extremity of Benbecula and 3 miles offshore, is a large flat rock which dries 4 feet ($1^{\text{m}}2$), with four smaller ones at the distance of about one cable around ; the rocks are moderately steep-to, and generally marked 20 by breakers. Scrot Mòr (page 339), in line with Shillay disused lighthouse (page 337), bearing 292° , leads about $3\frac{1}{2}$ cables northward of these rocks.

Charts 3168, 2474.

North ford.—North ford or Oitir Mòr is the area between the 25 northern side of Benbecula and the southern side of North Uist, $1\frac{1}{2}$ miles northward ; it is so encumbered with islands and sandbanks that at low water springs a boat could scarcely pass through it. The track amongst the islands and sands from Benbecula to North Uist is very dangerous ; it is marked by beacons a quarter of a mile apart, 30 and two rows of weed-covered stones which show well against the white sand. The ford is practicable on foot in fine weather except from an hour before to an hour after high water, but in bad weather it is frequently impassable even at low water springs.

The deepest channel up to the ford is near the coast of Benbecula, 35 where the water is always smooth, and the entrance to it is southward of Balchshare, an island close northward of the northern extremity of Benbecula. Grimsay, an island, is situated at the eastern end of North Ford.

Tidal streams.—In the channels northward and southward of 40 Benbecula, the stream runs inwards at both entrances, and outwards at both entrances. In the western entrances the east-going streams, and in the eastern entrances the west-going streams, begin about +0530 Stornoway (+0115 Dover) ; the streams in the opposite directions begin about -0030 Stornoway (-0445 Dover).

45 In the southern channels the streams run inwards towards South ford, and, when the sands cover, meet over them ; similarly the out-going streams at first separate on South ford, but as the sands dry they run outwards from them. The streams are weak generally and nowhere exceed a rate of about 1.5 knots at springs.

50 In the northern channel the streams run inwards from both ends towards North ford, but as the sands cover the stream from westward runs across them and the streams meet in the channel south of Grimsay (see above) ; similarly the out-going streams at first separate in the channel south of Grimsay (Lat. $57^{\circ} 29' N.$, Long. $7^{\circ} 14' W.$), but when

Charts 3168, 2474.

the sands dry they run outwards from North ford in both directions.

The streams in both channels are affected by wind ; when the sands are covered and with westerly winds the meeting point of the streams moves to the eastward and, with strong and long-continued westerly winds, there may be east-going streams through both channels at all times when the sands are covered, but when the sands are dry the streams run inwards and outwards at both entrances. 5

Chart 2474.

North Uist.—Aspect.—The western side of North Uist is comparatively flat, a few hills attaining elevations of from 400 to 500 feet (121^m9 to 152^m4), and the coast is mostly sandy. On the eastern side of the island the hills are higher, and the coast consists of rocky cliffs of moderate heights, indented with many bays, creeks, and inlets, of which Loch Eport and Loch Maddy, 2½ and 5 miles north-north-east-15 ward of the south-eastern point of North Uist, respectively, are the principal ; there are numerous rocky islets off the eastern coast.

Charts 3168, 2474.

Beinn Eaval, the only mountain in North Uist, situated 1½ miles north-westward of the south-eastern point of North Uist, is 1,131 feet 20 (344^m7) high, and from a little distance offshore shows above all the other hills of the island ; on easterly or westerly bearings it appears wedge-shaped, sloping southward, and on the slope, 9 cables southward of the summit, is Beinn na h Aire, a peculiar and distinct double-topped hill, 468 feet (142^m6) high. 25

Chart 2474.

There are two hilly ridges on the eastern coast, of which South Lee, between Loch Eport and Loch Maddy, is 891 feet (271^m6) high, and Crogary na Hoc, 4½ miles north-eastward of South Lee, about 497 feet (151^m5) high. Crogary range, lying about 5 miles north-30 westward of South Lee, attains an elevation of 582 feet (177^m4) ; it has a peculiar mound in the middle and a peak at its south-eastern extremity. Beinn Mòr and Beinn Blàeac, two roundish-topped hills at the northern end of the island, about 2½ and 2¾ miles north-eastward, respectively, of the summit of Crogary range, are 619 and 485 feet 35 (188^m7 and 147^m8) high. See view facing page 346.

The inhabitants of North Uist are congregated chiefly on the north-western side of the island.

Coast.—Between the northern side of the western entrance to North ford and Rubha Mòr, 5½ miles north-westward, the south-western coast 40 of North Uist forms a bight in which lies Baleshare (page 334) and Kirkibost, the latter island is situated about a quarter of a mile north-westward of Baleshare. The western coasts of Baleshare and Kirkibost are generally low, sandy and fringed by a shoal bank extending some distance offshore, and with several outlying reefs and detached 45 rocks.

Rubha Mòr (*Lat. 57° 34' N., Long. 7° 29' W.*) is a low sandy point, with foul ground extending about 2½ miles west-south-westward from it ; on a hillock about one mile east-north-eastward of the western extremity of Rubha Mòr, is a square rock resembling a castle ; it is 50 visible from seaward with the cottages of Paible village close to it.

The coast between Rubha Mòr and Ard an Runair, 3 miles north-westward, is broken with alternate sandy bays and rocky patches. Ard an Runair, the western extremity of North Uist, which attains

Chart 2474.

an elevation of 60 feet ($18^{\text{m}}3$), is covered with grass. Thence to Griminish point, $3\frac{1}{4}$ miles north-north-eastward, the coast consists of a series of sandy bays and rocky points, with large patches of rock.

- 5 Hongary village stands about one mile east-north-eastward of Ard an Runair, and a quarter of a mile southward is the disused church of Goular; Balranald house is situated three-quarters of a mile east-south-eastward of the church, and between them the land is low; this house is visible from north-westward and northward, but from west-
- 10 ward it is obscured by sandhills.

- Carra Crom, 3 miles north-eastward of Ard an Runair, is a hill, 390 feet ($118^{\text{m}}9$) high, with a roundish summit. The south-western side falls rather suddenly to low ground, but the range continues one mile north-eastward. At the foot of the south-western side of Carra
- 15 Crom are three houses, two of which are visible from seaward; immediately above one of these two houses, on the summit of a small hill, is a dilapidated building called the Cross of Cille-pheadair.

- Tidal streams.**—Between Ard an Runair and Griminish point, the streams run in about the direction of the coast and of Griminish
- 20 point the north-east-going stream begins —0610 Stornoway (+0200 Dover), and the south-west-going stream begins +0015 Stornoway (−0400 Dover), or about a quarter of an hour earlier than off Ard an Runair (see page 335) but about 2 hours earlier than at Heisker and Hasker islands (see below and page 341); the spring rate in each
- 25 direction is about 2 knots off Ard an Runair, and probably about from one to 1·5 knots off Griminish point, but less off the coast between the points.

- Off-lying islands and dangers.**—**Heisker islands.**—Heisker or Monach islands, lying from about 4 to $7\frac{1}{2}$ miles west-south-westward of Rubha Mòr, consist of five islands, Shillay (*Lat. $57^{\circ} 32' N.$, Long. $7^{\circ} 42' W.$*), Ceann Iar, Shivinish, Ceann Ear, and Stockay. The Heisker group is separated from North Uist by the Sound of Monach.

- The islands are schistose and granite rocks covered with fine shelly sand, but great changes in the surface take place from the storms and Atlantic swell acting upon so light a soil.

There are some patches of grazing and cultivated land with a sparse population and a small village near the south-western end of Ceann Ear, the largest island of the group.

- 40 Caution is required when in the vicinity of these islands on account of their projecting position, low elevation, the numerous rocks and reefs which surround them and, in winter, the prevalent south-westerly and westerly gales with long dark nights.

- A very heavy swell and dangerous sea may be experienced near the
- 45 islands in winter.

In 1951, two banks, with depths of 23 fathoms and 28 fathoms ($42^{\text{m}}1$ and $51^{\text{m}}2$), rock, over them, were reported to lie, about 7 miles westward and $5\frac{1}{2}$ miles west-south-westward, respectively, of the disused lighthouse on Shillay.

- 50 **Tidal streams.**—See page 331.

Shillay.—**Dangers.**—**Tower.**—**Beacons.**—Shillay, 35 feet ($10^{\text{m}}7$) high, is so well protected by reefs that no heavy swell washes over it.

Odarum, close north-westward of the northern extremity of Shillay, with which it is connected by a reef that dries, is a bare rock. Eilcan

Chart 2474.

Siorruidh, a similar rock, lies close off the south-eastern end of Shillay, and is also connected with it by a reef that dries.

A reef extends about $5\frac{1}{2}$ cables north-eastward from the north-eastern side of Shillay, and some shoals and shoal water extend about one cable farther; this reef dries, and in places is a few feet high.

A narrow above-water and sunken reef, the north-western end of which is situated about $3\frac{1}{2}$ cables westward of the disused lighthouse on Shillay, extends about $1\frac{1}{2}$ miles south-eastward across the south-western entrance to the Sound of Shillay, the channel between Shillay 10 and Ceann Iar. Raiskeir, 20 feet (6^m1) high, 4 cables southward of Eilean Siorruidh, is the highest part of this reef; abreast Raiskeir this reef extends eastward to Ceann Iar.

A disused lighthouse consisting of a red brick tower, 133 feet (40^m5) in height, is situated on the western side of Shillay. 15

Two stone pile beacons, 12 feet (3^m7) in height, stand on Eilean Siorruidh; the rear beacon is black and surmounted by a diamond, the other, supposed to be white, is surmounted by a triangle.

Sound of Shillay.—Dangers.—The Sound of Shillay is protected from southward by the narrow reef described above, and by the rocks 20 in its south-western entrance; it is protected from northward by the reef extending north-eastward from the north-eastern side of Shillay; these reefs act as natural breakwaters, rendering the sound a safe harbour in heavy weather.

Calf Sgeir, situated $1\frac{1}{2}$ miles east-north-eastward of the disused lighthouse on Shillay and $2\frac{1}{2}$ cables from the north-western side of Ceann Iar, has a depth of 4 feet (1^m2) over it; the beacons on Eilean Siorruidh in line, bearing 231° , lead about one cable north-westward of this rock.

Shoals, with least depths of $2\frac{1}{2}$ and 3 fathoms (4^m1 and 5^m5) over them, lie $9\frac{1}{2}$ and $7\frac{1}{2}$ cables east-north-eastward of the disused lighthouse and $3\frac{1}{2}$ and $3\frac{1}{2}$ cables from the north-western side of Ceann Iar, respectively.

Stallion rock, about 4 cables east-north-eastward of the north-eastern extremity of Shillay, dries 7 feet (2^m1). Edward rock, about 35 $2\frac{1}{2}$ cables northward of the north-western extremity of Ceann Iar, dries 11 feet (3^m4).

Pol Bane, a sandy bay on the north-western side of the sound, abreast the south-eastern extremity of Shillay (*Lat. $57^\circ 32' N.$, Long. $7^\circ 42' W.$*), has a pier, where a landing can always be effected. 40 Boat pool, close northward of the north-western extremity of Ceann Iar, is a sandy inlet, which can be used for mooring or hauling up a boat.

Anchorage.—Directions.—A vessel can obtain anchorage in the Sound of Shillay about 4 cables eastward of the disused lighthouse on Shillay, in depths of from $4\frac{1}{2}$ to 6 fathoms (8^m2 to 11^m0), clay, but this anchorage is very restricted. 45

The entrance to this anchorage is from north-eastward, and the navigable channel is about half a cable wide.

A vessel should approach with the disused lighthouse on Shillay 50 bearing about 090° ; a prudent berth should be given to the reef south-westward of Shillay; thence she should steer in mid-channel between Shillay and Huskeiran (page 330); it should be noted that the rocks off the south-eastern end of Huskeiran are always visible, but

Chart 2474.

the northern part of the rocks, 3 cables westward of the disused lighthouse, and also the reef extending north-eastward from Shillay should be guarded against. The southern extremity of Stockay (page 339), 5 bearing 094° and open northward of Hearnish (see below), leads northward of the latter reef.

When Cnoc Mör (see below) bears 108°, the vessel can steer with the beacons on Eilean Siorruidh in line, bearing 231°, until the rocky islet on the northern side of the entrance to Boat pool bears 120°, when she 10 should anchor, and moor, in a depth of about 5 fathoms (9^m1) with the anchors northward and southward.

If the vessel is approaching the Sound of Sbillay from north-westward she should steer with the northern extremity of Stockay in line with Rueval (page 333), bearing 116°, which leads through the fairway, 15 passing between West Dureberg and Middle Dureherg (page 340), until the disused lighthouse on Shillay (*Lat. 57° 32' N., Long. 7° 42' W.*) bears about 204°, whence she should steer with the beacons on Eilean Siorruidh in line, bearing 231°, and proceed as directed above.

Ceann Iar.—Dangers.—Ceann Iar, which is situated about 3½ cables east-south-eastward of Shillay, is fringed by a reef, which extends about 2½ cables offshore in places. Hearnish, the north-eastern extremity of Ceann Iar, is low, rising about 2 cables south-westward to Cnoc Mör, a flat-topped hillock, 42 feet (12^m8) high; the coastal reef extends 1½ cables eastward from Hearnish; Clihish sgeir, 25 at the eastern edge of this reef, has a depth of less than 6 feet (1^m8) over it.

Shivinish, lying between Ceann Iar and Ceann Ear (page 339), is connected with the former on the west by a reef 1½ cables in width, which dries 12 feet (3^m7), ar.⁴ with the latter on the east by a sandbank, 30 2½ cables in width, which dries 6 feet (1^m8); the northern end of Shivinish terminates in a rocky point with several off-lying rocks which dry 6 feet (1^m8), under shelter of which, when uncovered, landing can often be obtained when there is a good deal of swell in Croic harbour, the bay formed between the eastern side of Ceann Iar and the western 35 side of Ceann Ear, northward of Shivinish.

Skal is a rocky spit, extending about half a cable north-eastward from the south-eastern extremity of Ceann Iar, and shoals extend about 1½ cables farther north-eastward. Heilleam, about 4½ cables east-north-eastward of the south-eastern extremity of Ceann Iar and 40 about 2 cables from the north-western side of Ceann Ear, is a rocky islet 7 feet (2^m1) high; it is foul on all sides, and a vessel entering Croic harbour should pass not less than 2 cables north-westward of Heilleam. The summit of Stockay (page 339), bearing 082° and just open northward of Gortinish (page 339), leads northward of the dangers northward 45 of Heilleam.

Anchorage.—Directions.—Croic harbour affords anchorage with good holding ground, generally sand, but in places clay under loose stones.

The greater part of this bay is sheltered from winds from east, 50 through south, to west-north-west. The anchorage is uncomfortable during winds between west and north, the swell then setting in round Hearnish (*Lat. 57° 32' N., Long. 7° 39' W.*) and causing a vessel to roll heavily. Gales from between north-west and north are the most dangerous.

Chart 2474.

A small vessel can obtain anchorage with Hearnish bearing 333° distant about 2 cables, in a depth of about 3 fathoms (5^m5) ; or, in a depth of $4\frac{1}{2}$ fathoms (8^m2), with Gortinish in line with the summit of Stockay bearing about 081° . A vessel entering should steer for the ⁵ summit of Shividish, bearing 181° , in order to avoid Clibish sgeir ; at low water when there is any swell the sea breaks on this rock.

Ceann Ear.—Dangers.—Ceann Ear has some sandy hillocks near its north-eastern end, the highest having an elevation of about 60 feet (18^m3). The village stands on low ground near the south-western ¹⁰ end of the island, and is visible from Croic harbour.

Foul ground and shoals extend about 5 cables westward from the southern part of Ceann Ear, and about $4\frac{1}{2}$ cables south-westward from its southern end. Scrot Mòr, close south-westward of the southern extremity of the island, is a rock, 35 feet (10^m7) high ; foul ground ¹⁵ extends about 7 cables eastward from the eastern side of Ceann Ear. Bo Carainach, about one mile eastward of the southern extremity of Ceann Ear, dries 6 feet (1^m8).

Port Roy is entered about 8 cables southward of Gortinish, the northern extremity of Ceann Ear ; it is the boat harbour of the island, ²⁰ and almost dries ; it is well protected by high rocks, and but little well is felt, though it is rather open to south-easterly winds.

Stockay. Dangers. Stockay, the eastern island of the Heisker group, is fringed by a reef which extends about one cable from it ; rock and shoals lie close off this island. Black rock, about $3\frac{1}{2}$ cables ²⁵ south-south eastward, and East rock, about 6 cables eastward of Stockay, dry ; the latter shows two detached heads at low water, the southern one of which dries 5 feet (1^m5). East rock is situated near the southern end of a large shoal, which has depths of from 2 to $3\frac{1}{2}$ fathoms (3^m7 to 6^m9) over it. There is a least depth of 3 fathoms (5^m5) in the ³⁰ fairway of the channel between Stockay and East rock.

A shoal, with a depth of $4\frac{1}{2}$ fathoms (7^m8) over it, rock, is situated about $1\frac{1}{2}$ miles east-south-eastward of the southern end of Stockay.

Stockay reef consists of uneven rocky ground extending $8\frac{1}{4}$ cables northward and $1\frac{1}{4}$ miles north-eastward from the northern end of Stockay (*Lat. $57^{\circ} 32' N.$, Long. $7^{\circ} 35' W.$*) ; there is a shoal, with a least depth of 2 fathoms (3^m7) over it, about one mile north-eastward of Stockay. Over the whole of this reef the sea breaks heavily, especially during springs, when it has the appearance of a mass of breakers.

The channel between Ceann Ear and Stockay is about 2 cables wide, ⁴⁰ with depths of from $1\frac{1}{2}$ to $5\frac{1}{2}$ fathoms (2^m7 to 10^m1) in the fairway, but the bottom is very uneven.

Sound of Monach.—The narrowest part of the Sound of Monach is between the north-eastern end of Stockay reef and a shoal, with a depth of one fathom (1^m8) over it, situated $1\frac{1}{2}$ miles north-eastward of Stockay ; the width of the channel here is about $3\frac{3}{4}$ cables.

The south-western half of Haskeir island (page 341), bearing 335° and open south-westward of the summit of Causamul (page 340), leads through the fairway of the sound in a least depth of 4 fathoms (7^m3).

Islets and dangers north-westward and northward of Heisker islands.—Huskeiran, which is situated about $9\frac{1}{2}$ cables west-north-westward of the disused lighthouse on Shillay, is an above-water and sunken reef. Clettan a Fer, near the centre of this reef, is 6 feet (1^m8) high.

Chart 2474.

West Dureberg, which is situated about 2 miles north-north-westward of the disused lighthouse on Shillay, is a foul area which dries 3 feet (0^m9) ; there is no safe channel through this foul area.

- 5 The western extremity of Shillay in line with Raiskeir, bearing 158°, leads close eastward of West Dureberg and eastward of Huskeiran ; and Rueval bearing about 115° open northward of Gortinish, leads north-eastward of this foul area.

Middle Dureberg, which is situated about 3½ miles north-north-eastward of the disused lighthouse on Shillay, is a reef, which dries from 8 to 10 feet (2^m4 to 3^m0) at its south-western end ; the part of this reef which dries, if covered, is always marked by breakers. The south-western end of this reef may be approached to within 2 cables.

Deasker, 3½ miles north-eastward of the disused lighthouse, is a bare rock, 10 feet (3^m0) high ; the sea washes over it in winter, but in June the sea swallows find it sufficiently dry to deposit their eggs.

Foul ground extends about 1½ cables west-south-westward, a reef that dries extends about 1½ cables northward, and a shoal bank extends about 2 cables north-eastward and eastward, from Deasker 20 (*Lat. 57° 34' N., Long. 7° 37' W.*) ; a shoal, with a depth of 4½ fathoms (8^m2) over it, lies about 3½ cables west-north-westward of this rock.

Zeller shoal, about 4½ cables north-westward of Deasker, has a least depth of one fathom (1^m8) over it. Frederick patch, about 1½ miles northward of Deasker, is situated near the centre of a shoal, with depths 25 of from 3 to 5 fathoms (5^m5 to 9^m1) over it, and has a depth of 5 feet (1^m5) over it ; Charlotte rocks, lying about 1½ miles north-north-eastward of Deasker, dry 3 feet (0^m9).

Griminish point (page 336), bearing 029°, and just open north-westward of Ard an Runair (page 335), leads south-eastward of 30 Charlotte rocks.

Causamul, an islet 1½ miles westward of Ard an Runair, is 27 feet (8^m2) high at its southern end, where it is covered with coarse grass ; its northern end is a bare flat rock, a few feet high. A shoal, about 2 cables west-south-westward of Causamul, has a least depth of 1½ 35 fathoms (3^m2) over it, and the sea breaks heavily over it in bad weather ; there are depths of from 3½ to 5½ fathoms (5^m9 to 10^m1) between this shoal and the islet. Foul ground and rocks extend about 3½ cables northward and north-eastward of Causamul.

Causamul rock, about 6½ cables eastward of Causamul, has a least 40 depth of 1½ fathoms (2^m7) over it ; near low water the sea may break over this rock and in heavy weather it breaks over it in three places. There are depths of from 1½ to 6 fathoms (2^m3 to 11^m0) between this rock and Causamul. Griminish point, bearing 029° and just open north-westward of Ard an Runair, leads south-eastward of Causamul 45 rock.

Caution.—The area between Deasker and Causamul, including the vicinities of Zeller shoal, Frederick patch, and Charlotte rocks, should be considered dangerous ground where there may be shoals which are not marked on the chart.

50 John's North channel.—John's North channel, between West Dureberg and Middle Dureberg, is a deep channel, about 2 miles wide, and free from dangers.

A vessel approaching from north-westward and intending to pass through John's North channel should steer with the northern extremity

Chart 2474.

of Stockay in line with Rueval (page 333), bearing 116° , which leads through the centre of the channel, passing about one mile northward of Croic harbour (see page 338).

For the clearing marks leading north-eastward and eastward of West Dureberg and Huskeiran (*Lat. $57^{\circ} 33' N.$, Long. $7^{\circ} 44' W.$*), see page 340; Causamul in line with Carra Crom (page 336), bearing about 063° , leads about $1\frac{1}{2}$ cables north-westward of West Dureberg.

A vessel approaching from northward and intending to pass through John's North channel, should, after passing Haskeir island, steer for 10 the disused lighthouse on Shillay, bearing 175° , which bearing leads through John's North Channel in about mid-channel.

Sound of Causamul.—The bottom of the Sound of Causamul, between Causamul and Ard an Runair, is very uneven, but there is a least depth of 5 fathoms (9^m1) in the fairway. 15

A vessel approaching from southward and intending to pass through the Sounds of Monach and Causamul should steer to pass about 2 miles eastward of Ceann Ear. Scrot Mòr should be kept bearing not more than 270° until the south-western half of Haskeir island bears 335° and is open south-westward of the summit of Causamul, which leads 20 through the fairway of the Sound of Monach in a least depth of 4 fathoms (7^m3).

The vessel should keep on this alignment until Griminish point bears 039° and is just open north-westward of Ard an Runair, which leads 25 through the fairway, passing south-eastward of Charlotte rocks, and between Causamul rock and Moila rocks (page 343), in a least depth of 5 fathoms (9^m1). When the summit of Causamul bears 283° course can be altered northward.

The sea in the Sound of Causamul, even during westerly gales, is 30 comparatively smooth.

Haskeir island. —Dangers.—Anchorage.—Haskeir island, about $10\frac{1}{2}$ miles north-north-westward of Stockay, attains an elevation at its south-western end of 120 feet (36^m6); the north-eastern end is nearly as high, and the land between is very low and nearly divided by a cove, so that from a distance of about 5 miles north-westward or south-35 eastward the island shows as two flattish hills.

In winter the sea spray covers the whole surface; there are no springs, but there are several pools of brackish water, where seals resort in summer with their young.

Haskeir Eagach, $8\frac{1}{2}$ cables west-south-westward of Haskeir island, 40 consists of a group of five bare rocks close together, with deep water between them; the highest rock has an elevation of 83 feet (25^m3).

A rock, which dries about 6 feet (1^m8), is situated about half a cable south-eastward of the south-eastern extremity, and a similar rock lies 45 about one cable west-north-westward of the south-western extremity of Haskeir Eagach. Some sunken rocks extend about three-quarters of a cable westward from the south-western extremity of Haskeir Eagach, and there is a depth of $3\frac{1}{2}$ fathoms (6^m4) close north-eastward of the rock, that dries, situated half a cable south-eastward of the 50 south-eastern extremity of this group.

A shoal, with a depth of 3 fathoms (5^m5) over it, lies 5 cables south-westward; a rock, with a depth of 10 feet (3^m0) over it, lies 3 cables south-south-eastward; and a shoal, with a depth of 5 fathoms (9^m1)

Chart 2474.

over it, about 2 cables east-south-eastward, of the southern extremity of Haskeir island. Rocks, which dry, extend about half a cable south-westward from the southern end, and about the same distance 5 westward of the north-western extremity of the island.

Elsewhere Haskeir island and Haskeir Eagach are steep-to, but the bottom around them is uneven.

There is no good anchorage, the ground being generally rocky, but in fine weather a vessel could anchor about 2 cables south-eastward 10 of the highest part of Haskeir island on a rocky patch, with depths of from 5 to 7 fathoms ($9^{\text{m}}1$ to $12^{\text{m}}8$) over it.

The best landing is either on the eastern or western side of the north-eastern end of Haskeir island, according to the wind, but it can only be effected with safety during fine weather.

15 Tidal streams.—Around Haskeir island the streams run about north-north-eastward and south-south-westward ; the north-north-east-going stream begins —0410 Stornoway (+0400 Dover), and the south-south-west-going stream begins +0215 Stornoway (—0200 Dover) ; the streams are probably fairly strong, and there may be 20 eddies near the islands.

Northward of Haskeir island and about 10 miles westward of the Sound of Harris there is a large area in which the streams appear to be imperceptible.

Coast.—Dangers.—Sgeir na Galtun, situated about $2\frac{1}{4}$ miles 25 north-westward of the northern entrance point of the western entrance to North ford (page 334) and 6 cables from the western side of Baleshare, dries 9 feet ($2^{\text{m}}7$) ; a shoal, with a depth of $4\frac{1}{2}$ fathoms ($8^{\text{m}}2$) over it, lies about $2\frac{1}{2}$ miles west-north-westward of the same point (Lat. $57^{\circ} 30' N.$, Long. $7^{\circ} 21' W.$). A bank, with depths of less than 30 5 fathoms ($9^{\text{m}}1$) over it, extends about $2\frac{1}{2}$ miles southward from Rubha Mòr (page 335).

Beual a Chaolais is entered between the north-western end of Kirkibost (page 335) and Rubh' Arnal, a rocky point 6 cables east-south-eastward of Rubha Mòr ; it is a narrow channel leading north-35 ward and eastward of Kirkibost and Baleshare to North ford, and is accessible to small vessels, with local knowledge, in fine weather.

The shallow bar is shifting, and because of the rate of the tidal streams is very dangerous. With northerly and easterly winds it may be taken without risk, but with southerly and south-westerly winds it 40 is hazardous, and frequently impracticable. Within is a hole with a depth of not less than 6 feet ($1^{\text{m}}8$) ; it is protected from the sea, but its position shifts and the tidal streams are strong.

Rubha Raouill, about 4 cables west-south-westward of Rubha Mòr, is an above-water rock ; the ground is foul between Rubha Raouill 45 and the mainland eastward. Langaskeir, about $5\frac{1}{2}$ cables west-south-westward of Ruhha Raouill, dries 11 feet ($3^{\text{m}}4$) ; there is a least depth of one fathom ($1^{\text{m}}8$) in the channel between Langaskeir and Rubha Raouill. Vosgeir, about $1\frac{1}{2}$ miles west-south-westward of Ruhha Raouill, dries 2 feet ($0^{\text{m}}6$).

50 Shoals, with least depths of one fathom and three-quarters of a fathom ($1^{\text{m}}8$ and $1^{\text{m}}4$) over them, lie about $1\frac{1}{2}$ miles west-south-westward and $1\frac{1}{2}$ miles westward, respectively, of Rubha Raouill ; there are many other shoals in this vicinity. The south-western half of Haskeir island (page 341), bearing 335° , and open south-westward

Chart 2474.

of the summit of Causamul (page 340), leads south-westward of these shoals.

Carraig Caig, about one mile north-westward of Rubha Raouill, is a flat rock which dries 11 feet ($3^{\text{m}} 4$) ; about $4\frac{1}{2}$ cables farther north-north-westward is a rocky shoal, with a least depth of $1\frac{1}{2}$ fathoms ($2^{\text{m}} 3$) over it. 5

Loch Paible is entered about one mile north-north-westward of Rubha Mòr ; small vessels, of about 6 feet ($1^{\text{m}} 8$) draught, occasionally shelter here. 10

Port Scolpaig is situated with Rubha Port Scolpaig, its north-western entrance point, $1\frac{1}{2}$ miles north-westward of Rubha Mòr (*Lat. 57° 34' N., Long. 7° 29' W.*) ; it is a sandy bay, with some detached rocks in the entrance, one of which, Sgeir Liath, 3 cables south-eastward of Rubha Port Scolpaig, is a few feet high. Port Scolpaig is not suitable for anchorage, but a vessel has ridden out a westerly gale at anchor off Rubha Port Scolpaig ; the swell was so broken that the vessel did not drag or bring any great strain upon the cables. Landing can be effected at Port Scolpaig, as it is sheltered by the rocks in the entrance, and by Rubha Port Scolpaig. 20

Moila rocks extend about $4\frac{1}{2}$ cables south-south-westward from Ard an Runair (page 335) ; some of these rocks dry about 3 feet ($0^{\text{m}} 9$).

Griminish point (page 336), bearing 029° and just open north-westward of Ard an Runair, leads north-westward of Moila rocks.

Eilean Trostain is situated about $1\frac{1}{2}$ cables north-westward of the northern extremity of Ard an Runair peninsula, with which it is connected by a reef that dries ; a reef, which dries, extends about $1\frac{1}{2}$ cables west-south-westward from its south-western side. Baskerais, about $2\frac{1}{2}$ cables west-south-westward of the south-western extremity of Eilean Trostain and about one cable offshore, is an above-water rock ; 30 a sunken rock, about $1\frac{1}{2}$ cables west-north-westward of the north-eastern extremity of Eilean Trostain and about one cable from its north-western side, has a depth of about one fathom ($1^{\text{m}} 8$) over it.

Hoglan bay, which is entered between Ard an Runair and Rubha Dubh Tighary, 7 cables north-north-eastward, is encumbered with rocks and shoals. A small vessel entering this bay should pass close northward of the reef extending three-quarters of a cable north-eastward from the north-eastern extremity of Eilean Trostain. Landing can be effected on the southern side of this bay, near its western end ; this landing is partially sheltered by Eilean Trostain and the rocks in the entrance. 40

A sunken rock is situated about $1\frac{1}{4}$ cables northward of Rubha Dubh Tighary and one cable offshore.

Varlish point, $1\frac{1}{2}$ miles north-eastward of Rubha Dubh Tighary, has sunken rocks extending about $1\frac{1}{2}$ cables north-north-westward from it. 45 Between Varlish and Griminish point rocks extend a short distance offshore.

Scolpaig bay, which is entered about one mile north-north-eastward of Varlish point, is a small bay in which landing can be effected should a boat be able to enter, but the sea breaks completely across the entrance in heavy weather. Scolpaig cottage stands at the head of this bay. 50

Eilean Bailivarkish (*Lat. 57° 39' N., Long. 7° 30' W.*), close off the southern entrance point of Scolpaig bay, has foul ground extending

Chart 2474.

about three-quarters of a cable north-westward from it. Foul ground, which dries about 6 feet (1^m8), extends about three-quarters of a cable from the north-eastern side of the bay, abreast Eilean Badivarkish,
5 leaving a narrow 4-fathom (7^m3) channel between, whence the depths shoal rapidly towards the head of the bay.

Griminish point, the north-western extremity of North Uist and the termination of Beinn Scolpaig, is steep and rocky, with deep water close to. Sloc Roe, the neck of the point, is perforated by a cave
10 entering from either side, with two holes close together opening to the surface, through which, in gales, the water spouts to such a height that it can be seen from a distance of 10 miles.

NORTHERN COAST OF NORTH UIST.—Anchorage.

Between Griminish point and Ard a' Mhorain, 6 miles east-north-
15 eastward, numerous rocks and shoals lie off the northern coast of North Uist, extending in places about $1\frac{1}{2}$ miles offshore.

Ard a' Mhorain, appears from about 2 miles offshore as a green wedge-shaped island sloping gradually towards its eastern end from an elevation of 124 feet (37^m8), and terminating in a low stony point. It
20 can be distinguished from Boreray, an island lying about one mile north-eastward of it, and which it somewhat resembles, by a few patches of sand reaching to the summit on its north-western side. The sandy isthmus connecting Ard a' Mhorain with North Uist is so low as to be partially flooded at springs, and it is not easily discernible. On the
25 eastern side of the peninsula of which Ard a' Mhorain is the extremity and about half a mile south-south-eastward of that point is a burial ground with a square mausoleum.

Veilish point, 54 feet (16^m5) high, is situated on the north-western side of the promontory of which Ard a' Mhorain is the extremity, and
30 about $1\frac{1}{2}$ miles south-westward of that point. Huilish point, 50 feet (15^m2) high, is situated about half a mile north-eastward of Veilish point (*Lat. $57^{\circ} 41' N.$, Long. $7^{\circ} 20' W.$*). These two points are faced with cliffs. See view facing page 346.

Vallay, an island lying across the mouth of a bay, about midway
35 between Griminish point and Ard a' Mhorain, is of sand formation, and attains an elevation at its eastern end of 126 feet (38^m4). It is mostly covered with grass, and connected with the shore at low water ; nearly the whole of the bay within it dries. On its southern side is a dwelling-house and farm offices, the upper part of the house being
40 visible over some parts of the western end of the island.

Small vessels with local knowledge can obtain shelter at each end of Vallay ; the anchorage at its western end is so encumbered with rocks that it is extremely difficult to enter ; there are, however, several places inside protected from the swell, with a depth of about one
45 fathom (1^m8), sand bottom.

The anchorage at the eastern end is between the eastern extremity of the island and a sandy spit, the bar of which is dangerous to cross, especially near low water. The ebb stream runs over the bar at the rate of 3 knots at springs, and the depth over it is seldom more than
50 2 feet (0^m6). The pool inside is sheltered from the swell, and has depths of from 5 to 9 feet (1^m5 to 2^m7).

Tidal streams.—The streams run inward (southward) and outward (northward) in the channels westward and eastward of Vallay,

Chart 2474.

to and from the bay south of that island. In both channels the in-going stream begins +0545 Stornoway (+0130 Dover), and the out-going stream begins -0015 Stornoway (-0430 Dover); the spring rate in each direction is about 3 knots.

Off-lying dangers.—McKillop rock, with a depth of 5 fathoms (9^m1) over it, is situated 1½ miles north-north-westward of the western extremity of Vallay.

John rock, about 1½ miles north-eastward, and Jane Macrae rocks, about 1½ miles north-north-eastward, of the western extremity of 10 Vallay, have least depths of 3 fathoms (5^m5) over them. The sea breaks over the foul ground in this vicinity in heavy weather.

Bo Lea, the outermost danger off this coast, about 1¼ miles north-north-westward of the eastern extremity of Vallay, is awash.

Cansamul (page 340), bearing 221° and just open north-westward of 15 Griminish point, leads north-westward; Seana Chaisteil (page 347), bearing 057° and open north-westward of Spuir (page 346), leads close north-westward; and Veilish point in line with the summit of the Crogary range (page 335), bearing 126°, leads close north-eastward of Bo Lea. *See view facing page 346.*

Gairgrada, about one mile westward of Ard a' Mhorain, dries 6 feet (1^m8), this rock, which is steep-to on its western and northern sides, can be detected in the calmest weather. There are several rocks between Gairgrada and the coast; vessels should not pass southward of this rock.

Beinn a' Charnain (page 347), bearing 041° and just open north-westward of Spuir, leads close north-westward of Gairgrada (*see view facing page 346*); the south-western extremity of Lingay, in line with Beinn Mòr (page 335), bearing 118°, leads north-eastward of this rock.

Ard a' Mhorain (*Lat. 57° 42' N., Long. 7° 19' W.*) is foul for about 30 4 cables offshore, and a shoal bank extends about 2 cables farther; the south-western extremity of Lingay in line with Beinn Mòr, bearing 118°, leads close north-eastward of this foul ground.

Caution.—When navigating along this coast a vessel should keep Causamul bearing about 221° and open north-westward of Griminish 35 point, or the disused lighthouse on Shillay bearing about 218° and open north-westward of the same point. In thick weather vessels should not approach within depths of 30 fathoms (54^m9), which lie from 5 to 6 miles north-westward of Bo Lea and the dangers in this vicinity.

Coast.—Anchorage.—Between Ard a' Mhorain and Leac Bhan, 40 3½ miles eastward, the northern coast of North Uist forms a shallow bay, the western part of which is very foul. Leac Bhan is a green projecting point, rising to Beinn a Chaolais, 212 feet (64^m6) high, half a mile southward.

Lingay, about 1½ miles eastward of Ard a' Mhorain, is a grassy island 45 105 feet (32^m0) high, and is uninhabited; it is connected with the coast eastward by Lingay strand, a sandbank which dries and extends round the bay to Ard a' Mhorain.

Oitir Mòr, about 2½ cables westward of Leac Bhan, is a large sandbank, separated from the coast southward and eastward by Channel 50 loch (page 348).

Anchorage can be obtained close off the south-western side of Lingay, in a depth of 3 fathoms (5^m5), sand; this anchorage is open north-westward, but very little swell is felt.

Chart 2474.

Off-lying Islands and dangers.—Boreray, about one mile north-eastward of Ard a' Mhorain, attains an elevation in Mullach Mòr near its northern end, of 176 feet (53^m6) ; Mullach Mòr has a flattish summit.

- 5 The northern part of Boreray is connected with the southern part by a low neck of land. The southern part, which is flat and about 50 feet (15^m2) high, is bounded by steep sandhills on its south-eastern side, from which the sand dries out about 2 cables, and a narrow spit, with a depth of 6 feet (1^m8) over it, extends eastward towards Leac 10 Bhan. The western and northern coasts of the island are shelving cliffs, with rocks and shoals extending about half a mile offshore.

The village is on the shore of a bay on the eastern side of the island; a burn runs past it ; there is a loch on the western side, into which the sea breaks.

- 15 Boreray is separated from Ard a' Mhorain by Caolas a' Mhorain, a channel about $2\frac{1}{2}$ cables wide, with depths of from 3 to 8 fathoms (5^m5 to 14^m6) in the fairway, and from the western side of Berneray by the Sound of Boreray.

Friar rocks, about 9 cables northward of Ard a' Mhorain (*Lat. 20° 57' 42" N., Long. 7° 19' W.*) and about $3\frac{1}{2}$ cables from the western side of Boreray, have a depth of one fathom (1^m8) over them, and are the outer dangers off-lying the western side of Boreray. Beinn a' Charnain, bearing 041° and just open north-westward of Spuir, leads north-westward of these rocks. *See* view facing this page.

- 25 There is no safe anchorage near Boreray, the deep water having rocky bottom, and where there is sand it is either shoal or exposed to the swell.

Spir, about one mile northward of the northern extremity of Boreray, is 40 feet (12^m2) high, dark-coloured, with a small patch of 30 vegetation on the summit, and surrounded by sunken rocks, those on its southern side extending over 2 cables. McIver rocks, the north-western end of which is situated about 6 cables eastward of Spuir, extend about $1\frac{1}{4}$ miles south-eastward and dry 5 feet (1^m5) ; they are always marked by breakers. A shoal, with a depth of 2 fathoms 35 (3^m7) over it, lies about midway between Spuir and the north-western end of McIver rocks.

Charts 2642, 2474.

Berneray, the south-western extremity of which is situated about $1\frac{1}{2}$ miles east-south-eastward of the north-eastern extremity of Boreray, 40 is hilly on its eastern side. Borve hill, $1\frac{3}{4}$ miles east-north-eastward of the south-western extremity of the island, is 273 feet (83^m2) high ; Moor hill, $1\frac{1}{4}$ miles north-north-eastward of Borve hill, is 301 feet (91^m7) high. The north-western part of Berneray is chiefly blown shelly sand, attaining an elevation of 60 feet (18^m3).

45 Chart 2474.

There is a village on the southern side of Berneray with a church and manse.

The Reef, a narrow stony spit extending $1\frac{1}{2}$ miles east-south-eastward of the north-eastern entrance point of Bays loch (*see below*), on 50 the south-eastern side of Berneray, dries about 11 feet (3^m4), except for one large stone, $3\frac{1}{2}$ cables from the entrance point, which is above water. About one cable from the entrance point is a narrow channel through The Reef, which dries and through which boats can pass when there is a depth of 2 feet (0^m6) above chart datum.



Crogary range, bearing 140° , 5 miles.

(Original dated 1878.)

Summit of Crogary range.



Vellish point.

Vellish point in line with summit of Crogary range, bearing 120° .

(Original dated prior to 1881.)



Benn a' Charnain, bearing 041° and just open north-westward of Spuir.

(Original dated 1858.)



Farm house.

Newton farmhouse in line with left fall of Crogray range, bearing 204°.
(Original dated 1855.)



Dunnaein, bearing 104° and open its own breadth northward of Berneray;
(Original dated 1855.)



Usinish Lighthouse.
(Original dated 1929.)

Chart 2474.

Bays loch is the only place in the island which affords anchorage, but it is much encumbered by rocks and entry is impracticable without local knowledge. There is most room in the north-eastern corner of the bay, where there is a depth of 3 fathoms (5^m5), mud, and with 5 southerly winds a little sea, but no swell. This anchorage is only available for small vessels.

Chart 2642.

Pabbay (*Lat. 57° 46' N., Long. 7° 14' W.*) is situated with An Corran, its southern extremity, about $1\frac{1}{2}$ miles north-north-westward of the 10 north-western extremity of Berneray; it rises in its north-eastern part to Beinn a' Charnain, a sharp-peaked hill, 638 feet (194^m5) high, which has much the same appearance from all directions, and is an excellent mark. See view facing page 348.

An Corran is a low, bare, sandy projection; Rubh' an t Seana 15 Chaisteil, about 5 cables north-eastward of An Corran, rises about $1\frac{1}{2}$ cables inland to Seana Chaisteil, a sharp-topped hillock, 116 feet (35^m4) high, covered with sand, on the summit of which is the site of an old castle.

The north-eastern coast of Pabbay is bold, but a number of detached 20 rocks, which dry about 11 feet (3^m4), known as The Reef, extend about 3 cables south-eastward from Rubh' a Bhaile Fo Thuath, the eastern extremity of Pabbay. Halo rock, with a depth of 16 feet (4^m9) over it, lies about one mile eastward of the same point. The northern coast of the island is fringed by a bank, with depths of less than 3 fathoms 25 over it, which extends about one cable offshore. Bo Kishinish, about half a cable north-westward of Kishinish, the north-western extremity of the island, is a detached above-water rock, and one cable north-westward of Bo Kishinish is a rock, with a depth of one fathom (1^m8) over it, on which the sea breaks in a heavy swell. 30

The south-western side of Pabbay is foul for about $3\frac{1}{2}$ cables offshore and amongst the easternmost of the rocks is a landing place for boats at half-tide. Quinish, about 8 cables westward of An Corran and about $2\frac{1}{2}$ cables from the south-western side of Pabbay, is a rocky islet about 10 feet (3^m0) high, surrounded by a reef. Quinish rocks, two detached 35 rocks, lying about 5 and 6 cables west-north-westward, respectively, of Quinish, have depths of one foot (0^m3) over them; three shoals, with a depth of 3 fathoms (5^m5) over them, are situated $4\frac{1}{2}$ cables south-westward, 8 cables south-eastward, and one mile south-eastward, of Quinish. 40

The north-western hill of Shillay (page 337), bearing 010° and open westward of the western extremity of Pabbay, leads close westward of Quinish rocks.

Spiral reef, about $9\frac{1}{2}$ cables west-south-westward of Quinish, consists of large rounded stones, which dry about 11 feet (3^m4). 45

The eastern extremity of Shillay, bearing 021° and just open westward of Pabbay, leads close westward of Spiral reef. Dunaarin (page 381), bearing about 104° and its own breadth open northward of the northern extremity of Berneray (see view facing this page), leads close northward of this reef, but this mark leads over or close to the 3-fathom 50 (5^m5) shoals south-westward and south-eastward of Quinish (*Lat. $57^\circ 45' N.$, Long. $7^\circ 15' W.$*).

The channel between Spiral reef and Quinish rocks is about $4\frac{1}{2}$ cables wide, with depths of from 18 to 34 feet (5^m5 to 10^m4).

Chart 2642.

Shillay, the southern extremity of which is situated about $9\frac{1}{2}$ cables north-westward of Scarasdale point on the northern side of Pabbay, rises at its northern end to a round-topped hill, 259 feet (78^m9) high, terminating in dark-coloured vertical cliffs, 100 feet (30^m5) high. The southern part of the island slopes towards the Sound of Shillay, the channel between Pabbay and Shillay, and has a small bay on its south-eastern side, where landing might be effected. Shillay is uninhabited, but there is pasturage.

10 Shelving rocks extend one cable offshore from the western side of Shillay.

Little Shillay, about one cable west-south-westward of the southern extremity of Shillay, is a black rock, 91 feet (27^m7) high, and is steep-to, except on its north-eastern side.

15 The channel between Little Shillay and Shillay is only safe for boats, and then only in fine weather, as there are several sunken rocks in it.

Chart 2474.

CHANNELS BETWEEN ISLANDS NORTHWARD OF NORTH UIST.—Caolas a' Mhorain.—Caolas a' Mhorain (page 20 344) leads to the anchorage off the south-western side of Lingay (page 345). Crogary range, Beinn Mòr and Beinn Bhreac (page 335) are useful marks for a vessel making this channel (*see* view facing page 346).

A vessel approaching from westward should steer to pass northward 25 of Bo Lea and Gairgrada (page 345), allowing for the tidal stream (page 347), which sets towards the land. When nearing Boreray, and Beinn a' Charnain (page 347) bears 041° and is just open north-westward of Spuir (page 346) (*see* view facing page 346), she can keep the south-western fall of the summit of Lingay in line with the north-eastern fall of the summit of Beinn Mòr, bearing 123° , which leads through the fairway of Caolas a' Mhorain to within $2\frac{1}{2}$ cables of Lingay, which is steep-to, whence she should steer for the anchorage. The shoalest depth, $2\frac{1}{2}$ fathoms (4^m1), is a short distance from Lingay, but little swell is felt there. Should the marks be obscured it is advisable 35 to stop off the entrance to the channel and wait for a pilot, who will come off from Boreray (*Lat.* $57^\circ 42' N.$, *Long.* $7^\circ 18' W.$), on the pilot signal being made, if the sea is not too high.

Sound of Berneray.—The Sound of Berneray is a narrow channel between Oitir Mòr (page 345) and Leac Bhan (page 345), on the south, 40 and the southern coast of Berneray, on the north. There are depths of from $1\frac{1}{4}$ to 7 fathoms (2^m3 to 12^m8) in the fairway.

Rùbha na h-Iulain, on the northern side of North Uist, one mile eastward of Lingay (page 345), is the south-western entrance point of Channel loch, a narrow chainiel leading southward and eastward of 45 Oitir Mòr into the Sound of Berneray.

Channel loch is separated from the open water westward by sandy flats, with a least depth of 2 feet (0^m6), and from the Sound of Berneray by a bar, with a least depth of $1\frac{1}{2}$ fathoms (2^m3) in the fairway; the loch is partially protected by Oitir Mòr, but much swell is experienced 50 during westerly winds. The south-eastern shore of the loch consists of sandhills.

There is an inlet, extending southward on the eastern side of Rubha na h-Iulain, which is used by small vessels. There is a small pier,

Chart 2474

about $2\frac{1}{4}$ cables south-eastward of Rubha na h-Iulain. Near the southern end of this inlet is the ruins of an old Pictish tower, and a quarter of a mile farther inland is Newton farmhouse.

From westward or northward the best approach to the Sound of Berneray is by Caolas a' Mhorain (page 348) and northward of Lingay, but on nearing Oitir Mòr depths of not more than about 2 feet ($0^m 8$) can be depended upon, especially after gales, which cause alterations in the channel.

The channel leads westward and southward of Oitir Mòr, which is steep-to, and after passing about half a cable northward of Rubha na h-Iulain a vessel should bring Newton farmhouse in line with the left fall of Crogary range, bearing 204° , astern (see view facing page 347), which leads through the fairway south-eastward of Oitir Mòr into the Sound of Berneray.

The track then leads eastward through the sound, passing northward of Eilean Fuam, situated 4 cables eastward of Leac Bhan (*Lat. $57^\circ 42' N.$, Long. $7^\circ 11' W.$*), thence about $8\frac{1}{2}$ cables farther eastward, and then north-north-westward into Bays loch (page 347).

The channel round the eastern side of Berneray to Bays loch can only be taken with local knowledge.

Prohibited anchorage.—Anchorage is prohibited, on account of telegraph cables, in the Sound of Berneray. See page 7.

Charts 2642, 2474.

Sound of Spuir. Anchorage.—The Sound of Spuir between Spuir (page 346) and Pabbay, leads into the Sound of Pabbay, the channel between the northern side of Berneray and the south-eastern side of Pabbay. The Sound of Spuir should not be used unless the marks can be clearly distinguished, for besides McIver rocks, Spuir reef, and Quinish rocks, the swell during north-westerly gales is said to break completely across it.

Chart 2642.

Dunaarin (page 381), bearing 104° and open its own breadth northward of the northern extremity of Berneray (see view on page 347), leads through the Sound of Spuir, passing between Spuir reef and Quinish rocks, but over or close to the 3-fathom ($5^m 5$) shoals south-westward and south-eastward of Quinish. When Toe head (page 378) bears 029° and is open south-eastward of the south-eastern extremity of Pabbay, shelter can be obtained from north-easterly winds and swell, in depths of from 3 to 4 fathoms ($5^m 5$ to $7^m 3$).

Sound of Pabbay.—**Anchorages.**—The Sound of Pabbay has a least width of about $1\frac{1}{2}$ miles, with depths of from 12 to 31 feet ($3^m 7$ to $9^m 4$) in the fairway.

Bo Leac Coalas, about $9\frac{1}{2}$ cables east-south-eastward of An Corran (page 347), is awash. A spit, with depths of from one to 3 fathoms ($1^m 8$ to $5^m 5$) over it, crosses the eastern end of the sound, from Moor hill (page 346) to The Reef.

A vessel can obtain anchorage during south-westerly or westerly winds off the north-eastern side of Pabbay, about 3 cables offshore, with Beinn a' Charnain bearing 265° , in a depth of about 6 fathoms ($11^m 0$), sand, but with northerly or north-westerly winds the vessel should anchor farther southward to avoid the swell.

A vessel proceeding to the latter anchorage, if approaching from southward or westward, should steer on a bearing of Beinn a' Charnain,

Chart 2642.

and anchor, according to the draught of the vessel, in depths of from 2½ to 4 fathoms (4^m6 to 7^m3). Beinn a' Charnain (*Lat. 57° 47' N., Long. 7° 14' W.*) should be kept bearing less than 306°, so as to avoid 5 The Reef.

The sound is easy of access from northward to vessels of less than 12 feet (3^m7) draught and there is no difficulty in taking up an anchorage on a clear night.

Sound of Shillay.—The Sound of Shillay (page 348) is free from 10 dangers, with the exception of the rocks extending about 1½ cables north-westward from Kishinish (see page 347).

Temporary anchorage can be obtained, with winds between north-west and north-north-east, with the sandy shore of the small bay on the south-eastern side of Shillay bearing about 333°, distant 2 cables, 15 and the southern extremity of Shillay in line with the northern extremity of Little Shillay, bearing 270°, in depths of from 4 to 5 fathoms (7^m3 to 9^m1); the bottom is chiefly sand, with patches of rock, which, when anchoring, can be seen and avoided.

A vessel approaching from westward can avoid the rocks north-westward of Kishinish by steering for the centre of the Sound of Shillay, and keeping in mid-channel until the channel between Shillay and Little Shillay opens out, bearing about 000°.

Chart 2474.

EASTERN COASTS OF SOUTH UIST, BENBECULA, AND 25 NORTH UIST.—From Ru Melvick (page 322) the eastern coasts of South Uist, Benbecula, and North Uist trend about 34 miles northward to Leac na Hoe, the eastern extremity of North Uist (*Lat. 57° 38' N., Long. 7° 04' W.*).

South Uist.—Aspect.—See page 332.
30 **Coast.—Dangers.**—The coast between Ru Melvick and Rubha na h Ordaig, about 1½ miles north-north-eastward, is indented by two rocky bays, named Camas an Lochain and Bun Sruth.

Charts 618, 1795.

Between Rubha na h Ordaig and Kubha Meall na Hoe, the southern entrance point of Loch Boisdale, 1½ miles north-westward, the coast is much indented by small bays and inlets.

Chart 1795.

Off the entrance to Camas an Lochain are three islets two of which are 10 and 7 feet (3^m0 and 2^m1) high; a rock, which dries, lies half a cable south-eastward of the outer islet.

Bun Sruth is a small loch, which is entered through a narrow channel half a mile south-south-westward of Rubha na h Ordaig. Fishing boats sometimes take shelter in it, but it is inaccessible until the tide has risen 7 feet (2^m1).

45 Rubha na h Ordaig, the outer point of the southern approach to Loch Boisdale, has an irregular outline, with several peaks, of which the highest has an elevation of 349 feet (106^m4), and presents a nearly vertical face northward, but falls suddenly on its western side to low ground, over which Ru Melvick is visible in the approach to Loch 50 Boisdale.

A reef extends 1½ cables eastward from Rubha na h Ordaig, and the sea breaks heavily on it; the coast in this locality should not be approached within 4 cables.

Charts 618, 1795, 2474.

Cheeseman rock, situated about 7 cables north-westward of Rubha na h Ordaig (*Lat. 57° 07' N., Long. 7° 12' W.*) and one cable offshore, has a depth of less than 6 feet (1^m8) over it. Clan Ewan rock, lying 6 cables north-north-westward of Rubha na h Ordaig and about 2 cables offshore, dries 3 feet (0^m9) ; a bank, with a depth of less than 6 feet (1^m8) over it, extends $1\frac{1}{2}$ cables north-eastward from Clan Ewan rock, and there are shoals between this rock and the coast westward.

Hartamul (page 324), bearing 199° and just open eastward of Rubha na h Ordaig, leads eastward of Clan Ewan rock.

A shoal, with a depth of $3\frac{1}{2}$ fathoms (6^m4) over it, lies about $2\frac{1}{2}$ cables north-north-eastward of Meall an Iasgaich, a salient point situated one mile north-westward of Rubha na h Ordaig.

These dangers are covered by the *red* sector of Usinish light (page 15359), between the bearings of 356° and 013° ; and by the *red* sector of Calvay light bearing more than 286° .

Hartavagh, an inlet extending south-south-westward on the western side of Meall an Isagaich, terminates in a muddy creek where boats find shelter, but the entrance is dangerous in north-easterly gales. 20

Tidal streams.—Off Loch Boisdale, as between Berneray and the Sound of Barra, the north-going stream begins +0515 Stornoway (+0100 Dover), and the south-going stream begins -0045 Stornoway (-0600 Dover). Farther northward, however, the streams begin progressively later, off Loch Eynort the north-going stream begins 25 +0545 Stornoway (+0130 Dover), and the south-going stream begins -0015 Stornoway (-0430 Dover) ; off Benbecula the north-going stream begins -0535 Stornoway (+0215 Dover), and the south-going stream begins +0030 Stornoway (-0345 Dover). The spring rate in each direction off the salient points is from 1.5 to 2 knots, but is less 30 in the bays between them, and the streams lose strength offshore.

See also Tables of Tidal streams for stations K06 and K09 in Tidal Streams European Waters, Part II, 1948.

Chart 618.

Loch Boisdale.—Loch Boisdale, the southernmost harbour on the 35 eastern coast of South Uist, affords anchorage to large vessels, and is approached between Rubha Meall na Hoe and Rubha na Creige Mòr, $1\frac{1}{2}$ miles northward.

The entrance between Calvay (page 352) and the northern shore is about 4 cables wide and free from dangers. Gasay (page 354) divides 40 the loch into two arms. Westward of Gasay the navigable portion of the loch terminates, as its head encloses an intricate network of islands and reefs, most of which dry.

The tidal streams run swiftly through the narrow channels, but a boat can be taken through them in depths of from 5 to 20 feet (1^m5 45 to 6^m1).

The land at the head of the loch is so low that from a few miles seaward the harbour might be mistaken for a sound.

On the southern shore of the loch, at its western end, is the village of South Lochboisdale (*Lat. 57° 08' N., Long. 7° 19' W.*), and on the 50 northern shore, abreast it, is Lochboisdale village.

During October and November, herring nets are often anchored, without lights, in the entrance to the loch, during night time, and are usually unattended.

Charts 618, 1795.

Aspect.—The position of Loch Boisdale may be identified by three distinct hills on its northern side, known as Boisdale hills (page 332).

- From outside the entrance, Rubha na h Ordaig stands up as a prominent ridge, with Rubha Meall na Hoe, slightly northward of it, of somewhat similar appearance, but lesser altitude, having a summit 167 feet ($50^{\text{m}} 9$) high.

Chart 618.

The northern shore is bold and clifffy, the headland of Rubha na Creige Mòr, 86 feet ($26^{\text{m}} 2$) high, standing out prominently with a large cave mouth on its southern face. Between Rubha na Creige Mòr and Rubha na Cruibe, a point 91 feet ($27^{\text{m}} 7$) high, three-quarters of a mile south-south-westward, there are two indentations in the coast.

About 2 cables northward of Rubha na Cruibe is a conspicuous dark cliff, nearly perpendicular and 104 feet ($31^{\text{m}} 7$) high, named Creag nan Gamhna.

The coasts on both sides of the loch are rocky, with heather-clad hills rising steeply behind them; the hills on the northern side are considerably the steeper, the highest being Beinn Ruigh Choinnich, 20 $9\frac{1}{2}$ cables westward of Rubha na Cruibe, with a conspicuous sharp cone, 896 feet ($273^{\text{m}} 1$) high, and rugged rocky ravines descending to the shore.

The light-tower and the small adjoining white hut at the eastern end of Calvay are prominent objects.

On the northern shore in Lochboisdale village, about $3\frac{1}{2}$ cables north-westward of the north-western end of Gasay, is a prominent hotel, which is a two-storeyed stone building, with gables facing the harbour; it stands on the highest part of the point, at an elevation of about 50 feet ($15^{\text{m}} 2$). The police station, about $2\frac{1}{2}$ cables west-south-westward of the hotel, is conspicuous.

Pilot.—There is one pilot, under the local harbour authority, obtainable by telegraph or letter, but there is no cruising station nor can the pilot be obtained by signal.

Tidal streams.—The in-going stream begins about +0525 Stornoway (+0110 Dover), and the out-going stream begins about -0050 Stornoway (-0505 Dover); the streams are barely perceptible in the entrance and loch, but run fairly strongly off the coast between Rubha na h Ordaig and Calvay, where the spring rate in each direction is about 2 knots off Rubha na h Ordaig, decreasing to about 0.5 knot near Calvay.

Light.—A light is exhibited, at an elevation of 36 feet ($11^{\text{m}} 0$), from a white hut, 12 feet ($3^{\text{m}} 7$) in height, situated near the eastern end of Calvay (*Lat. 57° 09' N., Long. 7° 15' W.*).

Dangers in approach.—**Buoy.**—McKenzie rock, situated about $5\frac{1}{2}$ cables east-north-eastward of Rubha Meall na Hoe, has a least depth of $1\frac{1}{2}$ fathoms ($2^{\text{m}} 7$) over it, and is marked off its northern end by a red can buoy. A bank, with a least depth of 7 fathoms ($12^{\text{m}} 8$) over it, lies about $2\frac{1}{2}$ cables north-eastward of Rubha Meall na Hoe. This rock and bank are covered by the *red* sector of Usinish light (page 359), between the bearings of 356° and 013° ; and by the *red* sector of Calvay light, bearing more than 286° .

Charts 618, 1795, 2474.

The western fall of Rubha na h Ordaig (page 350) in line with the summit of Ru Melvick (page 322), bearing 185° , leads close eastward of McKenzie rock.

Chart 618.

About $6\frac{1}{2}$ cables east-north-eastward of Calvay lighthouse there is an area of irregular rocky ground extending south-south-eastward towards McKenzie rock, but there are no depths of less than 8 fathoms (14^m6). These rocky beads are all small, and steep-to, rising suddenly from depths of from 14 to 16 fathoms (25^m6 to 29^m3).⁵

In the northern approach to Loch Boisdale, about $2\frac{1}{2}$ and 3 cables south-westward of Rubha na Creige Mòr, are two islets lying close offshore, 25 and 13 feet (7^m6 and 4^m0) high, respectively. From Tripach, the southern islet, a rocky spit, extends half a cable southward; two shoals, each with a depth of 16 feet (4^m9) over it, lies about one cable south-eastward, and 2 cables south-south-eastward, respectively, of Tripach.¹⁰

Charts 618, 1795.

The eastern extremity of Stuley (page 356), bearing 359° and open eastward of Rubha na Creige Mòr, leads close eastward of these 16-foot (4^m9) shoals.¹⁵

Chart 618.

Islands and dangers in Loch Boisdale.—Light-buoy.—Calvay, an island situated close to the southern shore, about half a mile north-westward of Rubha Meall na Hoe, is 70 feet (21^m3) high at its south-eastern end, and is covered with grass. An islet, about 30 feet (9^m1) high, on which stands the ruin of an ancient castle, lies close off the northern side of Calvay, about $2\frac{1}{2}$ cables west-north-westward of Calvay lighthouse; the rudely-hewn grey walls of this castle are not more than 8 or 9 feet (2^m4 or 2^m7) high; this islet is connected with Calvay by a reef, which dries.²⁰

A bank, with depths of less than 6 feet (1^m8) over it, extends about $1\frac{1}{2}$ cables southward from the south-eastern end of Calvay (*Lat. $57^\circ 09' N.$, Long. $7^\circ 15' W.$*). Sword rock, situated in this shoal area, about $1\frac{1}{2}$ cables south-south-eastward of Calvay lighthouse, dries 5 feet (1^m5).²⁵

The channel between the mainland and the southern side of Calvay has several rocks in it; amongst them is Sound rock, lying in mid-channel, about $1\frac{1}{2}$ cables south-westward of Calvay lighthouse, dries 4 feet (1^m2). This channel can only be used by boats.³⁵

From the western end of Calvay, foul ground, which dries 3 feet (0^m9) in places, extends about $1\frac{1}{2}$ cables west-north-westward. Shoals, with depths of $4\frac{1}{2}$ and $2\frac{1}{2}$ fathoms (8^m7 and 4^m6) over them, are situated $1\frac{1}{2}$ cables north-north-westward and north-westward, respectively, of the western extremity of Calvay. Shoals, with depths of from $3\frac{1}{2}$ to 5 fathoms (5^m9 to 9^m1) over them, lie about 4 cables west-north-westward of the western extremity of Calvay.⁴⁰

There are no dangers on the northern side of the loch, beyond half a cable offshore, as far westward as Gasay.⁴⁵

A ruined pier, painted white, situated on the southern shore $3\frac{1}{2}$ cables southward of Gasay, in line with Holligeir rock (page 354), bearing 245° , leads clear of the northern shore between Rubha na Cruibe and A'Mhaol Bhuidhe, about $4\frac{1}{2}$ cables south-westward.

A rock, 5 feet (1^m5) high, painted white, situated close off the southern shore 2 cables westward of the western extremity of Calvay, is conspicuous.⁵⁰

From a point on the southern shore, about $6\frac{1}{2}$ cables westward of the western extremity of Calvay, foul ground extends about one cable

Chart 618.

northward, north-westward, and westward ; Hollisgeir, situated in this foul area, about half a cable northward of this point, is a reef, with two small rocks, each one foot (0^m3) high, on it, painted white and conspicuous ; Bede rock, lying at the western edge of this foul area, about $1\frac{1}{2}$ cables westward of this point and about three-quarters of a cable offshore, has depths of from 4 to 5 feet (1^m2 to 1^m5) over it, and is a danger to fishing boats making for the ruined pier on the southern shore.

- 10 Mid rock, about $1\frac{1}{2}$ cables north-north-eastward of the point on which stands the ruined pier, has a least depth of 7 feet (2^m1) over it, and a bank, with depths of less than 5 fathoms (9^m1) over it, extends about half a cable north-westward from it.

Foul ground extends about $1\frac{1}{4}$ cables northward from the point on which is the ruined pier ; Hut shoal, situated at the north-western end of this foul ground, consists of two detached heads, with depths of from 4 to 5 feet (1^m2 to 1^m5) over them.

Eileanan Iasgaich, a group of islands, islets, and rocks, the eastern extremity of which is about 2 cables west-north-westward of the point on which is the ruined pier, lie at the western end of the loch ; this area is very foul, and can only be navigated by boats ; the eastern islet (*Lat. $57^{\circ} 09' N.$, Long. $7^{\circ} 18' W.$*) of this group rises to a small rocky summit, 63 feet (19^m2) high, but the rest of it is a smooth slope of bog and coarse grass, of lesser heights.

25 Gasay, an island situated about 8 cables west-north-westward of Calvay, is 50 feet (15^m2) high, and is covered with coarse grass and heather. The western end of this island is separated from Rubha Bhuaill, a promontory on the mainland westward, by a channel about one cable wide. Gasay and Rubha Bhuaill divide the head of the harbour into two main branches ; the southern is narrow, but deep, as compared with the northern, which, though wider, is on the whole shallow, and encumbered by dangers.

Both main branches terminate in irregular shallows, through which the tidal streams run strongly ; above the tidal water of the northern branch is Loch a Bharp, a fresh-water loch, the waters of which are discharged into the harbour by a small stream.

The triangular point of land on which Lochboisdale village is built divides the northern branch of the harbour into two parts, and is about 50 feet (15^m2) high, and flat-topped.

40 A bank, with depths of less than 3 fathoms (5^m5) over it, extends about one cable eastward from the eastern end of Gasay ; Gasay rock, near the north-eastern end of this bank, dries 2 feet (0^m6). Care is required in passing this rock, for in calm weather, when it is covered, it cannot be detected, as the water of this part of the harbour is generally somewhat brown, so that the seaweed that covers the rock is not always distinguishable.

A rock, 6 feet (1^m8) high, painted white, close off the south-eastern point of Gasay, is conspicuous.

Shoals, with depths of from $2\frac{1}{2}$ to 3 fathoms (4^m1 to 5^m5) over them, 50 lie in about mid-channel, $1\frac{1}{2}$ to 2 cables north-westward of the north-eastern extremity of Gasay. Sgeir rock, about $1\frac{1}{2}$ cables northward of the north-western extremity of Gasay, has a least depth of 4 feet (1^m2) over it, and is marked on its southern side by a conical light-buoy, painted black and exhibiting a *white flashing light* showing a

Chart 618.

flash of three-quarters of a second duration every six seconds ; the 3-fathom ($5^m 5$) line lies about 20 yards ($18^m 3$) southward of this light-buoy.

From Rubha nan Eireannach, a point $2\frac{1}{2}$ cables north-north-westward of the eastern end of Rubha Bhuit, a bank, with a least depth of $1\frac{1}{2}$ fathoms ($2^m 7$) over it, extends about $1\frac{1}{2}$ cables east-south-eastward.

North-westward of Sgeir rock and Rubha nan Eireannach the upper end of the loch is foul, and can only be navigated by boats. 10

Anchorages.—Anchorage can be obtained in the outer part of Loch Boisdale, in depths of from 12 to 13 fathoms ($21^m 9$ to $23^m 8$), mud.

A small vessel can obtain anchorage off the south-western side of Gasay (*Lat. $57^{\circ} 09' N.$, Long. $7^{\circ} 17' W.$*), with its southern extremity in line with the southern extremity of A' Mhaol Bhuidhe, bearing $15^{\circ} 079^{\circ}$, and the eastern extremity of Rubha Bhuit bearing 324° , in a depth of from 8 to 9 fathoms ($14^m 6$ to $16^m 5$), mud and shell. This anchorage is not a good one with strong south-westerly or westerly winds, and it is then advisable to move to the outer anchorage described above, which is just as sheltered, and where there is more scope 20 for veering cable, if necessary.

A small vessel can anchor off the north-western end of Gasay, about $1\frac{1}{2}$ cables north-north-westward of the north-western extremity of Gasay, in a depth of $4\frac{1}{2}$ fathoms ($7^m 8$).

Charts 618, 1795.

25

Directions.—A vessel approaching Loch Boisdale from southward should, after passing eastward of Ru Melvick (page 322), steer to pass from 4 to 5 cables eastward of Rubha na h Ordaig (page 350) ; thence she should steer with Hartamul (page 324) bearing 199° astern, and just open eastward of Rubha na h Ordaig until the houses at Loch-boisdale bear 286° and are just open southward of the extremity of the land on the northern shore of Loch Boisdale, which leads into the entrance to the loch. 30

Chart 618.

After passing northward of Calvay lighthouse the vessel may steer 35 for the outer anchorage.

A vessel bound for the anchorage off the south-western side of Gasay should keep on the northern side of the loch, so as to avoid the shoals west-north-westward of the western extremity of Calvay, but should keep south-eastward of the clearing mark described on page 353 ; 40 after passing northward of these shoals she should steer to pass about three-quarters of a cable southward of the south-eastern end of Gasay, and thence to the anchorage.

A vessel bound for the anchorage off the north-western end of Gasay should steer about 290° , which leads through the fairway north-45 ward of Gasay (*Lat. $57^{\circ} 09' N.$, Long. $7^{\circ} 17' W.$*), in a least depth of $4\frac{1}{2}$ fathoms ($7^m 8$) ; the track leads within about a quarter of a cable of the shoals on either hand, so the course must be carefully kept.

Charts 618, 1795.

At night, a vessel approaching from northward will be at a safe 50 distance from the land so long as Usinish light (page 359) is in sight ; if she is approaching from southward she will be safe if she keeps in the white sector of Usinish light. Calvay light may be steered for, bearing not more than 286° and showing white.

Charts 2474, 3674, 2508, 2635.

Chart 618.

Lochboisdale.—Light.—The village of Lochboisdale is situated on a point of land, on the northern side of the head of the harbour. It has a post and telegraph office close to the pier.

- 5 A light is exhibited, at an elevation of 16 feet ($4^{\text{m}}9$) from the roof of a store at the south-eastern end of this pier ; a portable light is exhibited on the corner of the pier when a vessel is expected.

The pier is about 270 feet ($82^{\text{m}}3$) long, with depths of from 12 to 15 feet ($3^{\text{m}}7$ to $4^{\text{m}}6$) near the end.

- 10 There is regular communication by sea with the mainland, and with the other islands of the Outer and Inner Hebrides.

Small quantities of provisions can usually be obtained, and water is laid on to the pier.

- 15 Bute hospital, which is small, is situated at Daliburgh, about 3 miles along the main road to Lochmaddy from the pier.

There is also a small infectious diseases hospital.

Life-saving.—A life-saving apparatus is maintained at Lochboisdale. *See page 9.*

Charts 1795, 2474.

- 20 **Coast.—Dangers.**—The coast from Rubha na Creige Mòr to the entrance to Loch Eynort, about $3\frac{1}{4}$ miles north-north-westward, is formed by the eastern slopes of Boisdale hills.

Between Rubha na Creige Mòr and Stuley, an island about $1\frac{1}{2}$ miles northward, the coast is moderately steep-to, but northward of Stuley 25 it is not steep-to, and, as the entrance to Loch Eynort is approached, there are several rocks and islets extending as much as 3 cables offshore.

Stuley (*Lat. $57^{\circ} 11' N.$, Long. $7^{\circ} 15' W.$*), which lies close offshore, is 124 feet ($37^{\text{m}}8$) high, and is covered with grass.

- 30 Sgeir an Fheidh, situated close offshore, about 6 cables northward of Rubha na Creige Mòr, is 10 feet ($3^{\text{m}}0$) high. A rock, which dries 4 feet ($1^{\text{m}}2$), lies about half a cable south-eastward of Sgeir an Fheidh. There is a channel westward of Sgeir an Fheidh, but a vessel can obtain no sheltered anchorage.

- 35 Glas eilean Mòr, situated about 2 cables south-south-eastward of Stuley, is covered with a bright green sward ; rocks extend about 2 cables southward and one cable northward from Glas eilean Mòr. Du sgeir Mòr, about 3 cables eastward of Stuley, is the easternmost of three small islets ; it is 23 feet ($7^{\text{m}}0$) high, and quite bare. Broad 40 rocks, one of which dries about 12 feet ($3^{\text{m}}7$), lie $2\frac{1}{2}$ cables northward of Stuley, with a channel between them and that island, having depths of from 7 to 8 fathoms ($12^{\text{m}}8$ to $14^{\text{m}}6$).

Stuley sound, between the mainland and Stuley, is about half a cable wide at its narrowest part, and in the northern entrance, nearly 45 in mid-channel, is a shoal, with a depth of 10 feet ($3^{\text{m}}0$) over it. Small vessels pass through it or use it as an anchorage.

Loch Eynort.—Islets and dangers.—Loch Eynort does not afford good anchorage.

Between the islets eastward of the southern entrance point, and 50 Creag Mòr, on the northern side, the entrance to the loch is about 5 cables wide ; thence the loch trends about $1\frac{1}{4}$ miles westward to Rubha Lailum, north-westward of which it decreases in width, and 3 cables north-westward of Rubha Lailum, on the northern side of the loch, is a narrow channel leading into Upper Loch Eynort, which is

Charts 1795, 2474.

shallow in many places, and on account of the difficulty of access, but little used.

Loch Eynort has often been mistaken for Loch Boisdale, the land at the head of both lochs being very low, but the shores of Loch Eynort are much steeper, having dark-coloured vertical cliffs on the northern side. Beinn Mòr, 2 miles northward of the entrance, is also much higher than the other Boisdale hills. 5

Meall Mòr, on the northern side of Loch Eynort, is a hill 311 feet (94^m8) high, appearing deeply notched on north-westerly bearings ; it terminates in Coilenish, a projecting point, 2 $\frac{3}{4}$ cables south-eastward of its summit. Meall Mòr (*Lat. 57° 14' N., Long. 7° 17' W.*) is a good mark for identifying the loch. 10

Clett a Ghlinn Mòr, situated close offshore, about 6 cables south-eastward of the southern entrance point of Loch Eynort, is 67 feet (20^m4) high, and is connected with the shore by a reef that dries. A shoal, with a depth of 2 $\frac{1}{2}$ fathoms (4^m1) over it, lies about half a cable north-north-eastward of Clett a Ghlinn Mòr. Na Dubh sgeirean, about 3 cables north-north-westward of Clett a Ghlinn Mòr and about 2 $\frac{1}{2}$ cables offshore, are two above-water rocks, lying close together. 20 Eilean nan Gamhna is situated about three-quarters of a cable west-south-westward of Na Dubh sgeirean and is 45 feet (13^m7) high ; there are several rocks between Eilean nan Gamhna and the shore westward.

Bo Carrach, about three-quarters of a cable northward of the southern entrance point, dries 10 feet (3^m0). Shoals, with depths of less than 6 feet (1^m8) over them, extend about 1 $\frac{1}{2}$ cables north-westward from the southern entrance point ; about one cable westward of the southern entrance point, and close offshore, are some sunken rocks. 25

Bo Coilenish, situated on the northern side of the loch, about half a cable east-south-eastward of the south-eastern end of Coilenish. 30

Still rocks, about 4 cables westward of the southern entrance point and about 1 $\frac{1}{2}$ cables offshore, dry 3 feet (0^m9) ; foul ground extends about half a cable southward, and a rock, with a depth of less than 6 feet (1^m8) over it, lies about half a cable south-westward, of Still rocks.

Eilean Eallan, situated close off the southern shore, about 6 cables westward of the southern entrance point, are three islets, connected with each other and with the shore by a reef that dries ; a shoal, with a depth of less than 6 feet (1^m8) over it, lies close westward of the western end of Eilean Eallan. 35

About 4 $\frac{3}{4}$ cables west-north-westward of Coilenish a rocky spit, with depths of from one to 2 $\frac{1}{2}$ fathoms (1^m8 to 4^m6) over it, extends about 1 $\frac{1}{2}$ cables south-eastward from the northern shore. Between Bo Coilenish and this spit there are no dangers beyond half a cable of the northern shore. 40

Bo Dearg, lying in Sruthan Beag, the narrow channel leading from Loch Eynort to Upper Loch Eynort, is a large flat rock which dries 3 feet (0^m9). 45

There is a channel about 65 yards (59^m4) wide on each side of Bo Dearg ; the north-eastern channel has a least depth of 4 fathoms (7^m3), and the south western of 1 $\frac{1}{2}$ fathoms (2^m3), the bottom being covered with large stones. 50

Tidal streams.—In the entrance the in-going stream begins about +0540 Stornoway (+0125 Dover), and the out-going stream begins about 0040 Stornoway (-0455 Dover) ; the streams are barely

Charts 1795, 2474.

perceptible in the entrance and outer loch but gain strength as the narrows leading to Upper Loch Eynort are approached. In the narrows the in-going stream begins about -0610 Stornoway (+0200 5 Dover), and the out-going stream begins about -0015 Stornoway (-0430 Dover); the spring rate in both directions is said to be as much as from 5 to 7 knots. There are overfalls in the channel and eddies on both sides of it; the out-going stream runs strongly across Bo Dearn till it uncovers. The streams are imperceptible in the upper 10 loch except near the narrows.

Anchorages.—A vessel can obtain anchorage on the southern side of the loch, about $1\frac{1}{4}$ cables northward of the western extremity of Eilean Eallan, in a depth of 8 fathoms (14^m6), mud. This anchorage is open eastward.

15 There is anchorage for small vessels on the northern side of the loch, about $4\frac{1}{2}$ cables west-north-westward of Coilenish and about half a cable offshore, in a depth of about 6 fathoms (11^m0), mud; the holding ground is good, but it is open south-eastward.

Poll Craigavaig, on the southern side of the loch, about $2\frac{1}{2}$ cables 20 west-north-westward of Rubha Lailum (*Lat. $57^{\circ} 13' N.$, Long. $7^{\circ} 18' W.$*), is a small bight with depths of from 5 to 7 fathoms (9^m1 to 12^m8), mud.

Upper Loch Eynort has deeply indented shores and many narrow channels, but opens out in places to a width of $3\frac{1}{2}$ cables, and has depths of from $1\frac{1}{2}$ to 8 fathoms (2^m7 to 14^m6), mud, with plenty of room for 25 anchorage; it is seldom visited except by small local craft, the entrance to it being both difficult and dangerous.

Directions.—A vessel approaching from southward should, after passing eastward of Clett a Ghlinn Mòr and Na Dubh sgeirean, steer for Meall Mòr until the loch has opened out, whence she should steer 30 to pass midway between Bo Carrach and Bo Coilenish. When abreast Eilean Eallan she can steer for the desired anchorage.

The outer part of Sruthan Beag, leading from Loch Eynort towards Upper Loch Eynort, is described above; the continuation of this channel northward into Upper Loch Eynort is partly obstructed by 35 rocks projecting from the eastern side, some of which dry 9 feet (2^m7).

Coast.—Dangers.—Light.—Anchorage.—The coast between Creag Mòr and Rubha a Bhilidh, about $3\frac{1}{2}$ miles north-north-eastward, is formed by the spurs and corries of the mountain range of Benmore; in places the coast and sides of the ravines rise vertically to a height 40 of from 700 to 800 feet (213^m4 to 243^m8), with dark caves showing seaward. It is steep-to about one cable offshore, but, with westerly winds, most violent squalls come down the gullies, and the nearer the coast the greater their force.

Usinish bay is a small bay on the south-western side of Rubha 45 Babilidh; in its north-western corner is a gravel beach. Three rocks lie close off the north-eastern shore of the bay; of these, Carvannach, situated about $1\frac{1}{2}$ cables offshore and about 5 cables south-eastward of the gravel beach, dries 3 feet (0^m9).

Between Rubha Bhilidh (*Lat. $57^{\circ} 17' N.$, Long. $7^{\circ} 13' W.$*), and the 50 south-eastern extremity of Usinish promontory, $1\frac{1}{4}$ miles north-north-eastward, the coast is steep-to, but about three-quarters of a mile southward of the lighthouse (see below) and about one cable offshore is a rock, with a depth of 6 feet (1^m8) over it; and close offshore, half a mile southward of the lighthouse, are some low islets, 70 yards

Charts 1795, 2474.

(64^m0) eastward of which is a sunken rock. These rocks are covered by the red sector of Usinish light between the bearings of 356° and 013°.

The eastern extremity of Wiay (page 362), bearing 359°, and open 5 eastward of the lighthouse, or at night Usinish light showing white and bearing not more than 356°, leads eastward of these rocks.

A light is exhibited, at an elevation of 176 feet (53^m6), from a white tower, 39 feet (11^m9) in height, situated on the south-eastern extremity of Usinish promontory, on a sloping face, just above the cliffy part of the 10 point. There is a radio telephone at the lighthouse. See view facing page 347.

Charts 2750, 1795.

Usinish promontory is a bold rocky headland, attaining an elevation in Beinn a Tuath, 3½ cables west-north-westward of the lighthouse, of 15 417 feet (127^m1); Beinn Ghot, 5 cables south-south-westward of Beinn a Tuath, is about 570 feet (173^m8) high.

Chart 2750.

Mol a Tuath, on the north-western side of Usinish promontory, is a bay which affords anchorage, with moderately good bolding ground, 20 in the centre of the bay, about 1½ cables offshore, in depths of from 10 to 12 fathoms (18^m3 to 21^m9).

A vessel entering this bay should be careful to avoid Bo Rubha Hallagro, a rock almost awash, close northward of Rubha Hallagro, 25 the north-eastern extremity of Usinish promontory.

There is a road leading from the beach at the head of Mol a Tuath to Usinish lighthouse.

About 1½ miles north-north-westward of Rubha Hallagro is the summit of Ornish, a promontory, 203 feet (61^m9) high.

Loch Skiport.—Islands and dangers.—Light.—Loch Skiport, 30 which is entered between Rubha Grimman, the northern extremity of Ornish, and Rubha fo Dheas, 6½ cables northward, has several land-locked anchorages, and an outer roadstead where large vessels can obtain shelter, except from easterly winds. Heavy squalls blow down from the Benmore range during south-westerly gales. 35

The outer part of the loch has several islands and islets in it, and there are small bays and inlets on both sides. About 1½ miles within the entrance Linne arm extends north-westward; the entrance channel to this arm is about 200 feet (61^m0) wide, with a least depth of 3 fathoms (5^m5) in the fairway. 40

Charts 2750, 1795.

Linne arm is entered between Aird Choraidh, about one mile west-south-westward of Rubha fo Dheas, and Rubha Mòr, about 2½ cables farther west-south-westward; there is a pier on the north-western side of Rubha Mòr. The arm is shallow, except near its south-eastern 45 end; at the north-western end of the arm an artificial cut has been made for drainage purposes, which connects it with the large shallow Loch Bee (*Lat. 57° 21' N., Long. 7° 17' W.*), 1½ miles north-westward.

Chart 2750.

The northern portion of Benmore range falls towards the southern 50 side of the harbour, whilst on the northern side the land is low. A remarkable ruin with two high gables stands near the shore of Bagh Clann Alasdair, about 3½ cables northward of Rubha fo Dheas.

Beinn Tarbert, about 2½ miles west-north-westward of Rubha Grim-

Chart 2750.

man, is 543 feet (165^m5) high ; on westerly hearings it shows a decided summit with a notch on each side.

Luirsay Dubh, an island, the south-western extremity of which is situated about 5 cables north-eastward of Rubha fo Dheas, lies close offshore in the north-eastern approach to Loch Skiport ; it is 75 feet (22^m9) high, and its south-western coast is an irregular rocky cliff. Luirsay Glas, an island close eastward of Luirsay Dubh, is 79 feet (24^m1) high, and its summit is covered with grass ; the coasts of Luirsay Glas are dark-coloured cliffs of moderate height.

Ornish island, which is situated about 2½ cables north-eastward of Rubha Grimman, lies on the southern side of the entrance channel, and protects the roadstead on the southern side of the loch. It is 80 feet (24^m4) high, and the cliffs just above high water mark are black ; the island is steep-to on its eastern, northern, and western sides.

Between the southern side of Ornish island (*Lat. 57° 20' N., Long. 7° 13' W.*) and Rubha Grimman are Block and Grey islets, which have grassy summits, and several rocks, which dry ; these islets and rocks, which encumber the channel southward of Ornish island, shelter the roadstead.

A bank, on which there is a rock awash, extends about one cable north-westward from a position about half a cable north-westward of Rubha Grimman. Float rock, at the northern end of this bank, dries 6 feet (1^m8) ; this rock is square, white on the top, and is covered with small shells.

Beinn Tarbert, bearing 279°, and just open northward of the summit of Shillay Mòr (*see below*), leads about one cable northward of Float rock.

Rubha Camas nam Feuchaig, about three-quarters of a cable west-south-westward of Ruhha fo Dheas, is 32 feet (9^m8) high ; it is fringed by a reef, which extends about a quarter of a cable southward from it. The shepherd's cottage, situated 1½ cables south-westward of the light-structure (*see below*), on the southern side of the loch, bearing 248° and open south-eastward of the south-eastern extremity of the land on the northern shore of the loch, leads close south-eastward of Rubha Camas nam Fenchaig.

Shillay Mòr, 2½ cables west-north-westward of Rubha Grimman and Shillay Beag, close southward of it, are two islands connected by a reef that dries. Shillay Mòr, the larger, has three distinct summits, the highest having an elevation of 91 feet (27^m7) and covered with heather. Shillay Beag is 129 feet (39^m3) high.

Rubb' a Mhanaich is the eastern extremity of a promontory, about 6½ cables west-south-westward of Rubha fo Dheas. This promontory forms the north-eastern side of Bagh Cbarmaig, and from the eastern entrance point of this bay a rock, which dries, extends about a quarter of a cable offshore. A rock, which dries, extends about a quarter of a cable southward from Aird Choraidh, the south-western entrance point of Bagh Charmaig.

Eilean Haey, about 3 cables westward of Shillay Mòr, lies in the entrance to Poll na Cairidh ; it is 66 feet (20^m1) high, dark, and covered with heather. There are depths of from 7 to 9 fathoms (12^m8 to 16^m5) in the channel northward of this islet, and a least depth of 3½ fathoms (5^m9) in the channel southward of the islet.

There are several rocks, which dry, in the south-western part of Poll na Cairidh.

Chart 2750.

A light is occasionally exhibited, at an elevation of 10 feet ($3^{\text{m}}0$), from a hut, 13 feet ($4^{\text{m}}0$) in height, situated at the root of the pier on Rubha Mòr.

Tidal streams.—The in-going and out-going streams begin about the same time as in the entrance to Loch Eynort but are barely perceptible except in the narrower channels.

Anchorages.—Caolas Luirsay, between the mainland and the north-western side of Luirsay Dubh (*Lat. 57° 21' N., Long. 7° 13' W.*), is a narrow channel affording anchorage to small vessels, in depths of 10^{f} from 4 to 6 fathoms ($7^{\text{m}}3$ to $11^{\text{m}}0$), mud, but there does not appear to be more than $2\frac{1}{2}$ fathoms ($4^{\text{m}}6$) in the entrance channels, and anchorage inside the loch is preferable.

A vessel can anchor in the roadstead, between the western side of Ornish island and the eastern side of Shillay Mòr, in a depth of $13\frac{1}{2}$ fathoms ($23^{\text{m}}8$).

The bay between the mainland and the southern side of Shillay Beag, also Caolas Mòr, between Shillay Mòr and Shillay Beag, north-eastward, and the mainland, south-westward, are only used by local vessels, and neither of these bays should be entered without local knowledge; their entrances are narrow, and the anchorages within much obstructed by detached rocks.

Bagh Charmaig, on the northern side of the loch, is a good land-locked anchorage for vessels of moderate size. With the exception of the rocks off the entrance points, and a rock, which dries about $12\frac{1}{2}$ feet ($3^{\text{m}}7$), extending a quarter of a cable from the western shore of the bay, about $1\frac{1}{2}$ cables north-westward of Aird Choraidh, there are no dangers in this bay.

A vessel can anchor anywhere in the bay when the mouth of the loch is shut in.

There is also good anchorage in the entrance to this bay, about $1\frac{1}{2}$ cables west-north-westward of the western extremity of Shillay Mòr, in a depth of 11 fathoms ($20^{\text{m}}1$); the channel northward of Shillay Mòr is so narrow that but little swell is felt at this anchorage. The best berth is with Bagh Charmaig open.

Bagh a Mhanaich is a narrow inlet turning eastward from the head of Bagh Charmaig, with a mud flat at its head.

Poll na Cairidh, on the southern side of the loch, westward of Eilean Haey, affords good anchorage to small vessels, but the south-western side of the bay is foul.

Directions.—A vessel bound for Loch Skiport must pass eastward and northward of Ornish island, giving it a berth of about $1\frac{1}{2}$ cables, and, if intending to anchor in the roadstead, she should anchor about midway between the western side of Ornish island and the eastern side of Shillay Mòr, keeping Beinn Tarbert (*Lat. 57° 20' N., Long. 7° 18' W.*) bearing about 277° and just open northward of the latter island, so as not to approach Float rock too closely.

If the vessel is proceeding higher up the loch she should steer to pass about midway between the northern side of Shillay Mòr and Rubh' a Mhanaich, and anchor off the entrance to Bagh Charmaig, in depths of from 8 to 10 fathoms ($14^{\text{m}}6$ to $18^{\text{m}}3$), or in that bay, taking care to avoid the rocks off the entrance points.

Chart 3168.

Coast.—Between the northern extremity of Luirsay Dubh and the

Chart 3168.

southern extremity of Wiay, an island situated about $2\frac{1}{2}$ miles northward, the eastern coast of South Uist is much broken.

Wiay attains an elevation near its centre, in Beinn a Tuath, of 330 feet (100 m^6) ; it is thickly covered with heather and pasturage, with but little outcropping rock, and slopes gently ; from the southward it has a smooth outline rising to a rounded summit.

Glas eileanan, situated about $3\frac{1}{2}$ cables northward of the northern extremity of Luirsay Dubh, consist of two islets fringed by a reef, and 10 are 42 feet (12 m^8) high. There is a deep passage between Glas eileanan and Corr-eileanan, about 3 cables south-south-westward, but islets and rocks extend about $2\frac{1}{2}$ cables off the coast of South Uist to a point northward of Craig Calternish, a rounded summit, 87 feet (26 m^5) high, about $1\frac{1}{2}$ miles westward of Glas eileanan. A detached rock, with a 15 depth of 5 feet (1 m^5) over it, lies about $4\frac{1}{2}$ cables north-westward of Craig Calternish.

Du' Sgeir a' Deas, situated about $2\frac{1}{4}$ cables southward of Meall an t Sruith, the south-eastern extremity of Wiay, is an islet 5 feet (1 m^5) high. Du' Sgeir a' Tuath, lying about 3 cables east-north-eastward 20 of Du' Sgeir a' Deas and about 2 cables from Meall an t Sruith, is an islet 4 feet (1 m^2) high ; a rock, which dries 3 feet (0 m^9), is situated about three-quarters of a cable eastward of Du' Sgeir a' Tuath.

About 2 cables west-north-westward of Du' Sgeir a' Deas and close off the southern side of Wiay are three islets and some rocks, with a 25 boat channel northward of them. Red rock, situated about three-quarters of a cable south-westward of Regam, the central islet, dries 4 feet (1 m^2) ; a shoal, awash, extends about half a cable southward from Red rock.

Scaraclett, a group of islets about one mile north-north-eastward of 30 Du' Sgeir a' Tuath, lie close off the north-eastern side of Wiay (*Lat. 57° 24' N., Long. 7° 13' W.*) ; boats can obtain shelter westward of these islets, but there are many rocks in that area which dry.

Charts 2750, 3168.

Loch Sheilavaig, which is entered between Eilean an Fhraoch Mia 35 and Eilean Mhic'il Phadruig, two islets about 5 cables west-south-westward of Glas eileanan, is landlocked.

Chart 3168.

Grey Island rocks, an extensive group, which dries 6 feet (1 m^8), lie with their southern extremity about $9\frac{1}{4}$ cables northward of Eilean 40 Mhic'il Phadruig, with Flagro rocks, which dry 6 feet (1 m^8), about midway between. A shoal, with a least depth of 8 feet (2 m^4) over it, lies about $1\frac{1}{2}$ cables north-eastward of Flagro rocks.

Chart 3168, with plan of Loch Carnan.

Sandavaig, a promontory, the south-eastern extremity of which lies 45 about $4\frac{1}{2}$ cables north-westward of Craig Calternish, is 43 feet (13 m^1) high, and steep-to on its eastern side except at its north-western end, where depths of one fathom (1 m^8) extend about a quarter of a cable north-eastward.

Loch Carnan.—Dangers.—Light-buoys.—Lights.—Loch Carnan 50 which is enclosed by the coast of South Uist, on the south, and by Gasay, an island, 40 feet (12 m^2) high, on the north, is situated about $1\frac{1}{2}$ miles west-north-westward of Eilean Mhic'il Phadruig. The channel leading to the jetty (page 263), passing northward of Gasay, is marked by light-buoys and a leading line.

Chart 3168, with plan of Loch Carnan.

A can light-buoy, painted in red and white vertical stripes, known as " Landfall buoy ", and exhibiting a *red flashing light every five seconds*, is moored about $1\frac{1}{2}$ miles eastward of Grey Island rocks.

A can light-buoy, painted red, exhibiting a *red flashing light every three seconds*, is moored about $1\frac{1}{2}$ cables northward of the northern extremity of Grey Island rocks. 5

A black conical light-buoy, No. 1, exhibiting a *white flashing light every two and a half seconds*, is moored about $3\frac{1}{2}$ cables east-north-eastward of the summit of Gasay. A can light-buoy, No. 2, painted red, exhibiting a *red flashing light every two seconds*, is moored about half a cable farther southward. 10

A can light-buoy, No. 3, painted red, exhibiting a *red flashing light every second*, is moored about $1\frac{1}{2}$ cables north-north-westward of the summit of Gasay, and about half a cable southward of Taigh-Iamhain, 15 34 feet (10^m4) high.

A can light-buoy, No. 4, painted red, exhibiting a *red flashing light every second*, is moored about $1\frac{3}{4}$ cables westward of the summit of Gasay (*Lat. $57^{\circ} 22' N.$, Long. $7^{\circ} 15' W.$*). 20

A black conical light-buoy, No. 2, exhibiting a *white flashing light every second*, is moored about $3\frac{1}{2}$ cables west-south-westward of the summit of Gasay.

Leading lights are exhibited from white posts, each with a diamond topmark, the front light at an elevation of 23 feet (7^m0) and the rear light, at an elevation of 37 feet (11^m3), about 5 cables west-south-westward of the summit of Gasay ; in line they bear 220° . 25

A rock, with a depth of $2\frac{1}{2}$ fathoms (4^m1) over it, lies about $5\frac{1}{2}$ cables south-south-eastward of the summit of Gasay. A rock, with a depth of 2 fathoms (3^m7) over it, and a rock, with a depth of three-quarters of a fathom (1^m4) over it, lie about 5 cables southward and $4\frac{1}{2}$ cables southward, respectively, of the summit of Gasay. 30

A jetty connected by road through Carnan to Loch Boisdale and Benbecula, is situated about $4\frac{1}{2}$ cables west-south-westward of the summit of Gasay ; it is about 180 feet (54^m9) long, and has a depth of 12 feet (3^m7) at its head, but in places in its approach there are 35 only 10 feet (3^m0). It provides shelter to small craft with local knowledge.

Islets and rocks extend about three-quarters of a mile eastward from Gasay, and about 3 cables southward from its south-eastern end.

Taigh Iamhain, 34 feet (10^m4) high, lies about $1\frac{1}{2}$ cables north-north-westward of the northern extremity of Gasay. A rocky ridge, with a least depth of 8 feet (2^m4) over it, lies about midway between these islets. Taigh Iamhain is separated by a narrow channel from the eastern end of Gashernish, about three-quarters of a cable westward, and by a channel, with a least depth of 8 fathoms (14^m6) in the fairway 45 from Sgeir a Choin, 15 feet (4^m6) high, about $2\frac{1}{2}$ cables east-north-eastward.

The loch is confined on its north-western side by Direy island, 30 feet (9^m1) high, the extremity of which lies about $2\frac{1}{2}$ cables westward of the north-western extremity of Gasay. 50

Chart 3168.

Coast.—Dangers.—Buoy.—Pilots.—Bagh nam Faoileann is an inlet lying close northward of Gashernish, 66 feet (20^m1) high, which forms the north-eastern end of South Uist. It is entered between

Chart 3168.

Steisay, an islet, 54 feet ($16^m 5$) high, about $8\frac{1}{2}$ cables north-eastward of Gasay, and the rocks and foul ground extending about three-quarters of a mile eastward from Gashernish. Fodragay is an island, 5 the south-eastern extremity of which is situated about 5 cables north-north-westward of the north-western end of Steisay.

A black cylindrical buoy is moored off the south-eastern edge of the shoal bank at the head of Bagh nam Faoileann. A vessel waiting for a pilot should anchor about one cable eastward of this buoy.

10 South ford, the continuation of Bagh nam Faoileann north-westward, is the area between the northern side of South Uist and the south-western side of Benbecula, which dries and is described on page 333.

Peter's port is the anchorage $3\frac{1}{2}$ cables westward of the south-western extremity of Wiay; there is neither village nor inhabitants, but a vessel calls occasionally with supplies for the southern side of Benbecula. There is a pier at the south-eastern extremity of Eilean na Cille, situated 4 cables westward of the south-western extremity of Wiay; there is a depth of 8 feet ($2^m 4$), rocky bottom, alongside the 20 pier, but the approach is so difficult, and there is so little room to turn, that it is not used by the local vessels.

The port should not be entered without local knowledge.

Eilean na Cille (*Lat. $57^{\circ} 24' N.$, Long. $7^{\circ} 15' W.$*) is connected by a causeway with the main island of Benbecula.

25 **Benbecula.—Aspect.**—See page 333.

The eastern coast is very rocky and much indented, with numerous islands and rocks off it. Many of these indentations afford shelter to small vessels, but none is easy of access or has an entrance more than one cable wide, and all are encumbered with rocks and shoals.

30 **Coast.—Dangers.**—From Rarnish, a promontory at the south-eastern end of Benbecula, about 6 cables west-north-westward of Rubha Cam nan Gall, the north-eastern extremity of Wiay, the coast trends about $1\frac{1}{2}$ miles northward to the entrance to Loch Uskavagh. Numerous rocks and islets lie off this part of the coast.

35 Between the north-western side of Wiay and Rarnish are Keiravagh islands. Loch a Laip, the channel southward of Keiravagh islands, is encumbered with rocks at its eastern and western ends.

Bo Greanamul, about 6 cables north-eastward of Rubha Cam nan Gall, has a least depth of $1\frac{1}{2}$ fathoms ($2^m 3$) over it; its position is 40 generally indicated by tide-rips. Luirsay Glas (page 360), bearing 193° and open eastward of Wiay, leads eastward of this rock.

Greanamul Deas, about $4\frac{1}{2}$ cables east-north-eastward of the eastern extremity of Rarnish, is an islet 45 feet ($13^m 7$) high, fringed by a reef.

45 Maaey Glas, $4\frac{1}{2}$ cables northward of Greanamul Deas, is an islet 28 feet ($8^m 5$) high; foul ground extends about three-quarters of a cable south-eastward from its southern end, and about $1\frac{1}{2}$ cables northward from its north-western end.

Numerous islets, rocks, and shoals lie westward of a line joining the summits of Greanamul Deas and Maaey Glas.

50 Maaey Riabhach, situated close north-westward of Maaey Glas (*Lat. $57^{\circ} 26' N.$, Long. $7^{\circ} 11' W.$*), is an islet 39 feet ($11^m 9$) high; foul ground extends about half a cable northward from its northern end, and about $1\frac{1}{2}$ cables north-westward of its north-western side.

Loch Uskavagh.—Islets and dangers.—Loch Uskavagh is

Chart 3168.

entered between Maaey Glas and Greanamul, about one mile north-eastward ; it is exceedingly intricate to navigate, and the chart is the only guide.

At high water the loch appears as a broad open firth encumbered with green islets, which, at low water, become an almost continuous ridge of bare rocks. There is a well-sheltered anchorage, $1\frac{1}{2}$ cables in extent, with depths of from 6 to 8 fathoms (11^m0 to 14^m6), mud, in the loch.

Greanamul, on the north-eastern side of the entrance, is a group of 10 islets and rocks, of which the easternmost and largest is 52 feet (15^m8) high.

Bo' a Chomhara, on the southern side of the loch about $3\frac{1}{2}$ cables north-westward of the north-western end of Maaey Riabhach, dries 4 feet (1^m2).¹⁵

Bogha Liath, on the northern side of the loch about one mile west-south-westward of the easternmost islet of the Greanamul group, dries 6 feet (1^m8) ; a rock, with a depth of less than 6 feet (1^m8) over it, is situated about three-quarters of a cable south-south-eastward of Bogha Liath.²⁰

Orasay Uskavagh, an island close off the southern side of the loch, about $5\frac{1}{2}$ cables west-north-westward of the north-western extremity of Maaey Riahliach, is separated from the main island southward by the Sound of Orasay, which dries. Bearran, about $1\frac{1}{2}$ cables northward of Orasay Uskavagh, is a group of islets and rocks. Sgeir na Geadh, about three-quarters of a cable south-eastward of the eastern extremity of Bearran, is a green islet. The navigable channel between Orasay Uskavagh (*Lat.* $57^{\circ} 26' N.$, *Long.* $7^{\circ} 13' W.$) and Bearran is about half a cable wide, with depths of from $4\frac{1}{2}$ to 9 fathoms (7^m8 to 16^m5).

Local knowledge is necessary for a vessel proceeding westward of 30 Orasay Uskavagh.

Tidal streams.—The in-going stream begins about +0545 Stornoway (+0130 Dover), the out-going stream begins about -0025 Stornoway (-0440 Dover) ; the streams are weak everywhere in the loch.³⁵

Anchorage.—Directions.—The best anchorage is about 4 cables west-north-westward of the western extremity of Orasay Uskavagh, in a depth of 8 fathoms (14^m6), mud.

Lidistrome, a white house, situated at the head of the loch, about $1\frac{1}{2}$ miles westward of the western extremity of Orasay Uskavagh, bearing 263° and just open southward of Sgeir na Geadh, leads towards the entrance to the narrows northward of Orasay Uskavagh, and, when about $1\frac{1}{2}$ cables from the eastern end of that island, a vessel should anchor and wait for a pilot.⁴⁰

Approaches to Kallin.—Islets and dangers.—Kallin, which is situated at the south-eastern end of Grimsay, an island near the eastern end of North ford, about 2 miles north-north-westward of Greanamul, is the place where the supplies for the shops and farmers of the northern part of Benbecula and the North ford are landed, and considerable quantities of lobsters and whelks exported. The water is shoal where the anchorage is well sheltered, and there are several rocks which make access to it difficult. No supplies can be depended on.⁴⁵

The approach of Kallin is between the Maragay group, situated close north-westward of Greanamul, and Rubha na Rodagrich, the

Chart 3168.

southern extremity of Ronay, $6\frac{1}{2}$ cables north-north-eastward. Rubha na Rodagrich, is a cliffy promontory, about 50 feet ($15^{\text{m}}2$) high, which rises about $3\frac{1}{2}$ cables inland to Beinn Rodagrich, a hill, 319 feet ($97^{\text{m}}2$) high; close southward of this point are two rocks which dry.

St. Michael's chapel, situated on St. Michael's point, the south-eastern extremity of Grimsay, about 7 cables west-north-westward of Rubha na Rodagrich, is a prominent ruin.

A group of islets and rocks, of which Maragay Mòr and Maragay Beag are the largest, lies about 2 cables offshore, on the south-western side of the approach to Kallin; Maragay Mòr and Maragay Beag (*Lat.* $57^{\circ} 28' N.$, *Long.* $7^{\circ} 12' W.$), are each 58 feet ($17^{\text{m}}7$) high. There is no channel through this group, but there is a narrow channel on its western side leading to North ford.

15 Morrisons rock, situated in the approach to Kallin, about $3\frac{1}{2}$ cables east-north-eastward of the north-eastern extremity of Maragay Mòr, has a least depth of $1\frac{1}{4}$ fathoms ($3^{\text{m}}2$) over it.

The summit of Wiay (page 362), bearing 200° and open eastward of Greanamul (page 365), leads eastward, and Rueval (page 333), 20 bearing 268° and open northward of Maragay Beag, leads northward of Morrisons rock.

Bo Mòr, about $2\frac{1}{2}$ cables northward of the north-eastern extremity of Maragay Mòr, dries 9 feet ($2^{\text{m}}7$).

Bo Carrack, which dries 4 feet ($1^{\text{m}}2$), lies about $3\frac{1}{2}$ cables westward of Rubha na Rodagrich on the eastern extremity of a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extending from North ford. A shoal, with a depth of $2\frac{1}{2}$ fathoms ($4^{\text{m}}6$) over it, lies about three-quarters of a cable north-eastward of Bo Carrack.

From Ru na Monach, the south-western extremity of Ronay, rocks, 30 which dry, extend about half a cable south-south-westward.

Bo na Traghad, about 2 cables west-south-westward of Ru na Monach, dries 3 feet ($0^{\text{m}}9$).

Communication.—There is a post office at Kallin, which is connected with the telephone system.

35 **Anchorages.**—The anchorages off Kallin are only available for small vessels.

The usual anchorage is about $1\frac{1}{2}$ cables westward of the Ru na Monach, in depths of from 3 to 4 fathoms ($5^{\text{m}}5$ to $7^{\text{m}}3$), but it is open south-eastward; in summer, however, it is seldom that any swell is felt. A vessel can also obtain anchorage about 2 cables north-north-westward of Ru na Monach and three-quarters of a cable from the western side of Ronay, in depths of from one to $1\frac{1}{2}$ fathoms ($1^{\text{m}}8$ to $2^{\text{m}}7$).

There is also anchorage in Vallastrome, a narrow channel between 45 the south-eastern side of Grimsay and the western side of Garbh (Gairbh) eilean Mòr, about $4\frac{1}{2}$ cables northward of St. Michael's point, in depths of from 2 to 6 fathoms ($3^{\text{m}}7$ to $11^{\text{m}}0$). This anchorage is entered from south-eastward and its entrance is much obstructed by rocks. Kallin village is situated on the western shore of this anchorage, 50 and consists of a few cottages and a small slated house.

Directions.—The ruin of St. Michael's chapel is visible to a vessel approaching from southward. After passing eastward of Morrisons rock, the clearing marks for which were given above, a vessel should steer for Rubha na Rodagrich (*Lat.* $57^{\circ} 28' N.$, *Long.* $7^{\circ} 11' W.$).



To face page 207.



Maddy Môr, bearing 613°, and open eastward of Ffôdny Môr.

[Original date 1802.]

Ffôdny Môr.



Rheval, bearing 283°, and open southward of Rheva na Rodagrieli.

[Original date 1828.]

Rheva na Rodagrieli.

Chart 3168.

bearing about 313° , and, keeping about one cable from the southern and south-western sides of Ronay, steer for the desired anchorage.

It is not advisable for a vessel to proceed into Vallastrome without a pilot. The channel leading to this anchorage is very narrow, with a least depth of 12 feet (3^m7), and the tidal streams are strong. 5

Coast.—Dangers.—The area between the north-eastern end of Benbecula and the south-eastern end of North Uist, $3\frac{1}{2}$ miles north-north-eastward, is occupied by the islands Ronay, Flodday Mòr and Flodday Beag. 10

Ronay, the coast of which is much indented, has two hills, Beinn Rodagrich, and Beinn a Charnain, one mile northward of Ru na Monach; the latter hill is 374 feet (114^m0) high.

The channel between the western side of Ronay and the eastern side of Grimsay, northward of Kallin, is encumbered with rocks and 15 shoals.

Ritchie rock, about $7\frac{1}{2}$ cables east-north-eastward of Rubha na Rodagrich, has a least depth of 3 feet (0^m9) over it; about one cable north-north-westward of Ritchie rock is a shoal, with a depth of $1\frac{1}{2}$ fathoms (2^m7) over it, and close northward of this shoal is another 20 shoal, with a depth of 4 fathoms (7^m3) over it.

Charts 3168, 1795.

Rueval (page 333), bearing 263° and open southward of Rubha na Rodagrich, leads southward, and Maddy Mòr (page 370), bearing 013° and open eastward of Flodday Mòr (see below), leads close eastward 25 of these dangers. See views facing this page.

Chart 3168.

The channel between these rocks and the coast of Ronay north-westward should not be used, as the bottom is uneven.

Eilean an Fheidh, lying close off the eastern side of Ronay, about 30 $1\frac{1}{2}$ miles north-north-eastward of Rubha na Rodagrich, has foul ground extending about $1\frac{1}{2}$ cables south-south-eastward from its south-eastern side. A reef, which dries one foot (0^m3), is situated $1\frac{1}{2}$ cables east-south-eastward of the eastern extremity of Eilean an Fheidh. The eastern extremity of Flodday Beag (see below), bearing 013° and 35 just open eastward of the eastern extremity of Flodday Mòr, leads eastward of these dangers.

Flodday Mòr, close off the north-eastern side of Ronay, is 86 feet (26^m2) high. Flodday Beag (*Lat. $57^{\circ} 31' N.$, Long. $7^{\circ} 09' W.$*), lying close southward of the south-eastern extremity of North Uist, is 92 40 feet (28^m0) high. Both these islands are steep-to on their eastern side, but there is only a boat channel between them.

Flodday sound.—Anchorages.—Directions.—Flodday sound, westward of Flodday Mòr and Flodday Beag, possesses two anchorages, one rather confined, about $2\frac{1}{2}$ cables westward of the northern extremity of Flodday Mòr, with depths of about 7 fathoms (12^m8), and the other, about $2\frac{1}{2}$ cables west-north-westward of the western extremity of Flodday Beag, with depths of from 10 to 12 fathoms (18^m3 to 21^m9). 45

A vessel entering Flodday sound from southward should give a good 50 berth to Eilean an Fheidh, and, when the sound is well open, steer in, keeping close to the south-western side of Flodday Mòr. She should take care to avoid the spit, with a depth of 3 fathoms (5^m5) over it, extending from the south-western side of Flodday Mòr and the reef

Chart 3168.

extending about 70 yards ($64^{\text{m}}0$) westward from the north-western extremity of that island, and, passing eastward of Hannaray, an island $1\frac{1}{2}$ cables north-westward of Flodday Mòr, anchor west-north-westward of the western extremity of Flodday Beag. The least depth in this channel appears to be about 3 fathoms ($5^{\text{m}}5$).

Chart 1795.

North Uist.—Aspect.—See page 335.

Chart 3168.

- 10 **Coast.**—Between the south-eastern extremity of North Uist and Rubha Mhic Ghille-mhicheil (chart 2474), the southern entrance point of Loch Eport, about $2\frac{3}{4}$ miles northward, the coast is steep-to one cable offshore.

Tidal streams.—Off the eastern coast of North Uist the north-going stream begins —0555 Stornoway (+0215 Dover), the south-going stream begins +0030 Stornoway (—0345 Dover); the spring rate in each direction off the salient points is about 2 knots, but is less between the points, and the streams become weaker farther seaward (see also page 379).

Chart 1795.

Loch Eport.—Loch Eport is entered between Rubha Mhic Ghille-mhicheil and the coast about 3 cables northward. Arms of brackish water branch off on either side, and the tide flows into them only at or near high water. The head of the loch is separated from the head 25 of Oban a' Chlachain on the western side of North Uist by a strip of land about $1\frac{1}{2}$ cables wide.

Loch Obisary is entered on the southern side of Loch Eport, about $1\frac{1}{2}$ miles within the entrance; the sea only enters when within 7 inches ($0^{\text{m}}2$) of the level of mean high water springs. In one place it has a 30 depth of 20 fathoms ($36^{\text{m}}6$).

Local knowledge is essential for the navigation of Loch Eport (*Lat. $57^{\circ} 33' N.$, Long. $7^{\circ} 08' W.$*).

Aspect.—The position of Loch Eport may be identified by several remarkable hills in its vicinity, amongst them being Beinn Eaval, and 35 Beinn na h Aire, a double-topped hill on its southern slope (see page 335); the summit of Beinn Eaval is $2\frac{1}{2}$ miles south-westward of Rubha Mhic Ghille-mhicheil. Burrival, one mile north-north-eastward of Beinn Eaval, is a hill 458 feet ($139^{\text{m}}6$) high, with a table-shaped summit.

40 South Lee (page 335), on the northern side of Loch Eport, is the highest point of a rugged range extending from Loch Eport to Loch Maddy; this summit is nearly separated from the north-eastern part of the range by a deep valley, the hill falling almost vertically for about 600 feet ($182^{\text{m}}9$). The division in the range is not open when bearing 45 less than 240° .

The southern side of Loch Eport is composed of a deep black bog, with a few straggling cottages; the northern side of the loch has no inhabitants except those of a farm at the foot of Beinn Langass, a hill 290 feet ($88^{\text{m}}4$) high, 4 miles westward of South Lee.

50 **Entrance.**—The shores on each side of the entrance to Loch Eport are steep, and in some places cliffy; just within the entrance, on the southern side, about $4\frac{1}{4}$ cables west-north-westward of Rubha Mhic Ghille-mhicheil, rocks, which dry, extend about 100 feet ($30^{\text{m}}5$) offshore.

The entrance has moderate depths as far as Skart rocks, about

Chart 1795.

2 miles within the entrance ; thence the channel is very narrow, with numerous rocks, islets, and shoals, but a depth of 3 fathoms ($5^{\text{m}}5$) can be carried to within $1\frac{1}{2}$ miles of the head of the loch ; within this distance the depths decrease, but there are holes with depths of 3 fathoms 5 ($5^{\text{m}}5$) to within a short distance of the head.

Pilots.—There are no licensed pilots at Loch Eport, but the services of a man with local knowledge might be obtained from one of the cottages on the southern side about $2\frac{1}{2}$ miles within the entrance. It is better, however, to obtain assistance from Loch Maddy. 10

Tidal streams.—The in-going stream begins about +0545 Stornoway (+0130 Dover) and the out-going stream begins about -0025 Stornoway (-0440 Dover), as in Loch Uskavagh ; the spring rate in each direction in the narrows at the entrance is about 3 knots with eddies close inshore on both sides. The streams are weak everywhere 15 in the loch inside the narrows, but in Acairseid Lee an eddy runs eastward during the in-going stream.

Islets and dangers.—Bo Lea, situated about $1\frac{1}{2}$ cables north-north-westward of Rubha Mhic Ghille-mhicheil and about three-quarters of a cable offshore, is a rock 6 feet ($1^{\text{m}}8$) high ; a reef, which dries, extends 20 about half a cable southward and northward from it, and about three-quarters of a cable west-north-westward from it. Bo Carrach, about 2 cables westward of Bo Lea, dries 8 feet ($2^{\text{m}}4$).

The hole through the north-western end of Eilean Mhic Shealtair, open, leads northward of Bo Carrach. 25

Eilean Mhic Shealtair, situated close off the southern shore of the loch, about 7 cables westward of Bo Lea, does not appear to be an island until close to it ; the summit is a hummock, 54 feet ($16^{\text{m}}5$) high, and the northern part is perforated, the hole being visible from the entrance to the loch. 30

Rubha nan Gall, a salient point on the northern shore of the loch, about $8\frac{1}{2}$ cables within the entrance, rises to a round-topped hill, 38 feet ($11^{\text{m}}6$) high ; a rock, a few feet high, lies about half a cable south-westward of it. There are several rocks extending about three-quarters of a cable westward and north-westward from Rubha nan 35 Gall. A vessel should not approach this area closely.

Sgeir n' Iolla, about $2\frac{1}{2}$ cables westward of Rubha nan Gall and $1\frac{1}{2}$ cables offshore, dries 12 feet ($3^{\text{m}}7$) ; its southern side is steep-to, but foul ground lies between it and the shore north-eastward. A bank, with a depth of $2\frac{1}{2}$ fathoms ($4^{\text{m}}6$) over its extremity, extends about 40 half a cable westward from Sgeir n' Iolla. The entrance of the loch a little open leads southward of Sgeir n' Iolla.

Riffag Mor, situated on the southern side of the loch, about $3\frac{1}{2}$ cables west-south-westward of Eilean Mhic Shealtair, is a group of several low grassy islets, nearly connected with each other and with the shore 45 at low water ; a reef, that dries, extends about 70 yards ($64^{\text{m}}0$) northward and about one cable west-north-westward from Riffag Mòr.

Caragarry point (*Lat. $57^{\circ} 34' N.$, Long. $7^{\circ} 08' W.$*), on the northern side of the loch, about $5\frac{1}{2}$ cables eastward of Rubha nan Gall, bearing 082° and just open northward of Eilean Mhic Shealtair, leads north- 50 ward of Riffag Mòr and the rocks in its vicinity.

Skart rocks, about $5\frac{1}{2}$ cables westward of Rubha nan Gall, consist of several small above-water rocks, of which the westernmost and highest is $3\frac{1}{2}$ feet ($1^{\text{m}}1$) high.

Chart 1795.

Local knowledge is essential for navigating this loch farther westward.

There is a pier, which nearly dries, at the southern side of the head of the loch ; this pier is used for the traffic with the southern and western parts of North Uist.

Anchorages.—There is good anchorage in and abreast of the entrance to Acairseid Lee and small craft anchor in many places higher up the loch. The best berth is with Skart rocks bearing 260° , 10 distant 2 cables, and Burrival bearing 161° , in a depth of 12 fathoms (21^m9), mud. The loch entrance will then be open, but not much tidal stream will be felt.

Bagh a' Bhiorain, on the southern side of the loch, close southward of Riffag Mòr, is a basin with depths of from 3 to 8 fathoms (5^m5 to 14^m6), mud bottom ; the entrance channel south-westward of Riffag Mòr has depths of from 2 to 3 fathoms (3^m7 to 5^m5), but it should not be used without local knowledge.

Burrival slopes down towards the bead of this bay and terminates in a cliff of considerable height, which returns a remarkable echo.

20 Acairseid Lee, on the northern side of the loch, an inlet northward of Sgeir n' lolla, is considered to be a good anchorage; a convenient berth is with the summit of Rubha nan Gall bearing 110° , distant about $3\frac{1}{2}$ cables, in a depth of 9 fathoms (16^m5).

Directions.—A vessel entering Loch Eport should steer to pass 25 about midway between Bo Lea and the northern shore, and, after passing northward of Bo Carrach, close the northern shore of the narrows to avoid the rocks extending about 100 feet (30^m5) from the southern shore. She should then keep in mid-channel, with the loch entrance a little open, and, after passing northward of Eilean Mhic 30 Shealtair, steer for Skart rocks bearing 270° , and when Burrival bears about 161° and is open westward of Riffag Mòr, anchor in a depth of 12 fathoms (21^m9).

Coast.—Between the northern entrance point of Loch Eport and a promontory, 112 feet (34^m1) high, the eastern entrance point of Sgal 35 Saile, a narrow inlet about 6 cables north-eastward, there are no dangers except off Mol Teiltein, a small bay, where some rocks extend about one cable offshore. Sgal Saile is not suitable for anchorage, but in an emergency a vessel might be beached upon a smooth fine gravel beach at its head.

40 The eastern entrance point of this inlet is a vertical cliff, 112 feet (34^m1) high.

Between the eastern entrance point of Sgal Saile and Leac nam Madadh (chart 2825), about 2 miles north-eastward, the coast is bold and steep-to.

45 An t-Aigeach, close offshore, about half a cable east-north-eastward of the eastern entrance point of Sgal Saile, is a double-headed rock with two sharp peaks from 10 to 15 feet (3^m0 to 4^m6) high.

Chart 2825.

Maddy Gruamach (*Lat. $57^{\circ} 35' N.$, Long. $7^{\circ} 06' W.$*), about $4\frac{1}{2}$ cables 50 southward of Leac nam Madadh and a quarter of a cable offshore, is a rocky islet 80 feet (24^m4) high ; there is no channel westward of this islet. Maddy Mòr, an islet 85 feet (25^m9) high, about 3 cables north-north-eastward of Maddy Gruamach and $1\frac{1}{2}$ cables offshore, is steep-to, except on its western side, where a shoal bank extends for about 70

Chart 2825.

yards ($64^{\text{m}0}$) ; its western coast is a dark columnar basaltic cliff, but the island shows a green slope to seaward.

There is a channel, free from dangers, with depths of from 4 to 8 fathoms ($7^{\text{m}}3$ to $14^{\text{m}}6$), westward of Maddy Mòr.

Leac nam Madadh is the north-eastern extremity of the South Lee range (page 335) ; a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extends about half a cable northward from this point.

Loch Maddy.—Islands and dangers.—Light.—Loch Maddy is entered between Leac nam Madadh and Weaver's point, $8\frac{1}{2}$ cables northward ; it affords poor but convenient anchorage, and its position is easily identified from seaward. Both the entrance and the coast on either side of it are clear of dangers, and a vessel can proceed to a safe anchorage without the aid of a pilot.

Weaver's point (*Lat. $57^{\circ} 36' N.$, Long. $7^{\circ} 06' W.$*) terminates in a cliff about 104 feet ($31^{\text{m}}7$) high, and is steep-to ; in the background are hills with a rounded outline from 292 to 377 feet ($89^{\text{m}}0$ to $114^{\text{m}}9$) high.

A light is exhibited, at an elevation of 70 feet ($21^{\text{m}}3$), from a white hut, 12 feet ($3^{\text{m}}7$) in height, situated on Weaver's point.

On the south side of the entrance, the coast rises steeply to Beinn Lee, over 800 feet ($243^{\text{m}}8$) high, one mile inland.

Within the entrance the loch is studded with islands, islets and shoals. The bottom is generally sand, or mud over rock, and affords poor holding ground.

Maddy Beag is a rock, 20 feet ($6^{\text{m}}1$) high and steep-to ; the channel between it and Weaver's point, about $1\frac{1}{2}$ cables north-north-westward, is deep and free from dangers.

Glas eilean Mòr, on the southern side of the loch, about $4\frac{1}{2}$ cables north-westward of Leac nam Madadh, is a small square rock, 24 feet ($7^{\text{m}}3$) high. A bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extends about three-quarters of a cable north-eastward and half a cable northward from Glas eilean Mòr ; a reef, which dries 5 feet ($1^{\text{m}}5$), extends about one cable westward from its western end. A shoal, with a depth of 4 fathoms ($7^{\text{m}}3$) over it, lies about $3\frac{1}{2}$ cables west-south-westward of Glas eilean Mòr.

Between Glas eilean Mòr and the southern shore there is a channel about $1\frac{1}{2}$ cables wide, with a least depth of 18 feet ($5^{\text{m}}5$) in it. About $3\frac{1}{2}$ cables east-north-eastward of Glas eilean Mòr there is a shoal, with a depth of 41 feet ($12^{\text{m}}5$) over it.

Faihore and Ruigh Liath, four islets lying from $8\frac{1}{2}$ cables westward of Glas eilean Mòr, are nearly joined at low water. Faihore, the northernmost and largest islet, is 41 feet ($12^{\text{m}}5$) high. A rocky reef, the outer part of which dries 6 feet ($1^{\text{m}}8$), extends about three-quarters of a cable south-eastward from the eastern end of Faihore, and the bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, on which these islets are situated, extends about 3 cables west-south-westward from this islet ; a shoal, with a depth of 21 feet ($6^{\text{m}}4$) over it, lies about $1\frac{1}{2}$ cables north-westward of the northern extremity of Faihore. Rocks, which dry 5 feet ($1^{\text{m}}5$), and a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extend about three-quarters of a cable southward from Ruigh Liath. A rocky bank, which dries 7 feet ($2^{\text{m}}1$), extends about half a cable from the southern shore southward of Ruigh Liath, reducing the width of the navigable channel southward of these islets to about one cable.

Chart 2825.

An Glais eilean Meadhonach (*Lat. 57° 36' N., Long. 7° 07' W.*), about $4\frac{1}{2}$ cables north-westward of Glas eilean Mòr, is a rock, 17 feet (5 m 2) high. Rough rock, which dries 9 feet (2 m 7), lies about three-quarters of a cable south-westward of An Glais eilean Meadhonach ; a bank, with depths of less than 3 fathoms (5 m 5) over it, extends about half a cable northward from An Glais eilean Meadhonach.

Hamersay, an island, 33 feet (10 m 1) high, situated 3 cables west-south-westward of An Glais eilean Meadhonach, is fringed by a reef, 10 which extends about three-quarters of a cable east-north-eastward from its northern end. McInnis rock, about three-quarters of a cable west-south-westward of the western extremity of Hamersay, dries 9 feet (2 m 7).

There are many islets, rocks, and shoals at the head of the loch, 15 abreast Hamersay.

Red rock, about 3 cables north-westward of Hamersay, dries.

Floiday, an island, the southern extremity of which is situated about 6 cables westward of Weaver's Point lighthouse, attains an elevation of 77 feet (23 m 5) ; its southern and eastern coasts are 20 moderately steep-to, but its western, northern and north-eastern coasts are fringed by a rocky bank, parts of which dry from 2 to 4 feet (0 m 6 to 1 m 2). About a quarter of a mile north-westward of the western side of Floiday, a chain of islands and islets extends north-westward.

25 Little Glas, about $1\frac{1}{2}$ cables north-north-westward of An Glais eilean Meadhonach, is a rock, 17 feet (5 m 2) high, connected with the point $8\frac{1}{2}$ cables west-north-westward, on which Sponish house stands, by a shoal bank, on which there are several islets and rocks ; the north-eastern edge of this bank forms the south-western side of Sponish 30 harbour.

Tidal streams.—The in-going stream begins about +0550 Stornoway (+0135 Dover) and the out-going stream begins about -0030 Stornoway (-0445 Dover). The streams are weak in the loch generally but the out-going stream runs strongly on the southern side of 35 the entrance especially during and after heavy rain and sets towards Maddy Mòr ; during the in-going stream there is a fairly strong north-east-going stream on the northern side of the entrance between Weaver's point and Maddy Beag. The stream on the southern side of the entrance is partly caused by the south-going coastal stream ; that 40 on the northern side of the entrance is caused entirely by the north-going coastal stream.

Anchorages.—Beacon.—Bagh Chlann Neill is a small inlet on the southern shore of the loch just inside the entrance.

Acairseid nam Madadh is entered about $3\frac{1}{2}$ cables west-south-westward of Rubha nam Pleac, on the southern shore of the loch ; it is a narrow inlet suitable for small craft. There is a very narrow entrance channel between reefs on both sides which dry.

Bagh Ard nam Madadh (*Lat. 57° 35' N., Long. 7° 08' W.*) is entered about 6 cables west-south-westward of Rubha nam Pleac, on the 50 southern shore of the loch ; there is anchorage about 3 cables eastward of Faihore ; though open eastward no swell comes home here, but squalls are felt with the wind from the south-westward, and the holding ground is not good ; squalls, which are so violent in other parts of the loch, are little felt.

Chart 2825.

A vessel entering this anchorage should be careful to avoid the shoal with a depth of 4 fathoms ($7^{\text{m}}3$) over it, $3\frac{1}{2}$ cables west-south-westward of Glas eilean Mòr.

South basin, in the south-western corner of Loch Maddy, southward and westward of Faihore and Ruigh Liath, is well sheltered, and affords anchorage, in depths of from 4 to 6 fathoms ($7^{\text{m}}3$ to $11^{\text{m}}0$), but the bottom near the middle of the basin is very soft, and care is therefore necessary in anchoring, especially if the wind is blowing hard from between south-east and south, when the squalls are very *10* heavy.

A beacon, 4 feet ($1^{\text{m}}2$) in height, painted red and fitted with a *white* reflector, stands on the northern side of the eastern extremity of Camaird (Cam-ard Mòr), about $1\frac{1}{2}$ cables south-south-eastward of South Basin pier (see below.) *15*

A vessel can enter South basin either northward or southward of Faihore and Ruigh Liath; there is a least depth of 21 feet ($6^{\text{m}}4$) in the northern channel, and depths of from 30 to 44 feet ($9^{\text{m}}1$ to $13^{\text{m}}4$) in the southern.

Charles harbour is the sheltered anchorage westward of Hamersay, *20* but, as the space is rather confined by rocks, it is necessary to moor; the bottom is very soft in the middle.

There is no channel northward or north-eastward of Charles harbour, even for small vessels, except at high water, and then it requires local knowledge. *25*

Sponish harbour, which is entered between Little Glas and the south-western side of Flodday, has depths of from 22 to 43 feet ($6^{\text{m}}7$ to $13^{\text{m}}1$), but though often used as an anchorage, the holding ground is very indifferent; in places it is rocky, but where there is mud it is stiff.

A good berth is with the north-western extremity of Flodday bearing *30* 023° , and Little Glas bearing 125° , in a depth of about 7 fathoms ($12^{\text{m}}8$), or a vessel can anchor about half a mile north-westward of this position, with Little Glas on the same bearing, in a depth of about $6\frac{1}{2}$ fathoms ($11^{\text{m}}9$).

Loch Portain is entered north-westward of Rubha nan Gall, a *35* promontory $1\frac{1}{2}$ miles north-westward of Weaver's point; it is a narrow inlet encumbered with rocky shoals, and shallow in its eastern part; there is no anchorage suitable for vessels over 9 feet ($2^{\text{m}}7$) draught.

Caolas Loch Portain, the channel on the eastern side of Flodday leading to Loch Portain, has a least depth of 2 fathoms ($3^{\text{m}}7$), and in *40* two places is only about 70 yards ($64^{\text{m}}0$) wide. This channel should not be attempted without local knowledge.

Mackay rock, which dries at mean low water springs, lies on the eastern side of the fairway, $5\frac{1}{2}$ cables north-westward of Weaver's point (*Lat.* $57^{\circ} 36' N.$, *Long.* $7^{\circ} 06' W.$). *45*

Piers.—Light.—There is a pier on the western side of South basin, about $3\frac{1}{2}$ cables westward of the western extremity of Ruigh Liath. It is constructed of masonry with piles at its outer end, and has been extended 300 feet ($91^{\text{m}}4$) to permit larger vessels to berth alongside.

A light is occasionally exhibited, at an elevation of 11 feet ($3^{\text{m}}4$), *50* from the head of the pier.

There is a private pier on the western side of Charles harbour, about $6\frac{1}{2}$ cables westward of the western extremity of Hamersay.

Directions.—A large vessel coming from southward should steer to

Chart 2825.

pass about $1\frac{1}{2}$ cables northward of Glas eilean Mòr, and thence for Faihore ; the channel southward of Glas eilean Mòr should only be used by small vessels.

- 5 A vessel coming from eastward or north-eastward should pass close southward of Maddy Beag, and then proceed as directed above.

Lochmaddy.—Lochinaddy (*Lat. 57° 36' N., Long. 7° 10' W.*), a village at the head of Loch Maddy, has a post and telegraph office. There is regular communication by sea with Oban, Mallaig, and Kyle 10 of Lochalsh.

Fresh provisions can be obtained at Lochmaddy, and water is laid on to the pier.

Small repairs can be effected.

Life-saving.—A life-saving apparatus is maintained at Loch 15 Maddy. See page 9.

Charts 2825, 1795.

Coast.—The coast between Weaver's point and Leac na Hoe, the eastern extremity of North Uist, about $2\frac{1}{2}$ miles north-north-eastward, is bold and steep-to.

- 20 Leac na Hoe is a bold headland rising, in Crogary na Hoe, to an elevation of 497 feet (151^m5), terminating seaward in black, irregular, steep-to cliffs.

Chart 3674.

SEA OF THE HEBRIDES AND LITTLE MINCH.—Sea of the 25 Hebrides, which is about 26 miles wide between Berneray (page 312) and Tiree (page 258), extends about 85 miles north-north-eastward to Little Minch.

Chart 2475.

Little Minch extends from a line joining Usinish promontory (page 30 359) and Neist point, the western extremity of Skye, 15 miles east-north-eastward, about 40 miles north-north-eastward and north-eastward, to a line drawn from Ruhha na h-Aiscig, the northern extremity of Skye, northward through Shiant islands to the coast of Lewis. It is the narrowest part of the Minch, which is the general 35 name given to the channels between the Outer and Inner Hebrides, and between Lewis and the mainland of Scotland ; the average width of Little Minch is about 12 miles.

A vessel passing through Little Minch should follow the tracks recommended, northbound or southbound, which are indicated by 40 pecked lines on the charts.

The proper route between Little Minch and the Sound of Mull (page 279) passes through the clear and deep channel between Óigh sgeir, a group of islets about 20 miles east-south-eastward of the south-eastern point of South Uist, and Umaolo, a rock 3 miles north-eastward of 45 Óigh sgeir (*Lat. 56° 28' N., Long. 6° 40' W.*).

The description of The Minch, northward of Little Minch, is continued on page 464.

Charts 2474, 2475.

Off-lying banks.—A bank, with a depth of 15 fathoms (27^m4) 50 over it, lies near the fairway through Little Minch about $11\frac{1}{2}$ miles west-south-westward of Vaternish point, the north-western extremity of Skye (page 504) ; for about 9 miles north-eastward of this bank the depths are irregular.

Chart 2551.

Three patches, with a depth of 15 fathoms (27^m.4) over them, about 3 cables apart, lie close north-westward of the recommended north-bound track about 2 $\frac{1}{4}$ miles northward of Vaternish point.

Charts 2474, 2475.

5

Local magnetic anomaly.—A local magnetic anomaly is reported to increase considerably the normal magnetic variation in the area between Skerryvore and Neist point, Isle of Skye.

Tidal streams.—*Sea of the Hebrides.*—At a position 3·6 miles 193° from Barra Head lighthouse, the stream is more or less rotatory clockwise ; it is weakest, spring rate 0·7 knot neap rate 0·3 knot, in a direction about 030°, —0500 Stornoway (+0310 Dover) ; strongest, spring rate 1·5 knots neap rate 0·6 knot, in a direction 105°, —0200 Stornoway (+0610 Dover) ; weakest, spring rate 0·7 knot neap rate 0·3 knot, in a direction about 200°, +0115 Stornoway (—0300 Dover), and 15 strongest, spring rate 1·4 knots neap rate 0·5 knot, in a direction 285°, +0415 Stornoway (H.W. Dover). At a position in 56° 14·0' N. 7° 54·1' W., the stream is rotatory with a spring rate varying between 0·4 and 0·6 knot, and runs in nearly the same directions as the stream at the position 3·6 miles 193° from Barra Head lighthouse. Between 20 the south-western end of the Hebrides and the north-western point of Ireland, the stream begins to run inwards towards the coast of Scotland about —0500 Stornoway (+0310 Dover), and begins to run outwards towards the Atlantic about +0115 Stornoway (—0300 Dover). The stream which runs into and out of the Sea of the Hebrides is a branch 25 of the latter stream.

In the southern approach to the Sea of the Hebrides, at a position 8·8 miles 278° from Skerryvore lighthouse (page 258), the stream is more or less rotatory clockwise ; it is weakest, spring rate 0·3 knot in a west-north-westerly direction, +0610 Stornoway (+0155 Dover) ; 30 strongest, spring rate 1·1 knots in a direction 015°, —0320 Stornoway (+0450 Dover) ; weakest, spring rate 0·3 knot in an east-south-easterly direction —0010 Stornoway (—0425 Dover), and strongest, spring rate 0·9 knot in a direction 200°, +0300 Stornoway (—0115 Dover).

In about the middle of the Sea of the Hebrides, at a position 10·1 miles 232° from Oigh Sgeir lighthouse (*Lat.* 56° 58' N., *Long.* 6° 41' W.), (see page 483), the stream is more or less rotatory clockwise ; it is weakest, spring rate 0·2 knot in a direction about 300°, —0400 Stornoway (+0410 Dover) ; strongest, spring rate 0·8 knot in a direction 005°, —0100 Stornoway (—0515 Dover) ; weakest, spring rate 0·1 knot in a direction about 125°, +0200 Stornoway (—0215 Dover), and strongest, spring rate 0·8 knot in a direction 175°, +0530 Stornoway (+0115 Dover). When weakest the direction of the stream changes very quickly, but between about 2 hours before and 2 hours after the times when it is strongest it changes through only about 40°, 45 from about 20° to the left to about 20° to the right of the direction of the strongest stream.

In the northern part of the Sea, or southern approach to Little Minch, at a position 8·9 miles 222° from Neist Point lighthouse, the north-going stream, spring rate one knot mean direction 355°, begins 50 —0425 Stornoway (+0345 Dover) ; the south-going stream, spring rate one knot, mean direction 175°, begins +0200 Stornoway (—0215 Dover). The stream is slightly rotatory anti-clockwise and changes very quickly when weak, but between about 2 hours before and 2 hours

Charts 2474, 2475.

after the times at which the north-going and south-going streams are strongest the whole change in direction is not more than about 20° .

In the Sea of the Hebrides the streams clear of the land are everywhere weak and more or less rotatory, but whereas in the western approach, the southern approach, and the middle part of the Sea the direction of rotation is clockwise, it is anti-clockwise in the northern part. The streams which run into and out from the Sea through the approaches begin considerably earlier, about 2 hours in the southern approach and one hour in the western approach, than the corresponding north-going and south-going streams in the Sea itself.

Close inshore off the salient points the streams are fairly strong, but elsewhere they are weak. These inshore streams begin about 2 to 3 hours earlier than the main stream.

15 The streams run about northward and southward between Skerryvore and Neist point; farther eastward the north-going stream bends in north-eastward and runs along the north-western coasts of Tiree and Coll, through the channels between The Small isles and between Eigg and the mainland, and then turns and runs out north-westward along 20 the south-western coast of Skye. In the whole area the north-going stream generally begins +0545 Stornoway (+0130 Dover) and the south-going stream begins -0015 Stornoway (-0430 Dover); the streams are weak nearly everywhere but run strongly near Skerryvore (*Lat. 56° 19' N., Long. 7° 07' W.*) and fairly strong off the salient points, 25 near The Small isles, and over and near detached rocks and shoals.

See also Tables of tidal streams for stations K09 and K06 in Tidal Streams European Waters, Part II, 1948.

Little Minch.—At a position 5·6 miles 284° from Vaternish Point lighthouse (page 505), nearly in mid-channel in the south-western part 30 of Little Minch, the stream is more or less rotatory clockwise; it is weakest, spring rate 0·2 knot in a direction about 250° , -0400 Stornoway (+0410 Dover); strongest spring rate one knot in a direction 025° , -0100 Stornoway (-0515 Dover); weakest, spring rate 0·2 knot, in a direction about 130° , +0215 Stornoway (-0200 35 Dover), and strongest, spring rate one knot in a direction 215° , +0545 Stornoway (+0130 Dover). At a position 4·4 miles 000° from Eilean Trodday light-beacon (page 514), in about mid-channel in the eastern entrance to Little Minch, the stream is more or less rotatory clockwise; it is weakest, spring rate 0·2 knot in a direction about 000° , -0310 40 Stornoway (+0500 Dover); strongest, spring rate 1·1 knots in a direction 080° , H.W. Stornoway (-0415 Dover); weakest, spring rate 0·2 knot in a direction about 180° , +0300 Stornoway (-0115 Dover), and strongest, spring rate 0·9 knot in a direction 255° , +0545 Stornoway (+0130 Dover). At both the above positions the direction 45 of the stream changes very quickly whilst it is weak, but between about 2 hours before and 2 hours after the times at which it is strongest it changes only about 40° , from about 20° to the left to about 20° to the right of its direction when strongest.

In Little Minch the times at which the streams begin become gradually later from south-westward to north-eastward; on the average the stream is about one hour later at a position 4·4 miles 006° from Eilean Trodday lighthouse (*Lat. 57° 43' N., Long. 6° 18' W.*), than at a position 8·9 miles 222° from Neist Point lighthouse (page 497), and about three-quarters of an hour later than at a position 5·6 miles 284° from

Charts 2474, 2475.

Vaternish Point lighthouse. There is no great difference between the times at which the streams begin in mid-channel and near the land. The spring rate in both directions increases from about one knot in both entrances to about 2·5 knots in the channels between Rubha na h-Aiseig and the islands and rocks north-westward of it.

In the channels between Rubha Hunish (page 513), Rubha na h-Aiseig (page 000), Fladdachuain (page 514), Sgeir nam Maol (page 515), and Eilean Trodday (page 514) the east-going stream begins —0355 Stornoway (+0415 Dover), and the west-going stream begins +0230 Stornoway (-0145 Dover); spring rate in each direction is about 2·5 knots. The streams are rather irregular round Fladdachuain and Sgeir nam Maol; westward of Fladdachuain the east-going stream begins as in the channels and divides and runs northward of the island, and southward of it past Gearran islet (page 514) and between and across the islets and rocks from Gearran islet to Fladdachuain; these streams reunite in the neighbourhood of Sgeir nam Maol and run very strongly across the rocks leaving an area of irregular streams and eddies between Sgeir nam Maol and Fladdachuain. Eastward of Sgeir nam Maol the west-going stream begins +0200 Stornoway 20 (-0215 Dover), or half an hour earlier than in the channels; the stream divides and runs northward of the sgeir and Fladdachuain, and southward of the sgeir and past Gearran islet and across and between the islets and rocks from Gearran islet to Fladdachuain, leaving an area of irregular streams between Sgeir nam Maol and Fladdachuain in which the west-going stream is said to begin +0530 Stornoway (+0115 Dover).

In the channels between Fladdachuain and Sgeir Graidach (page 515), and between Sgeir Graidach and Sgeir Inoe (page 427), the east-going stream begins —0340 Stornoway (+0430 Dover), and the west-going stream begins +0245 Stornoway (-0130 Dover); the spring 30 rate in each direction is about 2·5 knots. In the immediate vicinity of Sgeir Graidach the streams begin rather earlier, the east-going stream —0425 Stornoway (+0345 Dover), and the west-going stream +0200 Stornoway (-0215 Dover), though at neaps the east-going stream may continue to run till about +0415 Stornoway (H.W. 35 Dover); during the strength of the streams, especially of the east-going stream, there is violent turbulence with eddies and heavy overfalls extending east-north-eastward or west-south-westward from the rocks.

Currents.—The prevailing westerly or south-westerly wind causes, on the average, an east-north-east-going current across the northern 40 entrance to North Minch (page 463), between the Butt of Lewis (page 424) and Cape Wrath (*Lat. 58° 37' N., 5° 00' W.*), (see page 620); though no further information is available, there is probably also, on the average, a weak north-going current running through the Sea of the Hebrides, Little Minch and North Minch, and joining the 45 east-north-east-going current off the northern entrance to North Minch. Though these currents are usually of little importance to navigation, they probably run fairly strongly during periods of strong and long-continued south-westerly and westerly winds; during periods of strong and long-continued northerly and north-easterly winds the 50 currents may be reversed and run with appreciable strength in the opposite directions. The current is probably stronger in the narrow channels in Little Minch than elsewhere. See also chart No. 5057 in the Tidal Stream Atlas.

CHAPTER VII

THE HEBRIDES — SOUND OF HARRIS, AND WESTERN COASTS OF HARRIS AND LEWIS

Charts 2642, 2474

SOUND OF HARRIS.—The Sound of Harris, between North Uist (page 335) and Harris, $6\frac{1}{2}$ miles north-eastward, is the only navigable channel through the Outer Hebrides, with the exception of 5 the Sound of Barra (page 321). It is entered from south-eastward from Little Minch between Leac na Hoe (page 374) and Renish point (*Lat. 57° 44' N., Long. 6° 58' W.*), 6 miles north-north-eastward, and from north-westward from the Atlantic between Shillay (page 348) and Toe head, $4\frac{1}{2}$ miles east-north-eastward.

10 The bottom is chiefly fine white shelly sand, interspersed with rocks, which are invariably clothed with a reddish-brown seaweed of great length, and easily seen from aloft when the sun is high.

The most common rock in the sound and its vicinity is gneiss, but the rock on many of the islands is covered with shelly sand, which 15 produces a bright green grass. There are scarcely any trees, except at Rodel, 8 cables northward of Renish point.

A vessel might, in case of necessity, proceed through the sound, or to a safe anchorage in it, but it is not advisable to attempt this without local knowledge, on account of the strong tidal streams and 20 numerous shoals. Depths of from 14 to 16 feet (4^m3 to 4^m9) can be carried through the fairways of the principal channels, which unite to form Leverburgh and Stanton channels through the sound.

Aspect.—A vessel approaching the Sound of Harris from south-eastward, will be able to identify the entrance by the high land of 25 Strondeval and Roneval, in Harris, about $1\frac{1}{2}$ miles north-north-westward and $2\frac{1}{4}$ miles northward, respectively, of Renish point. Crogary range (page 335), Leac na Hoe, and Pabbay (page 347), at the north-western entrance to the sound, all have the appearance of islands from a distance of about 10 miles; on closer approach at the 30 south-eastern entrance, Dunaarin (page 381), and Renish point with three rounded hummocks, are easily identified.

The north-western approach from the Atlantic is marked by hills, islands, and headlands, which can be easily identified, and is free from dangers.

35 **Pilots.**—There are no licensed pilots for the sound, but it is possible that a fisherman acquainted with the locality may be found at Leverburgh, on the north-eastern side of the sound, about $2\frac{1}{2}$ miles north-north-westward of Renish point.

Tidal streams.—The streams appear to be very much affected by 40 diurnal inequality, and to be almost entirely diurnal at neaps.

Charts 2475, 3674, 2508, 2635.

Charts 2642, 2474.

The streams change very quickly off the south-eastern entrance to Sound of Harris, and begin about $2\frac{1}{2}$ hours later off the coast north-eastward of the sound than off the coast southward of it.

Among the islands of the Hermetray group, in the south-western part of the south-eastern entrance to the sound, the north-west-going stream begins -0540 Stornoway (+0230 Dover), the south-east-going stream begins +0030 Stornoway (-0345 Dover); the spring rate in each direction in the narrower channels, such as Gunwhale channel, is up to about 3 knots. 5

In the north-western entrance to the sound, in Sound of Spuir, the east-going stream begins +0515 Stornoway (+0100 Dover), the west-going stream begins -0055 Stornoway (-0510 Dover); in Sound of Pabbay the east-going stream, and in Sound of Shillay the south-east-going stream, begin +0545 Stornoway (+0130 Dover), and the west-15 going and north-west-going streams begin -0025 Stornoway (-0440 Dover). The spring rate in each direction in the Sound of Spuir is about 1.5 knots, in Sound of Pabbay about 0.8 knot, and in Sound of Shillay about one knot. During the north-west-going stream an area of very weak streams extends about half a mile eastward from 20 the eastern side of Pabbay (*Lat. 57° 46' N., Long. 7° 14' W.*).

In the Narrows of Berneray, at springs the south-east-going stream begins +0515 Stornoway (+0050 Dover), and the north-west-going streams begins -0125 Stornoway (-0550 Dover); rate in each direction from 2.5 to 3 knots. At neaps in summer the stream by day 25 runs south-eastward for 8 or 9 hours, and north-westward for 2 to 4 hours only; at neaps in winter the stream runs south-eastward by day for 2 to 4 hours only.

Between the islands of the Groay group, in the north-eastern part of the south-eastern entrance to the sound, at springs the south-east-30 going stream by day runs only between about -0025 and +0150 Stornoway (-0450 and -0235 Dover), rate about 1.5 knots, and then turns and runs north-westward; farther northward the duration of the south-east-going stream is greater.

In Caolas Skaari and the channels between Ensay and the south-western coast of Harris the streams are remarkable; it may be stated generally that, at springs, both in summer and in winter, the south-east-going stream runs during the greater part of the rising tide (rise from about +0545 till -0025 Stornoway, or from about +0120 till -0450 Dover), and the north-west-going stream runs during the 35 greater part of the falling tide; at neaps, however, in summer the south-east-going stream runs during the whole of the day and the north-west-going stream runs during the whole of the night, whereas at neaps in winter the north-west-going stream runs during the whole of the day and the south-east-going stream during the whole of the 40 night. Where the water is confined by rocks and islands, as in Sound of Stromay, the stream in both directions may attain a rate of about 3 knots at springs and not much less at neaps; the stream is also strong in Caolas Skaari, but elsewhere its rate does not exceed about 45 2 to 2.5 knots. 50

In the south-western approaches to the Sound in a position about 7 cables westward of Renish point, the tidal streams run in south-easterly and north-westerly directions and may attain a rate of about one knot at springs. In the north-western approaches to the Sound

Charts 2642, 2474.

in a position about 8 cables south-eastward of Mallory rock the tidal streams are similar to those in the south-eastern approaches. In both these positions the streams are semi-diurnal at springs and 5 mainly diurnal at neaps.

Chart 2474.

South-western shore.—Between Leac na Hoe (page 374) and Leac Bhan (page 345), $5\frac{1}{2}$ miles north-westward, the coast is much indented, with numerous off-lying rocks and shoals. The two principal 10 inlets are Loch Aulasary and Loch Mhic Phail.

Loch Aulasary is entered $2\frac{1}{2}$ miles north-westward of Leac na Hoe and is only accessible to boats. Loch Mhic Phail, on the north-western side of Stromay, an island on the north-western side of Loch Aulasary, is encumbered with rocks and shoals, but it can be used by small 15 vessels with local knowledge.

Beinn Mòr and Beinn Bhreac (page 335) are visible from all parts of the sound.

There are several anchorages off this side of the sound, and three channels lead along the south-western shore of the sound to Berneray.

20 **Islands and dangers.**—The Hermetray group, lying on the south-western side of the south-eastern part of Sound of Harris, comprises several islands and islets and many rocks. The south-eastern extremity of Hermetray, the southernmost island of the group, is situated about $8\frac{1}{2}$ cables north-eastward of Leac na Hoe.

25 Groatay, about 4 cables northward of Leac na Hoe and about $1\frac{1}{4}$ cables offshore, is 108 feet (32^m9) high, with steep coasts, and appears bold from south-eastward with a rocky pillar on its western side. Angus rock, about three-quarters of a cable northward of Groatay, dries 9 feet (2^m7) ; there is a narrow shallow channel between 30 it and Groatay, Mary rock, about $2\frac{1}{2}$ cables north-westward of Groatay, has a least depth of $1\frac{1}{2}$ fathoms (2^m3) over it.

Righe nam Ban, about $5\frac{1}{2}$ cables west-north-westward of Groatay and 3 cables offshore, are three islets about 29 feet (8^m8) high ; their southern and south-eastern coasts are steep-to, and the north-western 35 islet is covered with grass, the others with heather.

The centre of the eastern islet of Righe nam Ban in line with Beinn Mòr, bearing 282° , leads northward of Angus and Mary rocks (see view facing page 382).

Hermetray (*Lat. $57^\circ 39' N.$, Long. $7^\circ 03' W.$*) attains an elevation of 40 114 feet (34^m7) ; the eastern coast is moderately bold. Big reef, three-quarters of a cable south-eastward of the south-eastern extremity of Hermetray, is a steep-to, above-water rock. The south-western and western sides of Hermetray are foul for about one cable offshore. Fuam, about $1\frac{1}{2}$ cables westward of the western extremity of Hermetray, is an islet 57 feet (17^m4) high, and is fringed by a reef, which extends in places half a cable from it. Stanley rock, about one cable north-eastward of Fuam, has a depth of $1\frac{1}{2}$ fathoms (2^m3) over it. Dirt rock, about $2\frac{1}{4}$ cables north-north-eastward of Fuam and three-quarters of a cable from the eastern side of Vaccasay, an island 56 feet 50 (17^m1) high, $2\frac{1}{2}$ cables westward of Hermetray, dries 4 feet (1^m2). Staffin skerry, 12 feet (3^m7) high, lies one cable north-north-eastward of the northern extremity of Hermetray, and near the centre of a small reef ; there is a boat channel between Staffin skerry and Hermetray. Greamem, about 2 cables north-eastward of the north-eastern

Chart 2474.

extremity of Hermetray, is an islet about 46 feet (14^m0) high. State rock, about $2\frac{1}{2}$ cables northward of the northern extremity of Hermetray, is 4 feet (1^m2) high; Sight rock, about $2\frac{1}{2}$ cables north-north-eastward of State rock, is 3 feet (0^m9) high; foul ground extends $3\frac{1}{2}$ cables north-north-eastward from Sight rock. 5

The channel between Greanem south-eastward, and State and Sight rocks, north-westward, is deep and free from dangers.

Tahay, the south-eastern extremity of which is situated about 4 cables west-north-westward of the south-western extremity of Vaccasay, is 10 209 feet (63^m7) high, and is the highest island of the group; the channel between Vaccasay and Tahay is encumbered with rocks and is only suitable for boats.

Numerous islets and rocks extend north-westward from the islands and islets described above. 15

Gousman, about $2\frac{1}{2}$ miles northward of the northern extremity of Hermetray, is an islet 37 feet (11^m3) high, which is covered with grass; rocks extend $2\frac{1}{2}$ cables south-south-eastward from the south-eastern end of this islet, one is 5 feet (1^m5) high and the others dry. 20

Chart 2642.

Groay group, situated in about the centre of the south-eastern entrance to Sound of Harris, comprises a number of islands and islets, and many rocks. Groay (*Lat. $57^{\circ} 42' N.$, Long. $7^{\circ} 02' W.$*), the south-eastern extremity of which is situated about $2\frac{1}{2}$ miles south-westward of Renish point, is the largest of the group, and is 80 feet (24^m4) high. 25 The other main islands comprising the group are Scaravay, 71 feet (21^m6) high, about 4 cables south-south-eastward of Groay; Lingay, 87 feet (26^m5) high, situated about 2 cables eastward of Groay, and Gilsay, 82 feet (25^m0) high, situated about 7 cables north-eastward of Groay. 30

Two patches of rocks which dry, with a narrow deep-water channel between them, extend about 4 cables west-south-westward from Scaravay, and there is a shoal, with a depth of 14 feet (4^m3) over it, about 7 cables west-south-westward of Scaravay.

Between Scaravay and Lingay, there is foul ground with drying reefs and a very narrow channel between, and the small islet of Crago. Between Lingay and Groay there are also drying reefs, with a very narrow channel close to the eastern side of Groay. There is a deep channel between Lingay and Gilsay which leads to the anchorage described on page 383. About midway between the north-western end of Gilsay and the northern end of Groay is a long rocky shoal, near the southern end of which lie Rodel rocks, which dry 8 feet (2^m4) and near the northern end of this rocky shoal is the islet of Heisker, 8 feet (2^m4) high. 35

There is no navigable channel through the Groay group, but a channel 45 available for small vessels with local knowledge westward of Gousman leads to Berneray.

Dun-aarin, an islet, situated 3 cables north-eastward of Gilsay, is 87 feet (26^m5) high, and is conspicuous. (*See view facing page 382.*) Dun-aarin lies at the south-eastern end of a chain of islets and reefs 50 which extend north-westward for about $3\frac{1}{2}$ miles to Ensay, and form the western boundary of the navigable channel through Sound of Harris.

Charts 2642, 2474.

Cabbage group is a group of above-water and sunken rocks, extending

Charts 2642, 2474.

about $1\frac{1}{2}$ miles westward from Gousman (*Lat. $57^{\circ} 42' N.$, Long. $7^{\circ} 03' W.$*). Fowls rocks, lying about 2 cables northward of the northern end of the Cabbage group, dry 10 feet (3^m0).

- 5 Between the northern end of the Cabbage group and the south-eastern end of The Reef (page 346), $6\frac{1}{2}$ cables west-north-westward, are several rocks. Between Fowls rocks and the eastern side of Berneray, about 2 miles north-westward, and also between these rocks and the south-western side of Killegray, $1\frac{1}{2}$ miles north-north-
10 eastward, there are innuinerable rocks and shoals.

For Berneray, the largest island in Sound of Harris, see page 312.

Chart 2474.

Anchorages in Hermetray group.—Directions.—Between Groatay 15 and Hermetray, on the south-east, and Righ nam Ban and Vaccasay on the north-west, there are depths of from 4 to 12 fathoms (7^m3 to 21^m9), with anchorage for moderate sized vessels, but care should be taken to avoid Mary rock.

The best berth is about one cable south-south-eastward of the south-eastern end of Righ nam Ban, in depths of from 5 to 7 fathoms (9^m1 to 12^m8), mud.

Cheese bay, between Righ nam Ban and the shore westward, affords anchorage sheltered from all winds, with good holding ground, in depths of from 3 to 4 fathoms (5^m5 to 7^m3), but as there are several rocks in 25 the centre of this bay, it should be used only by small vessels with local knowledge.

The Basin of Vaccasay, between the western side of Hermetray and the eastern side of Vaccasay, is a well-sheltered harbour, with depths of from 4 to 14 fathoms (7^m3 to 25^m6), mud; the water is smooth in 30 all winds. The eastern coast of Vaccasay is steep-to.

The best anchorage is with Staffin skerry in line with the south-eastern extremity of Scaravay, bearing 039° , in depths of from 12 to 13 fathoms (21^m9 to 23^m8).

The southern entrance to the Basin of Vaccasay is between Fuam 35 and Vaccasay; this channel is about one cable wide and comparatively deep, and is free from dangers. The channel between Fuam and Hermetray is foul. Staffin skerry in line with the south-eastern extremity of Scaravay, bearing 039° , leads in between Fuam and Vaccasay, passing north-westward of Stanley rock and south-eastward 40 of Dirt rock.

The northern entrance to this basin is northward and westward of Staffin skerry; this channel is narrow, with a shoal, with a depth of 3 fathoms (5^m5) over it, in the fairway, about three-quarters of a cable west-south-westward of Staffin skerry.

45 A vessel making any of the anchorages described above from southward will, on approaching Hermetray (*Lat. $57^{\circ} 39' N.$, Long. $7^{\circ} 03' W.$*), see the dark-coloured cliffy base of Leac na Hoe, and to north-westward Beinn Mòr and Beinn Blireac (page 335). Hoe Beag, a round-topped hill, 195 feet (59^m4) high, $1\frac{1}{2}$ miles west-north-westward of Leac na 50 Hoe, may also be identified.

A vessel should steer for Groatay bearing 294° , and, passing north-eastward of it at a distance of at least one cable from the south-western side of Hermetray, steer for the centre of the eastern islet of Righ nam Ban in line with Beinn Mòr, bearing 282° (see view facing this page).

To face page 382.



Middle of eastern islet of Rigit nam Ban in line with Beinn Mor,
bearing 282°.
(Original dated 1858.)



Lhmaarm, bearing
295°, 1½ miles.
(Original dated 1858.)



Church on Berneray in line with eastern tail of western hill on Pabbay, bearing 317°.
(Original dated 1858.)



Berneray schoolhouse in line with south-western tail of Beinn a' Charnain, bearing 328°.
(Original dated 1858.)



Cook Rock
Isles.

Easey North
Isle.

Dubh
Sgeir
Islands.

Saum in fire
with Corbas
bearing 210°
108 miles.

Red Rock
Islands

Cochernal
Kylo Isles.

South-eastern approach to Sound of Harris.



Dubh Sgeir beacon, bearing 237°.



Jans tower, bearing 010°.

(Original dated 1855.)

Chart 2474.

until the south-eastern extremity of Vaccasay is in line with Staffin skerry, bearing 042° , when she will be clear of Mary rock and can then anchor south-eastward of Righ nam Ban.

Chart 2642.

Anchorage in Groay group.—**Directions.**—Good anchorage can be obtained about $3\frac{1}{2}$ cables northward of the south-eastern extremity of Groay and about $1\frac{1}{4}$ cables from the north-eastern side of that island, in a depth of about 6 fathoms (11^m0), mud.

The anchorage is approached from south-eastward between Lingay ¹⁰ and Gilsay; the highest part of Lingay is at its eastern end and is flat, whilst Gilsay shows a peak at its centre and terminates at its south-eastern end in a low bare rocky point. A vessel should steer in mid-channel between Lingay and Gilsay, until the summit of Groay bears about 260° and is open northward of the northern extremity of Lingay; she can then steer for the anchorage, giving the northern extremity of Lingay a berth of about one cable to avoid the foul ground northward of it, and taking care to avoid the shoal water extending $1\frac{1}{2}$ cables south-eastward from Rodel rocks; the fairway here is about one cable wide.

Anchorage in Cabbage group.—Good anchorage can be obtained on the north-eastern side of the Cabbage group, with the summit of Gousman in line with the south-western hill on Scaravay, bearing 113° , and the highest part of Beinn Chaipaval, situated about 7 miles north-westward of Renish point, bearing about 357° and showing over ²⁵ the north-western end of Killegray, in a depth of 4 fathoms (7^m3).

Chart 2474.

Anchorage off Berneray.—For the anchorage in Bays loch, on the south-eastern side of Berneray, and the directions for proceeding to it, see pages 347 and 349, respectively.

30

Channels through south-western part of sound.—**Directions.**

—*Gunwale channel.*—Gunwale channel is very useful for boats with local knowledge when blowing hard from eastward, as it is smooth at low water. This channel leads from Cheese bay (page 382), through a straight narrow channel, which passes through Rangas, a reef lying ³⁵ across the entrance to Loch Mhic Phail, and thence westward of Torogay. The track leading from northward of Torogay to Bays loch, on the south-eastern side of Berneray, is described on page 349. The least depth in Gunwale channel is 3 feet (0^m9).

—*Grey Horse channel.*—Grey Horse boat channel is entered between ⁴⁰ the eastern side of Hermetray (*Lat. $57^\circ 39' N.$, Long. $7^\circ 03' W.$*) and the western side of Greanem, and leads through a labyrinth of islets and rocks, a stone cairn on one of which, situated one mile north-westward of the north-western end of Hermetray, is called The Grey Horse. The track leading to Bays loch, on the south-eastern side of ⁴⁵ Berneray, should only be used by those possessing local knowledge.

From close north-westward of The Grey Horse a vessel should bring the church on Berneray in line with the eastern fall of the western hill on Pabbay, $4\frac{1}{2}$ miles north-westward, bearing 317° (see view facing page 382), which leads north-westward through the fairway of the ⁵⁰ channel, in a depth of not less than 6 feet (1^m8). When Ard a' Mhorain (page 344) bears 265° and is well open northward of Leac Bhan (page 345), a vessel should steer about 277° until the schoolhouse on Berneray is in line with the south-western fall of Beinn a' Charnain, bearing 328° .

Chart 2474.

(see view facing page 382), which leads into Bays loch, passing south-westward of Drowning rock. She can then anchor in depths of from 2 to 3 fathoms (3^m7 to 5^m5), until there is sufficient depth to reach the head of Bays loch ; Drowning rock, which lies close north-eastward of the track, about 4 cables east-south-eastward of the south-western entrance point of Bays loch, dries about 11 feet (3^m4).

Seolait Mhic Neacail.—Seolait Mhic Neacail, which is available for boats with local knowledge, is entered between the reef extending about 2 cables north-north-westward from the north-western end of Opsay, and the south-eastern end of Narstay. Opsay is an islet, 33 feet (10^m1) high, situated $5\frac{1}{2}$ cables north-north-westward of the north-western extremity of Hermetray, and Narstay, an islet 27 feet (8^m2) high, lies about $3\frac{1}{2}$ cables north-north-westward of Opsay.

15 The track through this boat channel crosses Grey Horse channel about $2\frac{1}{2}$ cables north-westward of The Grey Horse, and continues westward, passing southward of Splears, a reef $8\frac{1}{2}$ cables west-north-westward of The Grey Horse. The track then leads westward amongst rocks and shoals until it joins Gunwale channel south-westward of

20 Torogay.

Charts 2642, 2474.

Gousman channel.—Gousman channel, which is entered south-westward of the Groay group, is perhaps the best channel leading through the south-western part of the Sound of Harris to Berneray for small vessels with local knowledge, as there is good anchorage on the north-eastern side of the Cabbage group.

A vessel entering Gousman channel should steer for the western extremity of Gousman, bearing 344° ; then, passing about one cable westward of it she should steer with the summit of Gousman in line 30 with the south-western hill on Scaravay, bearing 113° , astern, to the anchorage on the north-eastern side of the Cabbage group.

Between the northern end of the Cabbage group and the south-eastern end of The Reef is the most dangerous part of the channel, through which a vessel should be conned by eye from the masthead.

35 Between Fowls rocks and the eastern end of Berneray, as well as between these rocks and Killegray, the ground is very foul, but there is a channel, suitable for small vessels with local knowledge, between Berneray and Killegray, with a least depth of 16 feet (4^m9).

Chart 2642.

40 **North-eastern shore.—Submarine cable.—Beacons.**—Between Renish point (*Lat. $57^\circ 44' N.$, Long. $6^\circ 58' W.$*), the southern extremity of Harris, and the entrance to Carminish bay, about 2 miles north-westward, the shore is rocky.

Renish point appears from a distance as three rounded hummocks, 45 the highest having an elevation of 157 feet (47^m9). Renish islet, 46 feet (14^m0) high, lies about $1\frac{1}{2}$ cables south-south-westward of the point. About $1\frac{1}{2}$ miles north-north-westward of Renish point is Strondeval, a hill, 681 feet (207^m6) high, with a peak sloping eastward (see view facing page 388). The north-western shoulder of Strondeval 50 falls away to Beinn Obbe, 332 feet (101^m2) high. Roneval, about $9\frac{1}{2}$ cables north-north-eastward of Strondeval, attains an elevation of 1,500 feet (457^m2), and is the highest hill adjacent to Sound of Harris. Strond village stands at the foot of Strondeval range, about $4\frac{1}{2}$ cables south-eastward of the head of Carminish bay.

Charts 2475, 3674, 2508, 2635.

Chart 2642.

About midway between Renish point and Carminish bay is Port Eisgein, a small inlet, where there is a red and white beacon with a diamond topmast, which marks the landing of a submarine cable.

Carminish bay dries over its greater part, but affords some shelter 5 from north-westward for boats which can take the ground.

Chart 2642, with plan of the Narrows.

One mile north-westward of the north-western entrance point of Carminish bay is Rubh' an Losaid, on which there is a beacon consisting of a white tower, 54 feet (16^m5) high, named Heb, on the south-eastern 10 side of which is the entrance to The Obbe. Two white beacons stand on the shore about 2 $\frac{1}{2}$ cables north-westward of Rubh' an Losaid. There is a conspicuous water tower 4 $\frac{1}{2}$ cables north-north-eastward of Heb beacon.

Smearinish, a point about 7 cables north-westward of Rubh' an 15 Losaid, is low, rocky, and moderately bold. The coast between these points is fairly steep-to, but there is a patch, with a depth of 13 feet (4^m0) over it, about one cable south-eastward of Smearinish.

Rubha Charnain (*Lat. 57° 47' N., Long. 7° 03' W.*), about 3 $\frac{1}{2}$ cables north-westward of Smearinish, is a flat point, 20 feet (6^m1) high, falling 20 slightly inland; Kyles lodge, a large white building with a slate roof, stands on the southern side of this point, over which the upper part is visible from north-westward. Bideinan, a bare black ridge, 357 feet (108^m8) high, which has a notched appearance from south-eastward, lies 6 $\frac{1}{2}$ cables north-westward of Rubha Charnain. 25

Chart 2642.

Greaval, 6 $\frac{1}{2}$ cables east-north-eastward of Bideinan, is a hill 916 feet (279^m2) high. Maodal, 7 $\frac{1}{2}$ cables north-north-westward of Greaval, is a hill 814 feet (248^m1) high. Between Bideinan and Rubha' an Teampuill, on which there is a ruined chapel, 1 $\frac{1}{2}$ miles north-westward, 30 the coast is indented by South Sand bay, Traigh na Cleavag, and North Sand bay. Between South Sand bay and Traigh na Cleavag the rising ground is covered with grass; the coast is faced by a dark-coloured cliff. See view facing page 389.

Taobh Deas is a peninsula forming the north-eastern side of the 35 north-western entrance to the Sound of Harris; it is connected with the mainland by a narrow isthmus at the head of South Sand bay. This peninsula attains an elevation of 1,195 feet (364^m2) in Beinn Chaipaval, which has two distinct, rounded summits of nearly equal elevation, falling steeply westward and terminating northward in Toe head, a 40 bold, bluff, clifffy point, 212 feet (64^m6) high, which is steep-to.

The cliffs on the western side of Taobh Deas, northward of Bretasker, which is situated about 1 $\frac{1}{2}$ miles north-westward of Rubha' an Teampuill, are very high; between Bretasker and Toe head is a rocky bay, named Luiri. 45

Channels.—Islands and dangers.—The main channel through Sound of Harris extends from Renish point to Jane tower, 3 miles north-westward, where it divides into two channels, the eastern being Leverburgh channel and the western Stanton channel; these channels rejoin southward of Red Rock beacon (page 389), 1 $\frac{1}{2}$ miles farther 50 north-westward. Thence, the channel is known as Outer Stromay channel. The tracks through these channels are indicated by firm lines on the chart.

From westward of Rubha Charnain, vessels with local knowledge may

Chart 2642.

leave Leverburgh channel and proceed to sea through Sound of Stromay.

Groay group, on the south-western side of the entrance to the main channel, is described on page 381.

Killegray, an island, the south-eastern extremity of which is situated about $1\frac{1}{4}$ miles north-north-westward of the northern extremity of Groay, is 141 feet (43^m0) high, and grassy, and has a conspicuous eairn on its summit ; there is a house on its north-eastern side and a small stone jetty.

Between Searavay (*Lat. $57^{\circ} 42' N.$, Long. $7^{\circ} 01' W.$*), at the southern end of Groay group, and Killegray, the bottom consists of sand with numerous rocky outcrops, some of which dry, and a few small islets. Northward of Killegray, reefs and shoals extend about 2 miles north-westward. A narrow tortuous channel, the north-western end of which is named Caolas Skaari, extends from Groay group to the western side of Ensay, but it is only navigable by small craft with local knowledge ; the tidal streams in it are very strong (see page 392). Sgeir Vuran and Sgeir Dhubb lie about 3 and 7 cables, respectively, 20 north-westward of Killegray, from which they are separated by a shallow channel, are a group of rocks, some of which are a few feet high.

Ensay, an island, the southern extremity of which is situated about $2\frac{3}{4}$ cables north-eastward of the north-eastern extremity of Killegray, 25 to which it is very similar in appearance, is 156 feet (47^m6) high ; there is a small stone jetty in a cove near the south-eastern end of the island, and a house on its eastern side. Toan, the north-western extremity of this island, and Rubha nan Sgarbh, its northern extremity, are steep dark-coloured rocky points, and a sandy beach between them 30 shows distinctly ; a rocky spit extends about 2 cables north-north-westward from Toan, and rocks extend about 2 cables eastward from Rubha nan Sgarbh ; a spit, with depths of less than 3 fathoms (5^m5) over it, extends about $6\frac{1}{2}$ cables westward from Toan.

Renish islet (page 384) is steep-to on its seaward sides, but between 35 it and Renish point are several rocks with a boat channel close inshore. A shoal, with a depth of 31 feet (9^m4) over it, lies about $6\frac{1}{2}$ cables west-south-westward of Renish point. Frog rock, with a depth of 22 feet (6^m7) over it, and a shoal, with a depth of 27 feet (8^m2) over it, lie about $3\frac{1}{2}$ cables westward and $3\frac{1}{2}$ cables west-north-westward, 40 respectively, of Renish point.

Fanny rock, lying about one mile north-westward of Renish point and 2 cables offshore, has a depth of 16 feet (4^m9) over it.

Mile sgeir, a bare rock, 6 feet (1^m8) high, lies about $1\frac{1}{4}$ miles north-north-westward of Dun-aarain (page 381). Dent shoal, close northward 45 of Mile sgeir, has a least depth of 5 feet (1^m5) over it.

Suem summit (page 387) in line with Coppay summit bearing 316° , leads north-eastward of Dent shoal. See view facing page 383.

Leade rocks, situated $1\frac{1}{4}$ miles north-westward of Renish point (*Lat. $57^{\circ} 44' N.$, Long. $6^{\circ} 58' W.$*) and about 3 cables offshore, are 50 a group of rocks, with a least depth of 5 feet (1^m5) over it.

Chart 2642, plan of the Narrows.

Lang sgeir, 2 feet (0^m6) high, lies on the south-western side of the main channel, about one mile north-westward of Dent shoal. Cook rock, which dries one foot (0^m3), lies on the south-western side of the

Chart 2642, with plan of The Narrows.

main channel, about $3\frac{1}{2}$ cables north-eastward of Lang sgeir, and is marked on its eastern side by a black conical buoy. A sandy spit, with depths of from 24 to 32 feet (7^m3 to 9^m8) over it, extends about 4 cables east-south-eastward from Cook rock. Stumbles rock, with a depth of 13 feet (4^m0) over it, lies about $1\frac{1}{2}$ cables eastward of Cook rock, and a shoal, with a depth of 22 feet (6^m7) over it, lies about $2\frac{1}{2}$ cables north-eastward of Cook rock.

Between Lang sgeir and the south-eastern end of Ensay there are numerous rocks and reefs which dry. 10

Dubh sgeir, on which stands an octagonal stone tower, 35 feet (10^m7) in height, lies about 5 cables north-westward of Cook rock. A spit, with depths of from 15 to 17 feet (4^m6 to 5^m2) over it, extends about $2\frac{1}{2}$ cables south-eastward from Dubh sgeir. Sunem, about $1\frac{1}{2}$ cables north-north-westward of Dubh sgeir, is an islet, with a pointed summit, 15 18 feet (5^m5) high, fringed by a reef which extends about half a cable from its northern and eastern sides. See view facing page 383.

Carminish islands, situated off the north-western side of the entrance to Carminish bay, extend about one mile north-westward parallel with the coast. Many of the islands are very low, small and similar 20 in appearance, the highest being Ceardaich, having an elevation of 28 feet (8^m5), surmounted by a cairn, situated about 7 cables southward of Rubh' an Losaid (page 385); others include Big rock, 4 feet (1^m2) high, Oar rock, which dries 7 feet (2^m1), and Bo Tagerlich, which dries 5 feet (1^m5). Sunem, 20 feet (6^m1) high, lies about 4 cables south-25 westward of Rubh' an Losaid; there are many other rocks and shoals lying off the south-western side of Carminish islands, the outer danger, with a depth of 15 feet (4^m6) over it, lying on the north-eastern side of the main channel, about 2 cables west-south-westward of Sunem.

Between Sunem (*Lat. $57^{\circ} 46' N.$, Long. $7^{\circ} 02' W.$*) and Eilean na 30 Cloicheig, 20 feet (6^m1) high, about one cable north-westward, there is a boat channel leading to Leverburgh. See page 390.

About half a cable north-westward of Eilean na Cloicheig is Eilean a Charnain, on which is Jane tower (see view facing page 383), 24 feet (7^m3) high and conspicuous. A reef extends about one cable north-35 eastward and about half a cable northward from Jane tower.

Leverburgh channel.—Islands and dangers.—Beacons.—About $1\frac{1}{2}$ cables westward of Rubh' an Losaid is a rock, 8 feet (2^m4) high, close northward of which there is a pole beacon, with a reef, which dries, extending about half a cable southward from the rock; two 40 reefs, which dry, lie about $1\frac{1}{2}$ cables westward and west-south-westward, respectively, of the head of Leverburgh pier, situated about three-quarters of a cable south-eastward of Rubh' an Losaid. There is an iron framework beacon on the head of the pier. Vessels with a draught of less than 14 feet (4^m3) can lie alongside the head of the pier. 45

Leverburgh channel is entered between Jane tower and Sgeir Mhic Coma, the south-easternmost islets of Saghay group, about $2\frac{1}{2}$ cables north-westward. About $1\frac{1}{2}$ cables southward of Sgeir Mhic Coma is Bo Stainan, a rock, which dries 4 feet (1^m2); a patch, with a depth of 7 feet (2^m1) over it, lies close westward of the track about 2 cables 50 southward of Sgeir Mhic Coma. Shoals, with depths of 18 and 7 feet (5^m5 and 2^m1) over them, lie close westward and eastward of the track about one cable south-south-eastward and $1\frac{1}{2}$ cables south-eastward, respectively, of Sgeir Mhic Coma.

Chart 2642, plan of The Narrows.

Shoals, with depths of 15 and 18 feet (4^m6 and 5^m5) over them, lie about $1\frac{1}{2}$ and 2 cables, respectively, north-north-eastward of Sgeir Mhic Coma.

- 5 Saghay group consists of a number of islets nearly connected with each other at low water, lying from $2\frac{1}{2}$ to $4\frac{1}{2}$ cables offshore; a bank, with depths of less than 3 fathoms (5^m5) over it, rock or sand, extends eastward from them, narrowing the channel here to about one cable.

Saghay Mòr (*Lat. $57^{\circ} 46' N.$, Long. $7^{\circ} 03' W.$*), the largest and highest of the group, about 3 cables west-north-westward of Sgeir Mhic Coma, is 42 feet (12^m8) high. Iolla sgeir, $1\frac{1}{2}$ cables north-north-eastward of the northern end of Saghay Mòr, dries 10 feet (3^m0), and rocks, with depths of from 2 to 10 feet (0^m6 to 3^m0) over them, extend half a cable farther north-north-eastward. Shoals, with depths of 18 and 15 11 feet (5^m5 and 3^m4) over them, lie on the eastern side of the channel about $3\frac{1}{2}$ cables east-north-eastward and $2\frac{1}{2}$ cables north-eastward, respectively, of the northern extremity of Saghay Mòr; these shoals are on the edge of the shore bank extending from the mainland of Harris.

- 20 Shoals, with depths of 7 and 15 feet (2^m1 and 4^m6) over them, lie on the western side of the channel about $2\frac{1}{2}$ cables east-north-eastward and $2\frac{1}{2}$ cables north-north-eastward, respectively, of the northern extremity of Saghay Mòr.

Saghay Beag, half a cable westward of Saghay Mòr, is 31 feet (9^m4) high. A shoal, with a depth of 18 feet (5^m5) over it, lies about half a cable south-westward of the track through Leverburgh channel, about $2\frac{1}{2}$ cables northward of the northern extremity of Saghay Beag.

Bo Leachan, about $1\frac{1}{2}$ cables south-eastward of the south-eastern extremity of Saghay Mòr, is awash.

- 30 Horse rock, about one cable southward of Saghay Beag, dries 10 feet (3^m0).

Bo Quidam, about $1\frac{1}{2}$ cables west-north-westward of the western extremity of Saghay Beag, is a rocky shoal nearly awash; the western end of the ruined temple on Rubha' an Teampuill (page 385), bearing 330° , in line with Red Rock beacon, leads south-westward of this shoal. About three-quarters of a cable south-westward of Bo Quidam there is a patch, with a depth of 17 feet (5^m2) over it, very close to the leading line; a depth of 16 feet (4^m9) must be regarded as the controlling depth for this channel.

- 40 Cramer rock, about 2 cables south-westward of Rubha Charnain (*Lat. $57^{\circ} 47' N.$, Long. $7^{\circ} 03' W.$*), has a depth of 3 feet (0^m9) over it; Sgeir Volinish, lying about 2 cables west-south-westward of the same point, dries 5 feet (1^m5). A red iron framework beacon surmounted by a barrel-shaped cage, 30 feet (9^m1) high, stands on the eastern side of Sgeir Volinish.

A bank, with a depth of 16 feet (4^m9) over it, extends about three-quarters of a cable south-south-eastward from Sgeir Volinish, and a patch, with a depth of 17 feet (5^m2) over it, lies about one cable south-south-westward of the same rock.

- 50 South-eastward of Rubha Charnain, for about $2\frac{1}{2}$ cables, a bank, with depths of less than 3 fathoms (5^m5) over it, extends from the north-eastern shore of the channel about one cable offshore, and for about $1\frac{1}{2}$ cables north-westward of Rubha Charnain (*Lat. $57^{\circ} 47' N.$, Long. $7^{\circ} 03' W.$*).

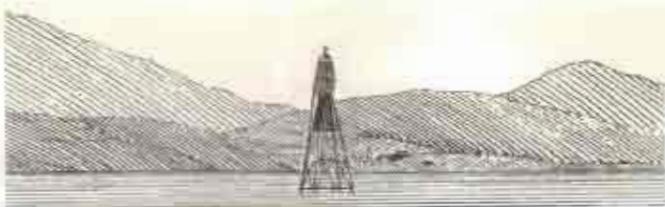
To face page 188.



Strondavat
Strondavat
Strondavat in line with Strondavat, bearing 125
(Original date 1855)



To head, bearing 340° and just open westward of Bretasker.
(Original date 1855)



Volinish beacon in line with the front leading beacon, situated about 1½ cables north-westward of Heb beacon, bearing 116°.
(Original dated 1935.)



Rubh' an Teampull
bearing 110°, one mile.
(Original dated 1935.)



Coppay island, bearing 124°.
(Original dated 1935.)

Chart 2642, plan of The Narrows.

The channel between Sgeir Volinish and Rubha Charnain is about three-quarters of a cable wide between the 3-fathom ($5^{\text{m}}5$) lines ; a depth of 14 feet ($4^{\text{m}}3$) is considered to be the controlling depth for the channel.

Stanton channel.—Dangers.—For description of Ensay and Caolas Skaari, on its south-western side, see page 386.

A shoal, with a depth of 14 feet ($4^{\text{m}}3$) over it, lies about $3\frac{1}{2}$ cables west-north-westward of the northern end of Suem.

The Grounds, about 7 cables west-north-westward of Suem and 10 about $3\frac{1}{2}$ cables from the eastern side of Ensay, are two detached rocks, each of which dries 2 feet ($0^{\text{m}}6$). A rock, which occasionally dries, lies about $8\frac{1}{2}$ cables west-north-westward of Suem and about $2\frac{1}{2}$ cables from the eastern side of Ensay. A shoal, with a depth of 8 feet ($2^{\text{m}}4$) over it, lies about $1\frac{1}{4}$ cables north-north-eastward of The Grounds. 15

Half Sound rocks, about $3\frac{1}{2}$ cables east-north-eastward of Rubha nan Sgarbh, have two detached heads, the northern of which dries 5 feet ($1^{\text{m}}5$). Red Rock beacon (see below), in line with the western end of the ruined chapel on Rubha an Teampuill (page 385), bearing 330° , leads about one cable north-eastward of these rocks. A shoal, with a least depth of one foot ($0^{\text{m}}3$) over it, lies about 2 cables southward of Half Sound rocks. Sgeir Innes, about $2\frac{1}{2}$ cables north-north-eastward of Rubha nan Sgarbh (*Lat. $57^{\circ} 47' N.$, Long. $7^{\circ} 05' W.$*), the northern extremity of Ensay, dries 6 feet ($1^{\text{m}}8$). A shoal, which dries, and a patch, with a depth of 15 feet ($4^{\text{m}}6$) over it, lie about one cable south-eastward and one cable north-north-eastward, respectively, of Sgeir Innes.

Outer Stromay channel.—Islands and Dangers.—Beacon.—Stromay, an island situated about $6\frac{1}{2}$ cables north-westward of Rubha Charnain (page 385), is composed of pale-red rock, with a little herbage 30 and a cairn on its summit, and attains an elevation of 52 feet ($15^{\text{m}}8$). See view facing page 388.

A sandy spit, with a least depth of 9 feet ($2^{\text{m}}7$) over it, extends about $2\frac{1}{2}$ cables south-south-eastward from the south-eastern side of Stromay. Red rock, about $1\frac{1}{2}$ cables west-south-westward of the southern end of 35 Stromay, with depths of from 4 to 9 fathoms ($7^{\text{m}}3$ to $16^{\text{m}}5$) between them, is bare, brownish in colour, and 3 feet ($0^{\text{m}}9$) high. A shoal, with a depth of 19 feet ($5^{\text{m}}8$) over it, and a rocky patch, with a depth of 15 feet ($4^{\text{m}}6$) over it, lie about 2 cables westward and $1\frac{1}{2}$ cables north-westward, respectively, of Red rock. 40

A black, pyramidal, framework beacon surmounted by a framework cylinder, 32 feet ($9^{\text{m}}8$) high, stands on the southern extremity of Red rock.

Rocks, which dry, extend about three-quarters of a cable north-north-westward from the northern extremity of Stromay, and a shoal, with a depth of 5 feet ($1^{\text{m}}5$) over it, lies about $1\frac{1}{2}$ cables northward of the same island. Sound of Stromay between Stromay and the coast north-eastward, has a navigable channel about half a cable wide, with a least depth of 4 fathoms ($7^{\text{m}}3$) in the fairway.

Colla sgeir, about 8 cables north-north-westward of Rubha nan 50 Sgarbh (*Lat. $57^{\circ} 47' N.$, Long. $7^{\circ} 05' W.$*), is a small pointed rock, which dries 7 feet. A bank, with depths of from one to 21 feet ($0^{\text{m}}3$ to $6^{\text{m}}4$) over it, extends about 5 cables south-eastward from Colla sgeir. Shoals, with depths of 17 and 15 feet ($5^{\text{m}}2$ and $4^{\text{m}}6$) over them, lie about $2\frac{1}{2}$

Chart 2642, plan of The Narrows.

cables northward and 3 cables north-eastward, respectively, of Colla sgeir.

Two patches, with a depth of 3 fathoms (5^m5) over them, lie on the 5 leading line about $1\frac{1}{2}$ cables north-north-eastward and $3\frac{1}{2}$ cables north-westward of Colla sgeir, and Corder rock, with a depth of 9 feet (2^m7) over it, lies about 2 cables west-north-westward of Colla sgeir. Toe head, bearing 349° , and just open westward of Bretasker, leads westward of Corder rock. Sandy rock, with a depth of 12 feet (3^m7) over 10 it, lies about 11 cables west-south-westward of Colla sgeir.

Girls rock, about $2\frac{1}{2}$ cables north-westward of Stromay, is small, flat and dries 4 feet (1^m2) ; Irishman rock, lying about $5\frac{1}{2}$ cables west-north-westward of Stromay, is awash.

Chart 2642.

15 Bomasanhui, about one mile north-westward of Stromay, is awash ; Inner Temple rocks, about $1\frac{1}{2}$ miles north-westward of Stromay, have a least depth of 5 feet (1^m5) over them. Outer Temple rocks are a group of rocks, with three detached heads, lying about $1\frac{1}{2}$ miles north-westward of Stromay ; these heads have depths of from 7 to 18 feet 20 (2^m1 to 5^m5) over them.

Stromay in line with Strondeval, bearing 125° , leads south-westward of Bomasanhui, Inner Temple, and Outer Temple rocks. Toe head, bearing 349° and just open westward of Bretasker, leads about $1\frac{1}{2}$ cables westward of the north-westernmost head of Outer Temple rocks. See 25 views facing page 388.

Mallory rock, with a depth of 17 feet (5^m2) over it, lies about 11 cables west-south-westward of Rubha an Teampuill.

Bretasker, lying close offshore about $6\frac{1}{2}$ cables south-south-eastward of Toe head (*Lat. $57^\circ 50' N.$, Long. $7^\circ 08' W.$*), is a rock, 10 feet (3^m0) 30 high, and is connected with the coast by a reef which dries.

Coppay, about one mile west-south-westward of Toe head, is 109 feet (33^m2) high, and its green grassy top contrasts with the black tufaceous rocks of its lower parts ; the island is bold on its northern side, but a reef, which dries, extends about three-quarters of a cable 35 south-eastward from its southern end, and rocks, with depths of less than 6 feet (1^m8) over them, lie about 2 cables south-eastward. Coppay bank, with depths of from 4 to 9 fathoms (7^m3 to 16^m5), rock, over it, extends about 8 cables east-south-eastward from the south-eastern extremity of Coppay ; on this bank a heavy swell has been seen to 40 break. A patch, with a depth of 17 feet (5^m2) over it, lies on this bank about 3 cables south-eastward of the south-eastern extremity of Coppay. Kelpy rock, with a depth of 21 feet (6^m4) over it, lies about $3\frac{1}{2}$ cables northward of the northern extremity of the island. See view facing page 389.

45 Chart 2642, plan of The Narrows.

Anchorages and inlets in Leverburgh channel.—Directions.—For Port Eisgein, about one mile north-westward of Renish point, see page 385. The anchorage off Leverburgh, about $2\frac{1}{2}$ cables south-eastward of Rubh' an Losaid, is sheltered by the Carrinish and Saghay 50 groups, has a depth of 3 fathoms (5^m5) and is very good holding ground, but it is only about one cable in width, and is difficult of access, particularly near high water ; local knowledge is required. Vessels call regularly. Only a few small vessels can ride here at one time, and in a vessel of moderate length it is necessary to moor.

Chart 2642, plan of The Narrows.

A convenient entrance to the anchorage off Leverburgh, for a small vessel with local knowledge approaching from southward, is between Eilean na Cloicheig, about three-quarters of a cable east-south-eastward of Jane tower and Sunem, one cable farther south-eastward, and thence northward in mid-channel. This anchorage is safe in any weather, but with strong westerly winds and high tides, when the rocks are covered a slight swell sets in. 5

It must be borne in mind that the south-east-going stream, through the channels amongst the islands, is strong at springs. 10

The Obbe is a sea loch, which is entered from the north-eastern corner of the harbour described above. The entrance is very narrow, and about low water and after high tide the stream runs through at a great rate, forming an overfall which is dangerous, if not impassable, for boats; the best time for entering is when there is about 5 feet 15 (1^m5) rise, and also one hour before and after high water. There is a pier on the southern side of the entrance. See page 385.

Leverburgh village, situated at the eastern end of The Obbe, is connected with the general telephone system. Supplies may be obtained.

Leverburgh channel is the approach to Leverburgh pier and also the 20 alternative channel through the sound, but it is very narrow in parts and should be used only by shallow-draught vessels with local knowledge. The least depth on the recommended track was, in 1954, 14 feet (4^m3). It is important to keep exactly on the recommended track on account of shoals close on either side of it. 25

Approaching from south-eastward a vessel should follow the directions for Stanton channel (see page 389) until Dubh Sgeir beacon is abeam when she should steer to bring the leading beacons about 2¹/₂ cables north-westward of Rubh' an Losaid (*Lat.* 57° 46' N., *Long.* 6° 55' W.) into line, bearing about 015°, and keep them so until about 30 1¹/₂ cables distant from the front beacon when she should alter course gradually to port, keeping in mid-channel, to bring the beacon about 1¹/₂ cables westward of the southern side (see page 387) of Rubh' an Losaid into line, astern, with the framework beacon on the head of the pier on the southern side of the entrance to the channel to Leverburgh, 35 bearing 125°; this latter transit should be kept on until Volinish beacon is abeam, to pass between the shoals on either side; thence she should steer to bring that beacon into line, astern, with the front leading beacon north-westward of Rubh' an Losaid, bearing 116°, which leads through Outer Stromay channel, after which she should 40 follow the directions for Stanton channel (page 392). If proceeding through Leverburgh channel from north-westward, these directions should be reversed.

Anchorage in the south-eastern part of Stanton channel.—
Directions.—In 1954 H. M. Surveying Vessel *Cook* frequently anchored, in a depth of 9 fathoms (16^m5), with the summit of Coppay bearing 316° and Big rock, about 2 cables westward of the southern Carminish island, bearing 043°; there is over two cables swinging room here; severe gales were ridden out here, but the holding ground, 45 of hard sand, is not very good. 50

From the Minch.—It is important to follow exactly the recommended track, now described, as there are, in places, shoals less than half a cable from it.

A least depth of 16 feet (4^m9) can be carried through this channel.

Chart 2642, plan of The Narrows.

A vessel approaching from south-eastward should steer to bring Suem summit into line with Coppay summit, bearing 316° , and keep it so until Dent shoal is abeam when she should bring Jane tower into line with the north-western edge of Kyles lodge, bearing $329\frac{1}{2}^\circ$; this latter transit should be followed until Dubh Sgeir beacon comes into line with a cairn on the summit at the northern end of Ensay, bearing 300° , which latter leads midway between Bo Tagerlich and Stumbles rock (page 387). When a cairn on the western side of Saghay Mòr is in line with the summit of Stromay, bearing $325\frac{1}{2}^\circ$, she should steer for it, which leads between the shoals extending northward from Suem and Bo Stainan; when past these dangers she should bring Jane tower into line, astern, with a cairn about 9 cables east-south-eastward of it, bearing 107° , or bring two cairns on the northern end of Ensay into line, ahead, bearing 287° , either of which transits leads about half a cable south-westward of Bo Leachan and one cable south-westward of Horse rock. After passing Horse rock she should steer to bring Red Rock beacon into line with the western end of a ruined chapel on Rubh' an Teampuill, bearing 330° , and keep it so, to pass between Bo Quidam and the rocky patch, with a depth of 8 feet (2^m4) over it, about 2 cables south-westward of it, and about half a cable north-eastward of Half Sound rocks; there is a depth of 17 feet (5^m2) on this leading line about three-quarters of a cable south-westward of Bo Quidam (*Lat. $57^\circ 46' N.$, Long. $7^\circ 04' W.$*). When distant about one cable from Red Rock beacon the vessel should steer 296° through Outer Stromay channel, keeping Sgeir Volinish beacon in line, astern, with the front leading beacon for Leverburgh channel, bearing 116° , see view facing page 389; this is a pole heacon and should not be confused with Heb beacon, about one cable south-eastward of it, which is more prominent; this transit leads about $1\frac{1}{2}$ cables north-eastward of Colla sgeir and close south-westward of a patch, with a depth of 17 feet (5^m2) over it, about $2\frac{1}{2}$ cables northward of Colla sgeir; there are two patches, with depths of 19 and 18 feet (5^m8 and 5^m5) over them, on this leading line. When Rubh' an Teampuill bears 074° the vessel is clear of all danger and may stand out to sea between Shillay and Coppay.

From the Atlantic.—Approaching the Sound of Harris from north-westward, the island of Pabbay, with Beinn a' Charnain, its conspicuous peak, on the western side, and Beinn Chaipaval, about $1\frac{1}{2}$ miles south-south-eastward of Toe head on the island of Harris, on the eastern side, can be easily identified. To make the passage from north-westward the above directions should be reversed.

A vessel approaching from westward can enter the Sound of Harris through Sound of Shillay, whence she should steer east-north-eastward until Sgeir Volinish beacon is in line with the front leading beacon situated about $2\frac{1}{2}$ cables north-westward of Rubh' an Losaid, bearing 116° , whence she can proceed through Outer Stromay channel, reversing the directions given above.

A vessel approaching from northward should enter Sound of Harris between Shillay and Coppay, and bring Sgeir Volinish beacon in line with the front leading beacon about $2\frac{1}{2}$ cables north-westward of Rubh' an Losaid, bearing 116° , when about $1\frac{1}{2}$ miles southward of Coppay.

Tidal streams.—The tidal streams in the principal channels attain a rate of as much as 5 knots at springs. Elsewhere in the Sound of

Chart 2642, plan of The Narrows.

Harris they do not exceed $2\frac{1}{2}$ knots. Vessels are recommended to make the passage at or near high slack water.

Charts 2386, 2474, 2475.

HARRIS AND LEWIS.—Aspect.—The southern half of this island is mountainous, but the whole of Lewis northward of Loch Erisort, an inlet on the eastern side of that island, about 25 miles southward of Butt of Lewis (page 424), is comparatively low, with only three hills. Harris is almost divided into two by West Loch Tarbert and East Loch Tarbert, $11\frac{1}{2}$ miles north-north-eastward of Renish point; the southern half is called South Harris and the northern half North Harris.

Charts 2474, 2475.

Roneval (*Lat. $57^{\circ} 46' N.$, Long. $6^{\circ} 59' W.$*), near the southern end of South Harris, is about 1,500 feet ($457^{\text{m}}2$) high; Beinn Iuskentyre, a range at the northern end of South Harris, attains an elevation in Ceann Reamhar, 8 miles north-north-eastward of Roneval, of about 1,523 feet ($464^{\text{m}}2$). Many other mountains in Harris attain elevations of nearly 1,800 feet ($548^{\text{m}}6$); of these, Toddun, $5\frac{1}{2}$ miles east-north-eastward of Ceann Reambar, is conical, 1,724 feet ($525^{\text{m}}1$) high and shows prominently from eastward. Clisham (chart 2635), situated $20\frac{1}{2}$ miles north-eastward of Ceann Reamhar, 2,615 feet ($797^{\text{m}}0$) high, is the highest mountain in the Hebrides, but its summit, which is conical, is generally obscured by clouds.

Of the three hills mentioned above as lying northward of Loch Erisort, Beinn Bragor, 850 feet ($259^{\text{m}}1$) high, about $19\frac{1}{2}$ miles northward of Clisham and 3 miles from the north-western coast of Lewis, is not visible from the Minch; Beinn Mholach, 948 feet ($288^{\text{m}}9$) high, $4\frac{1}{2}$ miles east-south-eastward of Beinn Bragor and nearly in the centre of the island, is the highest of four distinct heads, which show from almost every direction, the western head being slightly the lowest; Muirnag, the third hill, about $8\frac{1}{2}$ miles north-eastward of Beinn Mholach, is prominent and 801 feet ($244^{\text{m}}1$) high, and from southward or northward has a double flattish summit with a long slight hollow between, while from eastward or westward it appears a single summit sloping gradually on either side.

35

Chart 2474.

WESTERN COASTS OF HARRIS AND LEWIS.—Aspect.—The land from Toe head to the entrance to West Loch Tarbert, about 7 miles north-eastward, is not so rocky and desolate in appearance as that farther northward, the coast being in many places sandy, the hills rising with a moderate and even slope, and the bare rock not being everywhere visible.

Charts 2386, 2474.

The hills on the coast from West Loch Tarbert northward to Gallan head, $24\frac{1}{2}$ miles northward of Toe head, have a peculiarly barren and desolate appearance from seaward; nearly half of them appear to be bare rock, and in thick weather there is great difficulty in distinguishing one part from another, for the headlands present no high cliffs and the same rugged features are repeated. Gasker, an outlying islet, 10 miles north-north-westward of Toe head, is a good mark.

50

Chart 2386.

*North-eastward of Gallan head (*Lat. $58^{\circ} 15' N.$, Long. $7^{\circ} 01' W.$*)*

Charts 3674, 2508, 2635.

Chart 2386.

are West and East Lochs Roag, and from the eastern entrance point of East Loch Roag the land trends 23 miles north-eastward to Butt of Lewis, and is comparatively low and level.

- 5 The only buildings to be seen on the western side of Harris or Lewis are a few white farmhouses and churches eastward of West and East Lochs Roag, which, however, are scarcely noticeable until near the land. The lighthouse on Butt of Lewis is prominent.

Charts 2386, 2474, 2475.

- 10 **Tidal streams.**—At a position 3·8 miles 278° from Gallan head the directions of the streams are rather variable; the north-east-going stream, spring rate 0·9 knot, begins —0255 Stornoway (+0515 Dover) and runs in directions varying between about 030° and 060°; the south-west-going stream, spring rate one knot, begins +0315 Stornoway (-0100 Dover) and runs in directions varying between about 210° and 230°. This position is too far offshore for the streams at it to be the coastal streams, and near the head, where the spring rate in both directions may be about 2 knots, the streams probably begin as off the entrance to West and East Lochs Roag (page 405), which 15 times are nearly the same as those at the Heisker islands (page 336).

Between the Heisker islands and Gasker, and thence along the coast to Gallan head, the north-going stream probably begins about —0425 Stornoway (+0345 Dover), and the south-going stream about +0200 Stornoway (-0215 Dover); the streams are very weak from a little 25 northward of the Heisker islands to a little southward of Gasker, but off Gasker the spring rate in both directions is about 2 knots, and probably about the same off the salient points northward to Gallan head.

- In the bay eastward of a line from Griminish point to Scarp the north-going stream, which runs eastward to Sound of Harris, begins 30 about +0545 Stornoway (+0130 Dover), and the south-going stream, which runs westward from Sound of Harris, begins about —0025 Stornoway (-0440 Dover); though the streams may be fairly strong off the salient points and in the narrow channels, they are probably very weak elsewhere in the bay.

Chart 2841.

- Coast.**—Between Toe head and Horsanish the northern entrance point of West Loch Tarbert, 8 miles north-north-eastward, the western coast of Harris is fronted, on the southern side of the outer part of West Loch Tarbert, by Taransay, between which island and the 40 mainland south-eastward and eastward is Sound of Taransay. Ard Groadnish, 7½ miles north-eastward of Toe head, is low and rocky, and foul ground extends about one cable north-north-westward from it.

Taransay, the south-western extremity of which is situated about 2½ miles north-eastward of Toe head (*Lat.* 57° 50' *N.*, *Long.* 7° 08' *W.*.), attains an elevation in Beinn Raah, 8½ cables from its northern end, of 45 869 feet (264^m9). A low sandy neck divides this island into two parts; Aird Vanish, the south-western part, is 318 feet (96^m9) high; the village of Paible is at the southern end of the northern part of the island.

- 50 Corran Raah, about one mile north-eastward of Paible, is a low sandy point, which projects about 4 cables into Sound of Taransay. Bo Du, 1½ cables west-north-westward of Rubha nan Totag, the northern extremity of Taransay, dries. Sgeir Liath, a group of above-water and sunken rocks, extends about 4½ cables north-westward from close

Chart 2841.

northward of the sandy neck connecting the two parts of Taransay ; the westernmost of these rocks lies about $3\frac{1}{2}$ cables offshore.

A shoal, with a depth of 5 fathoms ($9^{\text{m}}1$) over it, on which the sea only breaks in very heavy weather, lies about $3\frac{1}{2}$ cables northward, 5 and a shoal, with a depth of $3\frac{1}{2}$ fathoms ($5^{\text{m}}9$) over it, about 2 cables north-north-eastward, of Sgeir Liath ; these two shoals lie about 5 and $1\frac{1}{2}$ cables, respectively, from the western side of Taransay.

Dangers.—Bo na Cille, about $2\frac{1}{2}$ miles eastward of Toe head and 10 7 cables offshore, has a depth of $3\frac{1}{2}$ fathoms ($6^{\text{m}}4$) over it.

About $3\frac{1}{2}$ miles south-south-westward of Ard Groadnish, and 2 and $3\frac{1}{2}$ cables offshore, are shoals, with depths of $1\frac{1}{2}$ and 2 fathoms ($2^{\text{m}}3$ and $3^{\text{m}}7$) over them, respectively.

Middle Bo, about $3\frac{1}{2}$ miles south-westward of Ard Groadnish and 15 $8\frac{1}{2}$ cables offshore, has a depth of $3\frac{1}{2}$ fathoms ($5^{\text{m}}9$), rock over it ; the sea breaks over it in very heavy weather. Old rocks, about $3\frac{1}{2}$ miles west-south-westward of Ard Groadnish and three-quarters of a mile from the south-eastern side of the south-western part of Taransay, consist of two heads, one cable apart ; the southern head has a depth of 4 feet ($1^{\text{m}}2$) over it, and the northern head is awash. Bo Usbig, 20 about $2\frac{1}{2}$ miles south-westward of Ard Groadnish and about $4\frac{1}{2}$ cables from the southern extremity of the northern part of Taransay, dries 5 feet ($1^{\text{m}}5$) ; about midway between Old rocks and Bo Usbig are three shoals, with depths of $3\frac{1}{2}$, $4\frac{1}{2}$, and $4\frac{1}{2}$ fathoms ($5^{\text{m}}9$, $8^{\text{m}}7$, and $8^{\text{m}}7$) over them, respectively. 25

There is a channel, with a depth of $4\frac{1}{2}$ fathoms ($8^{\text{m}}2$), northward of Bo Usbig, but foul ground extends 2 cables south-south-eastward from the southern extremity of the northern part of Taransay.

Toe head in line with the summit of Coppay (page 390), bearing about 244° , leads north-westward of Middle Bo, and south-eastward 30 of Old rocks and Bo Usbig.

Bo Raah, with a depth of 5 feet ($1^{\text{m}}5$) over it, lies near the outer edge of a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, which extends about $3\frac{1}{2}$ cables from the south-eastern side of Taransay, about $8\frac{1}{2}$ cables north-eastward of the southern extremity of the island. 35 Eastward of Bo Raah, a bank which dries, extends about 6 cables from the mainland.

Anchorages and inlets.—Camus nam Borgh, which is entered between the north-eastern side of Taobh Deas (page 385) and Ard Nisabost, a salient point, 187 feet ($57^{\text{m}}0$) high, $3\frac{1}{2}$ miles east-north-eastward, is a sandy bay which could be used as a temporary anchorage in south-westerly gales, as the depths are everywhere moderate, but the shores are foul and should not be closely approached ; should the wind shift to westward and north-westward, as often occurs, the anchorage would be dangerous. 45

Traigh Luskentyre (*Lat. $57^{\circ} 52' N.$, Long. $6^{\circ} 50' W.$*), the southern entrance point of which is situated about one mile east-north-eastward of Ard Nisabost, is a sandy inlet, which dries ; the best landing place is in the south-western corner of this inlet.

Cealach na h Atha, a bight on the northern side of Corran Raah, 50 is shallow, depths of 5 fathoms ($9^{\text{m}}1$) being found about 4 cables offshore ; vessels anchoring here are sheltered from south-westerly winds by Corran Raah.

The anchorage in the north-eastern part of Sound of Taransay is

Chart 2841.

the best on the western coast of Harris for large vessels ; it has depths of from 5 to 9 fathoms (9^m1 to 16^m5), muddy sand. The best berth is about 3 cables north-eastward of Corran Raah, the tidal streams here being imperceptible. A vessel can also anchor about midway between the north-eastern extremity of Taransay and Corran Raah and about 3 cables offshore, in depths of from 7 to 9 fathoms (12^m8 to 16^m5), but if blowing hard from north-westward they should anchor nearer to Corran Raah.

- 10 Dangers in north-western approach to West Loch Tarbert.**—Old rocks, about 2 miles west-north-westward of Horsanish, in the north-western approach to West Loch Tarbert, are a group of three rocks. Bo Mòr, the south-westernmost, 2½ miles westward of Horsanish, dries one foot (0^m3). The sea breaks during heavy gales on a 15 shoal, with a depth of 7 fathoms (12^m8) over it, about 3½ cables west-north-westward of Bo Mòr. The northernmost of Old rocks, about 2½ miles west-north-westward of Horsanish, is awash. Round Bo, the easternmost of this group, about 2 miles west-north-westward of Horsanish, dries 6 feet (1^m8), and about 1½ cables southward of it is a 20 shoal, with a depth of 1½ fathoms (2^m3) over it. There is deep water between the detached heads of Old rocks.

One-third of Aird Vanish, bearing 148°, and open south-westward of Glorig Sgoillte (*Lat. 57° 56' N., Long. 7° 08' W.*), (see below), leads close south-westward of Bo Mòr (see view C. on chart 2841). A small 25 notch on the western coast of Harris, about 2½ miles north-north-westward of Horsanish, bearing 058° and well open north-westward of Husinish point (page 400), leads close north-westward ; and Horsanish in line with Rubha Leacach (page 397), bearing 117°, leads north-eastward, of Old rocks.

- 30 Husinish Glorigs**, about three-quarters of a mile south-south-eastward of Husinish point, is a group of islets and rocks, the highest of which, near the centre of the group, has an elevation of 16 feet (4^m9) ; the westernmost islet is 4 feet (1^m2) high, and is steep-to on its western side.
- 35 Bo Meadhonach**, about 1½ miles south-westward of the westernmost islet of Husinish Glorigs, has a least depth of 2½ fathoms (4^m1) over it ; the clearing marks leading south-westward of Old rocks, described above, also lead south-westward of Bo Meadhonach.

Taransay Glorigs, lying in the western approach to West Loch 40 Tarbert, about 2½ miles south-westward of Horsanish, is a group of above-water and sunken rocks. Glorig Sgoillte, the largest of these rocks, is 40 feet (12^m2) high and is split into two parts in a northerly and southerly direction. Bo Molach, the south-westernmost rock of this group, has a least depth of 6 feet (1^m8) over it, and the sea does not 45 break over it in moderate weather.

West Loch Tarbert.—West Loch Tarbert is entered between Taransay and Horsanish, about 3 miles north-westward. The head of the loch is separated from East Loch Tarbert, on the eastern coast of Harris, by a low isthmus 3 cables wide.

- 50** There are many islands and shoals in mid-channel and towards the northern side of the loch, whilst the southern shore is comparatively clear ; the most sheltered bays and anchorages are on the northern side.

The loch affords safe anchorage in several places near its head.

Chart 2841.

Tidal streams.—The in-going stream begins about +0545 Stornoway (+0130 Dover), and the out-going stream begins about -0025 Stornoway (-0440 Dover); the streams are barely perceptible except in Sound of Taransay, where the in-going stream runs north-eastward and northward, and the out-going stream runs southward and south-westward. 5

Islands and dangers.—Rubha Bogha Sgeir, about $3\frac{1}{2}$ cables south-eastward of Horsanish, is a rocky point, to which vessels should give a good berth. Bo sgeir, with a depth of less than 6 feet (1^m8) over it, 10 lies close southward and a rocky bank, with a depth of 9 fathoms (16^m5) over it, lies about 7 cables south-westward of Rubha Bogha Sgeir. A shoal, with a depth of $2\frac{1}{2}$ fathoms (5^m0) over it, and a shoal, with a depth of $4\frac{1}{2}$ fathoms (8^m7) over it, lie about 2 cables westward and about $1\frac{1}{2}$ cables south-westward, respectively, of Rubha Leacach, 15 situated about $1\frac{1}{4}$ miles east-south-eastward of Horsanish.

Glas sgeir, about $2\frac{3}{4}$ miles eastward of Rubha Bogha Sgeir and about $1\frac{1}{2}$ cables offshore, in the entrance to Loch Leosavay, is a pillar-shaped rock, 28 feet (8^m5) high; it is steep-to, except on its eastern side. Soay Beag, 116 feet (35^m4) high, lies about 5 cables south-eastward of 20 Glas sgeir. Soay Mòr, close south-eastward of Soay Beag, is also 116 feet (35^m4) high. Foul ground extends about one cable westward from the south-western extremity of Soay Mòr (*Lat.* $57^{\circ} 56' N.$, *Long.* $6^{\circ} 58' W.$), and a reef extends about 2 cables east-north-eastward from the south-eastern extremity of that islet. 25

Soay sound, the channel north-eastward of Soay Beag and Soay Mòr, is about $2\frac{1}{2}$ cables wide in its narrowest part, and is free from dangers in the fairway, except at its south-eastern entrance; the navigable channel between these islets and Taransay is about $1\frac{1}{2}$ miles wide, and is deep and free from dangers. 30

Glas sgeir Beag, situated close off the north-eastern shore of the loch, about one mile east-south-eastward of Glas sgeir, is a group of rocks, the highest of which has an elevation of 20 feet (6^m1). Sgeir a Chaise, about 2 cables south-eastward of Glas sgeir Beag, is 13 feet (4^m0) high. 35

Duisker, about 7 cables eastward of Soay Mòr, is an above-water and sunken reef; the highest rock is 7 feet (2^m1) high. Between Duisker and the north-eastern shore of the loch there are several shoals. Bo Haranis, lying $3\frac{1}{2}$ cables north-north-eastward of the highest rock of Duisker and about $2\frac{1}{4}$ cables offshore, dries. The navigable channel 40 between Duisker and the reef extending east-north-eastward from the south-eastern extremity of Soay Mòr is about $2\frac{1}{2}$ cables wide, with a least depth of 9 fathoms (16^m5) in the fairway; the channel between the shoals north-eastward of Duisker and the north-eastern shore is about 2 cables wide and free from dangers. 45

Sgeir Tarcall, about 7 cables east-north-eastward of Ard Groadnish and three-quarters of a cable from the southern shore of the loch, is an above-water rock.

Isay, about $2\frac{1}{2}$ miles east-south-eastward of the south-eastern extremity of Soay Mòr, is a flattish green islet, 48 feet (14^m6) high; reefs 50 extend about $1\frac{1}{2}$ cables southward and east-south-eastward from it. The channels northward and southward of Isay are about $3\frac{1}{2}$ cables wide, and are deep and free from dangers.

Chart 2841.

Duisker, about $4\frac{1}{2}$ cables north-eastward of Isay, is a flat, bare rock above water. Shoals, with least depths of 2 feet ($0^{\text{m}}6$) over them, lie within $1\frac{1}{2}$ cables northward and north-eastward, and about three-quarters of a cable south-westward of Duisker.

A shoal, with a depth of $2\frac{1}{2}$ fathoms ($4^{\text{m}}1$) over it, lies about 8 cables south-south-eastward of the eastern extremity of Isay and about three-quarters of a cable from the southern shore of the loch. Foul ground extends about three-quarters of a cable north-westward of Gob Ard
10 Stioclett, a point on the southern shore of the loch, about 3 miles eastward of Ard Groadnish.

Anchorages and inlets.—Govick hay is entered close eastward of Rubha Bogha Sgeir; landing can be effected here in almost any weather.

15 Loch Leosavay is entered about $2\frac{1}{2}$ miles east-south-eastward of Rubha Bogha Sgeir; there are depths of from 3 to 9 fathoms ($5^{\text{m}}5$ to $16^{\text{m}}5$) in it. The outer part of this inlet is free from dangers, but there is a rock, lying close off the north-eastern shore, about $5\frac{1}{2}$ cables north-westward of Glas sgeir, which dries. There are several rocks at
20 the head of the inlet.

The best anchorage for small vessels in Loch Leosavay is off the north-eastern side of the loch, about $5\frac{1}{2}$ cables north-westward of Glas sgeir, in a depth of $3\frac{1}{2}$ fathoms ($6^{\text{m}}4$), mud.

25 Loch Meavaig is entered about $2\frac{1}{2}$ miles east-south-eastward of Glas sgeir; it has depths of from one to 5 fathoms ($1^{\text{m}}8$ to $9^{\text{m}}1$), soft mud with oysters. A small vessel can anchor, in depths of 2 or 3 fathoms ($3^{\text{m}}7$ or $5^{\text{m}}5$) halfway up the loch, beyond which it shoals rapidly, the head of the loch drying out about $2\frac{1}{2}$ cables. A small vessel could beach with safety in this inlet.

30 Loch Bun Abhainn-eadar is entered about $2\frac{1}{2}$ miles east-south-eastward of Sgeir a Chaise; it is a safe anchorage, with depths of from 3 to 7 fathoms ($5^{\text{m}}5$ to $12^{\text{m}}8$), mud, and free from dangers. Small craft can obtain anchorage in the inlet on the northern side of this loch, about $6\frac{1}{2}$ cables within the entrance.

35 The principal anchorage in West Loch Tarbert is near the head of the loch, in depths of from 7 to 12 fathoms ($12^{\text{m}}8$ to $21^{\text{m}}9$), mud; although this anchorage is a little open to the north-westward there is never a heavy sea.

40 A small vessel can obtain anchorage about one cable west-north-westward of the pier on the southern side of the head of West Loch Tarbert (*Lat. $57^{\circ} 54' N.$, Long. $6^{\circ} 50' W.$*).

There is also a pier on the northern side of the loch, about 3 cables from its head.

45 **Directions.**—The best entrance into West Loch Tarbert is southward of Taransay Glorigs. A vessel approaching from northward should be careful to avoid Bo Molach, and steer to pass about 2 cables northward of Taransay.

50 A vessel wishing to enter Loch Bun Abhainn-eadar should pass about $1\frac{1}{2}$ cables southward of the eastern Duisker, and then steer north-eastward for the entrance of this inlet, passing about midway between Duisker and the eastern shore. If passing northward of Duisker a vessel should keep close to the northern shore.

A vessel proceeding to the upper anchorage of West Loch Tarbert should, after passing the northern end of Taransay, steer for Isay.

Chart 2841.

passing it on either side, and anchor as directed above. During strong southerly winds very heavy squalls come down from the southern shore, and then Sound of Taransay is the best anchorage.

From a position northward of Toe head (page 385) a vessel bound for West Loch Tarbert through the Sound of Taransay should steer with Toe head in line with the summit of Coppay (page 390), bearing 244° , astern, until the summit of Ard Nisabost (page 395) bears 153° , whence she may steer in mid-channel through the sound. A vessel should be careful to avoid the dangers in the south-western part of the 10 sound, which are described on page 394.

This route is not recommended as the sands off Traigh Luskentyre cover at high water, when they are very deceptive.

A vessel approaching from north-westward can proceed into West Loch Tarbert passing north-eastward of both Old rocks and Taransay 15 Glorigs, but, though the channel has a least width of one mile, it is dangerous owing to the marks being somewhat obscure, except in a heavy swell, when all the rocks are marked by breakers.

To enter this channel the vessel should give the western side of Scarp (page 400) a berth of about $1\frac{1}{2}$ miles, until the southern extremity 20 bears 089° , and is in line with the small notch on the western coast of Harris (page 396). Thence she should keep the south-westernmost islet of Husinish Glorigs in line with Horsanish, bearing about 120° , until within about one mile of the islet, whence she should steer for the northern end of Taransay (*Lat. $57^{\circ} 55' N.$, Long. $7^{\circ} 01' W.$*), passing 25 about a quarter of a mile south-westward of Husinish Glorigs ; the clearing marks north-eastward of Old rocks are given on page 396. When West Loch Tarbert is opened out the vessel can steer eastward into the loch, and proceed to the desired anchorage, as directed above.

Charts 2905, 2841.

30

Tarbert.—Tarbert village stands at the head of the loch ; it has a post and telegraph office. In 1951 the population was 1,426.

There is regular communication by sea with Kyle of Lochalsh and Mallaig. There is also a regular bus service to and from Stornoway.

Small quantities of fresh provisions can be obtained, and ship's 35 stores are obtainable. Water is laid on to the pier.

There is usually a small stock of coal at Tarbert.

Life-saving.—A line-throwing apparatus is maintained at Tarbert ; see page 9.

Chart 2841.

40

Coast.—The principal inlets between Horsanish (page 394) and Aird Brenish, about 10 miles northward, are Loch Resort, which is entered about $3\frac{1}{2}$ miles north-north-eastward of Horsanish ; Loch Tealasavay, entered about $8\frac{1}{2}$ cables north-westward of the northern entrance point of Loch Resort ; and Loch Tamanavay, entered close 45 north-north-westward of the northern entrance point of Loch Tealasavay.

Aird Brenish is a broad rocky headland, 119 feet (36^m3) high, with bare rocks sloping to the sea ; the land in the background is very high and barren. Mealisval, the highest mountain on the western side of 50 Lewis, attains an elevation of 1,879 feet (572^m7), about $2\frac{1}{2}$ miles eastward of Aird Brenish and is remarkable for its truncated summit, sloping slightly eastward. Several other mountains between Loch Tamanavay and Mealisval are over 1,500 feet (457^m2) high.

Charts 2474, 2475, 2508, 2635.

Chart 2841.

Tidal streams.—In Lochs Resort, Tealasavay and Tamanavay, the in-going streams begin about +0545 Stornoway (+0130 Dover), and the out-going streams begin about -0025 Stornoway (-0440 5 Dover); the streams in the lochs, and in Caolas an Scarp and Caolas an Eilean are barely perceptible.

Off-lying Islets.—Dangers.—Submarine cable.—Gasker, an islet $5\frac{1}{2}$ miles westward of Husinish point (*see below*), is 99 feet (30 m^2) high, smooth, and green. Seals herd on this islet in the autumn. 10 It is fringed by reefs, which, on the western side, extend about 1 $\frac{1}{2}$ cables offshore; the reefs on the northern side are indented by Geo Iar, a narrow inlet. There is no anchorage off the islet, the depth being about 20 fathoms (36 m^6), a quarter of a mile off it, with rocky bottom. Gasker Beag, 6 cables east-south-eastward of Gasker, is a bare rock 20 15 feet (6 m^1) high. Sgeir Chomhnard, close east-north-eastward of Gasker Beag, is 6 feet (1 m^8) high. Ranald's Bo, 4 $\frac{1}{2}$ cables south-westward of the southern point of Gasker (*Lat. 57° 59' N., Long. 7° 17' W.*), has a depth of 31 feet (9 m^4) over it.

Husinish point is the extremity of a peninsula, 270 feet (82 m^3) high, 20 and generally steep-to one cable offshore.

Husinish Glorigs and Old rocks, off-lying the coast between Horsanish and Husinish point, are described on page 396.

Scarp is an island, 1,005 feet (306 m^3) high, situated about one mile northward of Husinish point. On its eastern side, near its southern 25 end, is a village, but landing cannot be effected on the island, even in Caolas an Scarp, the channel southward and eastward of Scarp, when there is any sea.

Bo Leire, about 4 $\frac{1}{2}$ cables west-north-westward of the southern extremity of Scarp, has a depth of 5 feet (1 m^5) over it. The sea 30 occasionally breaks over a shoal, with a depth of 4 fathoms (7 m^3) over it, about 4 $\frac{1}{2}$ cables westward of Manish, the south-western extremity of Scarp, and also over a shoal, with a depth of 2 fathoms (3 m^7) over it, about 7 cables west-north-westward of Manish.

The small notch on the western coast of Harris (page 396), bearing 35 087°, and just open southward of the southern extremity of Scarp, leads southward of Bo Leire and of the 4-fathom and 2-fathom (7 m^3 and 3 m^7) shoals described above.

Ohe rocks, about 1 $\frac{1}{2}$ miles north-westward of Manish and 3 $\frac{1}{2}$ cables offshore, are a group of rocks, some of which dry from 7 to 10 feet 40 (2 m^1 to 3 m^0). Between these rocks and the 2-fathom (3 m^7) shoal mentioned above are several shoals, with a least depth of 1 $\frac{1}{4}$ fathoms (3 m^2) over them.

The north-westernmost above-water rock of Duisker (page 401), in line with the north-western extremity of Mealastra island (page 401), 45 bearing 031°, leads north-westward of Ohe rocks.

Bo Mol Donn, about 2 $\frac{1}{2}$ cables north-westward of the north-western extremity of Scarp, has a depth of 3 $\frac{1}{2}$ fathoms (5 m^9) over it.

Kearstay island, lying about a quarter of a mile westward of Slettish, the northern extremity of Scarp, rises to a peak near its western 50 end, where it is divided by a rocky cleft. Boghannan Cuil, a reef, which dries 6 feet (1 m^8), extends about 1 $\frac{1}{2}$ cables north-north-westward from the northern end of Kearstay island. There is a narrow channel, with a depth of 3 feet (0 m^9), between the northern side of Scarp and the southern side of Kearstay island, named Sound of Kearstay.

Chart 2841.

Foul ground extends about one cable northward from Slettnish (*Lat. 58° 02' N., Long. 7° 08' W.*) ; the coast of Scarp south-eastward of this promontory is bold, until within the northern entrance to Caolas an Scarp.

Fladday, an islet, is situated about one mile north-north-eastward of the south-eastern extremity of Scarp and about 3 cables from the eastern side of that island ; it is 58 feet (17^m7) high, and foul ground extends about 1½ cables north-north-eastward from its northern end and north-eastward from its north-eastern side.

Caolas an Scarp is very shallow, and should only be used by vessels with local knowledge. There is usually a depth of one fathom (1^m8) over the bar, which is about the middle of the sound, but the depth varies, and at times it has been possible to wade across.

A submarine cable, indicated on the chart, is laid across Caolas an Scarp ; the landing places are marked by beacons. Another submarine cable is laid across Sound of Kearstay. *See page 7.*

Duisker, lying about half a mile north-north-westward of Kearstay island, is a group of above-water and sunken rocks ; between and around the rocks are depths of from 10 to 20 fathoms (18^m3 to 36^m6), the bottom being very irregular. These rocks, except in the finest weather, are marked by breakers, and for several days after a westerly gale there is a dangerous confused breaking sea in their vicinity. The highest rock of this group, situated about 6 cables north-north-westward of the northern end of Kearstay island, is a small, black, bare rock 19 feet (5^m8) high ; Bo Leathan, one cable southward of this rock, dries 6 feet (1^m8), and foul ground is situated about 5 cables east-north-eastward of the same rock ; the sea breaks over a shoal, with a depth of 6 fathoms (11^m0) over it, in this foul area in heavy westerly gales. Bo Ban, at the south-western end of Duisker, about 1½ miles west-south-westward of the 19-foot (5^m8) high rock, dries 10 feet (3^m0), and is always marked by breakers. About 5 cables west-north-westward of the 19-foot (5^m8) high rock is a similar but smaller rock, 14 feet (4^m3) high ; Cu a Buachaill, about 5 cables westward of the 14-foot (4^m3) high rock, dries 2 feet (0^m6). Buachaill rock, the north-westernmost of the group, about 4½ cables west-north-westward of the 14-foot (4^m3) rock, has a depth of 9 feet (2^m7) ; it is steep-to, and the sea only breaks over it in heavy weather. Little rocks, about 2½ cables east-north-eastward of the 14-foot (4^m3) high rock, dry one foot (0^m3).

Mealasta island, about 2½ miles northward of Slettnish and 5 cables offshore, is 219 feet (66^m7) high. The western side of Mealasta island is marked with reddish quartz rock and patches of grass, which may distinguish it from the adjacent land. A spit, with a depth of 4½ fathoms (8^m2) over its outer end, extends about 2 cables southward from the south-eastern extremity of Mealasta island ; foul ground, on which the sea breaks in heavy weather, extends about 1½ cables from the western side of the island. A bank, with depths of less than 5 fathoms (9^m1) over it, extends about 2½ cables east-north-eastward from the north-eastern side of the island.

Caolas an Eilean, between Mealasta island and the mainland eastward, is about half a mile wide, with depths of from 5 to 8 fathoms (9^m1 to 14^m6) in the fairway, but the navigable channel is narrowed at its northern end by the shoal bank extending from the north-eastern

Chart 2841.

side of Mealastra island (*Lat. 58° 05' N., Long. 7° 07' W.*), and by Bo Caolas, the westernmost of two rocks, which dry, lying $7\frac{1}{2}$ cables north-north-eastward of the south-eastern extremity of Mealastra island and $5\frac{1}{2}$ cables offshore. The western extremity of Liongam, an islet $8\frac{1}{2}$ cables south-eastward of the south-eastern point of Mealastra island, bearing about 160° , and open westward of Aird Griamanish, a promontory on the mainland $4\frac{1}{2}$ cables north-north-westward of Liongam, leads westward of Bo Caolas.

- 10 Harsgeir Mòr, about 5 cables northward of Mealastra island, is a black rock, 19 feet (5 m 8) high; Harsgeir Beag, a smaller rock, lies $1\frac{1}{2}$ cables west-south-westward of it. This latter rock is the south-westernmost of a chain of islets and rocks extending for one mile northward; Greineim, the largest islet of the chain, about $1\frac{1}{2}$ miles northward of Mealastra island and 3 cables offshore, is 44 feet (13 m 4) high.

Bomore, about $7\frac{1}{2}$ cables north-westward of Greineim and about $5\frac{1}{2}$ cables offshore, nearly dries.

Chart 2386.

- 20 Aird Fenish (page 404) in line with Mangersta sands, bearing about 042° , leads about 6 cables north-westward of Bomore.

Chart 2841.

Anchorages between West Loch Tarbert and Loch Resort.—Husinish bay, on the eastern side of Husinish point (page 400), affords temporary anchorage in fine weather, in a depth of about 7 fathoms (12 m 8), sand.

During the summer a small vessel can obtain anchorage just southward of the bar in Caolas an Scarp (page 400), with the south-eastern extremity of Scarp in line with the north-western extremity of Husinish.

- 30 Point peninsula, bearing about 207° , in a depth of $4\frac{1}{2}$ fathoms (8 m 2).

Anchorage can also be obtained by a small vessel in the northern entrance to Caolas an Scarp, between the eastern side of Scarp and the western side of Fladday (*Lat. 58° 01' N., Long. 7° 06' W.*), in depths of from 5 to $5\frac{1}{2}$ fathoms (9 m 1 to 10 m 1).

- 35 Both these anchorages in Caolas an Scarp are unsafe in winter, and during gales the sea breaks all over the sound.

Temporary anchorage can be obtained at the eastern entrance of the Sound of Kearstay, in depths of from 5 to 9 fathoms (9 m 1 to 16 m 5), sand.

- 40 **Lochs Resort, Tealasavay, and Tamanavay.**—Between Kearstay island and Mealastra island is the main approach to Lochs Resort, Tealasavay, and Tamanavay, which are sheltered chiefly by Scarp and partially by Duisker and Mealastra island. There is also an approach to these lochs through Caolas an Eilean.

- 45 **Loch Resort.**—**Dangers.**—**Anchorages.**—Loch Resort is entered between Grobadh nah Uinneag, a point $1\frac{1}{2}$ miles eastward of Fladday and Rubha Glas, $5\frac{1}{2}$ cables north-north-westward. There is good and safe anchorage, in a depth of 7 fathoms (12 m 8), mud, in a basin about $2\frac{1}{2}$ miles within the entrance.

- 50 Above this basin the loch narrows to about three-quarters of a cable in width, with moderate depths to within about 5 cables of the head of the loch; the bottom is soft mud throughout, with oyster beds.

Loch Cravadale, on the western side of Grobadh nah Uinneag, has depths of from $3\frac{1}{2}$ to 12 fathoms (6 m 4 to 21 m 9), but it is open north-

Chart 2841.

ward, and squalls with offshore winds are frequent. Its eastern shore is bold, but rocks, some of which dry, extend about $1\frac{1}{2}$ cables north-eastward from its western entrance point. The head of this inlet is connected by a very narrow channel with Loch a Ghlinne south- 5 eastward.

Taran Mòr, on the southern side of Loch Resort, about half a mile east-north-eastward of Grobadh nah Uinneag, is a remarkable cliff, 990 feet (301^m7) high, rising vertically to near the summit ; it is visible from south-westward through Caolas an Scarp. During strong 10 southerly winds the squalls off it are very violent, the surface of the sea being covered with foam ; on such occasions the breeze is steady and of moderate strength one mile farther up the loch.

Greine sgeir, about $6\frac{1}{2}$ cables west-south-westward of Rubha Glas, is an islet, 20 feet (6^m1) high ; foul ground extends about one cable 15 north-westward and about half a cable south-eastward from this islet. Bo' na Uinneag, $4\frac{1}{2}$ cables eastward of Greine sgeir, has a depth of $3\frac{1}{2}$ fathoms (5^m9) over it, and the sea only breaks over it in very heavy weather.

The north-eastern extremity of Kearstay island, bearing 284° and 20 open northward of Greine sgeir, leads close northward of Bo' na Uinneag (*Lat.* 58° 02' N., *Long.* 7° 03' W.).

A rock, with a depth of 5 feet (1^m5) over it, lies close southward of Rubha Glas.

Tidal streams.—See page 400.

25

Loch Tealasavay.—*Dangers.*—Loch Tealasavay is separated from Loch Resort, southward, by the peninsula of Aird Mòr, the western side of which is steep-to ; it has depths of from 5 to 19 fathoms (9^m1 to 34^m7). The loch is open to and unsafe with westerly winds.

Creagan Gorra Cleite, a hill on the northern side of the head of the 30 loch, about $1\frac{1}{2}$ miles eastward of the northern entrance point, is 394 feet (120^m1) high, and falls sharply to the northward ; it is easily identified.

Bo Thorcuil, on the northern side of the approach, about 5 cables westward of the northern entrance point, is a group of sunken rocks, 35 with depths of less than 6 feet (1^m8) over them ; the bottom in this locality is extremely irregular, and the rocks rise suddenly ; those with the least depths are marked by kelp, but this is not visible near high water, and the sea seldom breaks over them.

Creagan Gorra Cleite, bearing 079° and open southward of the 40 northern shore of Loch Tealasavay, leads southward (*see* view B on chart 2841), and the summit of Mealastra island, bearing about 322° and open south-westward of Liongam, leads close south-westward of Bo Thorcuil. *See* view A on chart 2841.

Bo na Surraig, close off the southern shore, about $1\frac{1}{2}$ miles west- 45 south-westward of Creagan Gorra Cleite, dries ; about 2 cables eastward of Bo na Surraig a spit extends about half a cable northward from the southern shore.

Tidal streams.—See page 400.

Loch Tamanavay.—*Dangers.*—*Anchorages.*—Loch Tamanavay 50 is separated from Loch Tealasavay, southward, by Aird Beag, a peninsula 589 feet (179^m5) high. The vicinity is sparsely inhabited.

A shoal, with a depth of 5 fathoms (9^m1) over it, lies in mid-channel, about 2 cables east-north-eastward of the northernmost rock of Bo

Chart 2841.

Thorcuil. Dubh sgeir, close off the south-western side of Aird Beag (*Lat. 58° 03' N., Long. 7° 03' W.*), is an above-water rock.

The area within the clearing marks for Bo Thorcuil should be considered dangerous for navigation.

There is good anchorage in a bight on the north-western side of Loch Tamanavay, imminately within the entrance, in a depth of 10 fathoms (18^m3), or about one mile within the entrance, in a depth of about 14 fathoms (25^m6), or half-way up the northern arm in depths from 7 to 10 fathoms (12^m8 to 18^m3).

Tidal streams.—See page 400.

Directions.—A vessel bound for one of the three lochs described above, from southward, should steer to pass about one mile eastward of Gasker Beag (page 400), and thence westward of Duisker, which will be visible, with the sea breaking on Bo Ban, the south-westernmost rock. After passing westward of Bo Ban she should keep Toe head (page 385) bearing not more than 172°, so as to pass westward of Cu a Buachaill and Buachaill rock. When the southern extremity of Mealasta island bears 083° she should steer for it on that bearing until about half a mile from the south-western extremity of the island.

If bound for Loch Resort the vessel can now steer to pass about mid-way between Greine sgeir and Rubha Glas, passing south-westward of Bo Thorcuil ; after passing north-eastward of Greine sgeir she can steer into the loch, taking care to avoid Bo' na Uinncag, and anchor in the widest part of the loch, in a depth of 7 fathoms (12^m8).

If bound for Loch Tamanavay, when the vessel is about half a mile westward of the south-western extremity of Mealasta island she should steer to pass south-westward of Bo Thorcuil, and when Creagan Gorra Cleite bears 079° and is open southward of the northern shore of Loch Tealasavay she should steer on this mark until the south-eastern entrance-point of Loch Tamanavay bears 027°, whence she should keep on this bearing until abreast of Dubh sgeir ; she should then keep in mid-channel through the entrance into Loch Tamanavay, and proceed to the desired anchorage.

A vessel approaching from northward should steer to pass about half a mile westward of the south-western extremity of Mealasta island (*Lat. 58° 05' N., Long. 7° 07' W.*), and then proceed as directed above.

Anchorage in Caolas an Eilean.—Caolas an Eilean (page 401) affords temporary anchorage during the summer, but a heavy swell sets in with north-easterly gales, and the holding ground is doubtful. The best berth is in a depth of 4 fathoms (7^m3), sand, abreast of the middle of, and 2 cables distant from, the eastern side of Mealasta island.

Chart 2386.

Coast.—Aspect.—Dangers.—Northward of Mealsval (page 399) the land is generally lower than farther southward, and the south-western shore of West Loch Roag, on the north-eastern side of Gallan head (page 393), is the north-eastern limit of the mountainous portion of Lewis.

Aird Fenish, about three-quarters of a mile north-eastward of the northern extremity of Aird Brenish, is a bare, rocky, steep-to headland of a light-brown colour, sloping abruptly to the sea. A bay lies between it and Eilean Molach, 1½ miles northward ; there is a small sandy inlet near the middle of this bay, on the shore at the head of

Chart 2386.

which Mangersta sands attain an elevation of 150 feet ($45^{\text{m}}7$) ; the bay is rather shallow, and its shores should not be approached nearer than 3 cables.

Eilean Molach, situated close west-south-westward of the south-western end of Ard Mòr Mangersta, a promontory 227 feet ($69^{\text{m}}2$) high, has nearly vertical cliffs, 150 feet ($45^{\text{m}}7$) high ; it shows well from northward of Gallan head ; the channel between it and the coast of Lewis is narrow and almost blocked. Bogha Phail, about 6 cables north-north-eastward of Eilean Molach and about three-quarters of a cable offshore, is a rock which dries 6 feet ($1^{\text{m}}8$). Four radio masts stand on the north-western end of Ard Mòr Mangersta.

Camus Uig is entered between Ard Mòr Mangersta and Sheilavig skerry, an islet, 25 feet ($7^{\text{m}}6$) high, lying close offshore about three-quarters of a mile north-eastward.

15

Between Sheilavig skerry and Gallan head the coast is formed of rocky cliffs, some of which are over 100 feet ($30^{\text{m}}5$) high ; for a quarter of a mile northward of Sheilavig skerry foul ground extends about one cable offshore.

Gallan head, the western entrance point of West Loch Roag, is a flattish headland, 275 feet ($83^{\text{m}}8$) high, terminating in cliffs from 50 to 200 feet ($15^{\text{m}}2$ to $61^{\text{m}}0$) high. It is steep-to, except at its northern extremity, 70 yards ($64^{\text{m}}0$) northward of which is a rock which dries. Sgeir Gallan, $3\frac{1}{2}$ cables north-westward of the northern extremity of Gallan head (*Lat. $58^{\circ} 14' N.$, Long. $7^{\circ} 02' W.$*), dries about 11 feet ($3^{\text{m}}4$) ; it is steep-to, and the channel between it and the head is deep and free from dangers, with the exception of the above-mentioned rock.

Camus Uig is open between west-north-west and north ; the south-western entrance point is a low, bare rock. The bottom in this bay is sand ; it does not afford safe winter anchorage.

30

The bay may be identified by a bearing of Mealisval (page 399), and also by large sandhills at the head of the bay, which are in sight when bearing between 092° and 137° .

In an emergency temporary anchorage might be obtained in a south-westerly gale, in a depth of 13 fathoms ($23^{\text{m}}8$), about 2 cables within the south-western entrance point and one cable offshore, but the position would become dangerous should the wind shift north-westward.

A vessel entering Camus Uig should not close Sheilavig skerry within one cable, and care should be taken to avoid a shoal, with a depth of 3 fathoms ($5^{\text{m}}5$) over it, about $3\frac{1}{2}$ cables south-eastward of this islet.

WEST LOCH ROAG.—Between Gallan head and Tiumpa, $8\frac{1}{4}$ miles east-north-eastward, the coast forms West Loch Roag and East Loch Roag, the entrances to which can be identified by Old Hill, a remarkable islet about 295 feet ($89^{\text{m}}9$) high, situated about midway between the two above-mentioned points. The lochs are separated by the islands of Great and Little Bernera.

West Loch Roag is entered between Gallan head and Old Hill about 4 miles north-eastward. The inner part of the loch affords extensive landlocked anchorage, in depths of from 8 to 12 fathoms ($14^{\text{m}}6$ to $21^{\text{m}}9$), mud, but the approach is encumbered by many islands, islets, and rocks, which necessitate careful navigation.

Chart 2386.

There is a comparatively numerous population on the shores of the loch, but the only supplies that may be obtainable are a few sheep.

Little Loch Roag is a narrow arm extending southward from the head of West Loch Roag ; about one mile within its entrance it is only about 150 feet ($45^{\text{m}}7$) wide. The tidal streams (see below) in the entrance and in the narrow parts are rapid, so that, although there are no sunken rocks and the channel is deep, it is difficult to get a small vessel into or out of this loch.

10 Charts 3422, 2386.

Tidal streams.—In West and East Lochs Roag the streams run north-eastward and south-westward across the entrance; the north-east-going stream begins —0425 Stornoway (+0345 Dover), the south-west-going stream begins about +0200 Stornoway (—0215 Dover) ; the spring rate in each direction is about 0·8 knot.

In the lochs generally the in-going streams begin +0555 Stornoway (+0140 Dover), and the out-going streams begin about —0015 Stornoway (—0430 Dover) ; the streams are barely perceptible in the entrances and wider parts, but in the narrower channels the spring rate 20 in each direction is generally about from 0·5 to one knot, and as much as 1·5 knots in the channel westward of Eilean Kearstay, near the head of East Loch Roag.

The in-going stream runs into, and the out-going stream runs out from, Loch Barraglom in both directions ; these streams meet and 25 separate in the narrow channel north of Eilean Crulavig. It was reported, in 1951, that the streams meet and separate off Rubha Glas, the south-eastern extremity of Great Bernera, and not off Sruth Earshader.

In the entrance to Little Loch Roag, at the head of West Loch Roag, 30 the in-going stream begins about —0610 Stornoway (+0200 Dover), and the out-going stream begins about +0015 Stornoway (—0400 Dover) ; the streams run very strongly, spring rate up to about 5 knots in the narrowest parts of the channel in both directions. In the entrance to Loch Ceann Hulavig, at the head of East Loch Roag, the 35 streams begin about as in the entrance to Little Loch Roag, and attain a spring rate of about 4 knots in both directions in the narrowest parts of the channel.

Communication.—There is regular communication by sea with the other islands of the Hebrides, also with Oban and Glasgow.

40 Chart 2386.

Outer part of West Loch Roag.—Islands and dangers.—Old Hill is an excellent mark for the entrance to Loch Roag, and from either eastward or westward it has a peculiar lump-like appearance ; from the northward it is more elongated, and other islands show behind 45 it. The northern coast consists of dark, cavernous cliffs, which slope sufficiently southward to allow of its being ascended, but it is seldom that the weather will permit landing from a boat in winter.

Bearasay, an island about 3 cables south-eastward of Old Hill (Lat. $58^{\circ} 17' N.$, Long. $6^{\circ} 55' W.$), is 177 feet ($53^{\text{m}}9$) high, and flat-
50 topped, with high precipitous cliffs on all sides ; a shoal bank extends about half a cable northward from the northern end of Bearasay. Stae nan Eilean, close eastward of the eastern extremity of Bearasay, is 78 feet ($23^{\text{m}}8$) high, and foul ground and a shoal bank extend about one cable east-north-eastward from it. A rock, 14 feet ($4^{\text{m}}3$) high, is

Chart 2386.

situated close north-eastward of Stac nan Eilean. A shoal bank extends about $1\frac{1}{2}$ cables southward from the south-eastern end of Bearasay. Stac an Tuill, about half a cable south-westward of the south-western extremity of Bearasay, is a precipitous rock, 128 feet (39 m 0) high, and Cleit a Stae, a rock, 15 feet (4 m 6) high, lies close westward of it. A shoal bank extends about a quarter of a cable westward from Cleit a Stac.

The channel between Old Hill and Bearasay is deep and free from dangers, but the bottom is uneven, and any swell causes a troublesome sea, especially when the wind opposes the tidal stream.

Floday, an island about 4 cables southward of Bearasay, is 60 feet (18 m 3) high; from the northern end of Floday a chain of jagged rocks and islets extends $2\frac{1}{2}$ cables northward, of which Fleasgeir, the highest, $1\frac{1}{2}$ cables northward of the northern end of Floday, is a sharp-pointed barren rock, 44 feet (13 m 4) high and prominent; a shoal, with a depth of 2 fathoms (3 m 7) over it, lies $1\frac{1}{2}$ cables north-eastward of Fleasgeir. Tamna, close southward of the southern side of Floday, is a flat grass-covered islet 25 feet (7 m 6) high, and is connected with Floday by a reef that dries; foul ground and a shoal bank extend $1\frac{1}{2}$ cables south-eastward, southward, and south-westward from Tamna.

The channel between Bearasay and Floday is foul.

Sgeir na Galla, about $6\frac{1}{2}$ cables south-westward of Stac an Tuill, dries 9 feet (2 m 7) and always shows in the trough of the swell. Patches, with depths of from 7 to 9 fathoms (12 m 8 to 16 m 5) over them, lie between Sgeir na Galla and Floday; a shoal, with a depth of $3\frac{1}{2}$ fathoms (5 m 9) over it, about $1\frac{1}{2}$ cables southward of Sgeir na Galla, is dangerous to pass over, as the sea frequently breaks heavily over it.

Harsgeir, an islet, about $9\frac{1}{2}$ cables south-south-westward of Stac an Tuill, is 40 feet (12 m 2) high, and flat; a rocky spit extends $1\frac{1}{2}$ cables north-north-westward from its north-western end, with a detached shoal, with a depth of $3\frac{1}{2}$ fathoms (6 m 4) over its extremity. Shoals extend about half a cable east-south-eastward from the north-eastern extremity of Harsgeir, and a shoal, with a depth of 5 fathoms (9 m 1) over it, lies $1\frac{1}{2}$ cables south-eastward of its south-eastern extremity.

Poll Gainmlich, between the islets and rocks extending north-westward from the north-western end of Great Bernera (*Lat.* 58° 15' *N.*, *Long.* 6° 53' *W.*), westward, and a similar chain extending northward from Little Bernera (see page 408), eastward, is much used as a fishing ground in winter, but does not afford anchorage.

Kyles Floday, between the south-eastern end of Floday and the north-western end of Great Bernera, which has depths of from 7 to 9 fathoms (12 m 8 to 16 m 5) in the fairway, is only recommended for small vessels in fine weather; in heavy weather the sea breaks right across it. Only the dangers bordering the channel through Kyles Floday are described below.

Bogha Charmaig, about $2\frac{1}{2}$ cables eastward of the eastern extremity of Floday, dries one foot (0 m 3). A shoal, with a depth of $3\frac{1}{2}$ fathoms (5 m 9) over it, is situated on the western side of the channel, $1\frac{1}{2}$ cables east-south-eastward of the southern extremity of Floday, and a shoal, with a depth of $3\frac{1}{2}$ fathoms (6 m 4) over it, lies on the eastern side of the channel, $2\frac{1}{2}$ cables east-south-eastward of the same point.

Bogha Mòr, about $2\frac{1}{2}$ cables north-north-westward of the north-western extremity of Great Bernera, dries 4 feet (1 m 2).

Chart 2386.

Bogha Dubh, about 3 cables west-south-westward of the north-western extremity of Great Bernera, dries 7 feet (2^m1).

The rock, 14 feet (4^m3) high, close east-north-eastward of Stac nan Eilean, in line with the eastern extremity of Old Hill, bearing 335°, leads between Bogha Charraig and the dangers on the western side of Kyles Floday, passing close north-eastward of the 3½-fathom (5^m9) shoal, 1½ cables east-south-eastward of the south-eastern extremity of Floday. The northern extremity of Sgeir Gheideim Fhlich, situated 10 6½ cables northward of the north-western extremity of Great Bernera, in line with the summit of Campay (page 414), bearing 036°, leads through the fairway of Kyles Floday, passing north-westward of Bogha Dubh.

Camus Bosta, between the north-western end of Great Bernera and 15 the western side of Little Bernera, is encumbered with several shoals, and should not be entered, except by boats. The narrow channel between Great and Little Bernera opening into Camus Bosta is convenient for boats with local knowledge, passing between East and West Lochs Roag, but with northerly winds and any swell there is at times 20 a nasty breaking sea in Camus Bosta.

The surfaces of both Great and Little Bernera are undulating. Little Bernera (*Lat. 58° 16' N., Long. 6° 52' W.*), the northernmost, is 129 feet (39^m3) high, and is separated from Great Bernera by a narrow channel, which is almost blocked by a bar near its western end. Great 25 Bernera attains an elevation of 277 feet (84^m4), and its southern end is separated from Lewis by Loch Barraglom, which is almost blocked, at Sruth Earshader, by a bar.

A bridge crosses Sruth Earshader with headroom of 8½ feet (2^m6) under the centre span.

30 An overhead cable, with a clearance of 100 feet (30^m5), also crosses Sruth Earshader.

An overhead cable, with a clearance of 30 feet (9^m1), crosses the loch between Great Bernera and Sruth Earshader.

There are several shoals off-lying the western coast of Great Bernera, 35 extending as much as 3½ cables offshore; the indentations on the western coast of this island are obstructed by rocks which dry.

Greinam, an islet, 52 feet (15^m8) high, is situated about 9½ cables southward of the north-western extremity of Great Bernera and about half a cable from the western side of that island. Foul ground and 40 a shoal bank extend about 1½ cables north-north-westward from the northern side of Greinam. There are shoals, with a least depth of 3½ fathoms (6^m4) over them, about 2½ cables north-westward of the north-western extremity of Greinam. Between Greinam and Harsgeir there are several banks, with depths of from 7 to 10 fathoms (12^m8 to 45 18^m3) over them. A shoal, with a least depth of 1½ fathoms (2^m3) over it, on which the sea breaks, is situated about 3½ cables south-south-eastward of Greinam and about 1½ cables from the western side of Great Bernera.

Ugly rocks, 6½ cables south-south-eastward of Greinam, dry 4 feet 50 (1^m2). The western extremity of Greinam in line with the eastern extremity of Floday, bearing 348°, leads close westward of Ugly rocks (*see* view facing page 424); to ensure a vessel passing well westward of these rocks the eastern extremity of Floday should be kept well open westward of the western extremity of Greinam.

Chart 2386.

South-eastward of Ugly rocks an opening in the western coast of Great Bernera leads into Tob Valasay, a narrow inlet ; the entrance dries, and when there is sufficient depth in it the tidal stream is too strong for it to be used.

Pabay Mòr lies about 2 cables east-north-eastward of the headland terminating in Eala Sheadha, which is 125 feet ($38^{\text{m}}1$) high and steep-to. Pabay Mòr (*Lat. 58° 14' N., Long. 6° 56' W.*) is 225 feet ($68^{\text{m}}6$) high.

Pabay Beag, close northward of Pabay Mòr, and Mas sgeir, close northward of the north-western end of Pabay Beag, are two islets 10 134 and 90 feet ($40^{\text{m}}8$ and $27^{\text{m}}4$) high, respectively, which are almost connected. A shoal, with a depth of 4 fathoms ($7^{\text{m}}3$) over it, lies about half a cable north-westward of the north-western side of Mas sgeir, and a hank, with a least depth of 7 fathoms ($12^{\text{m}}8$) over it, over which the sea breaks in heavy weather, lies about $1\frac{1}{2}$ cables northward 15 of the northern side of Mas sgeir. Bogha Dubli, close north-eastward of the north-eastern extremity of Pabay Mòr, dries 8 feet ($2^{\text{m}}4$). Foul ground extends about half a cable eastward from the south-eastern extremity of Pabay Mòr.

Vacsay, an island, about $2\frac{1}{2}$ cables eastward of the south-eastern 20 extremity of Pabay Mòr, is 102 feet ($31^{\text{m}}1$) high ; rocks extend about $1\frac{1}{2}$ cables northward from its northern extremity, of which Sgeir Fail the northernmost of the above-water rocks, is 20 feet ($6^{\text{m}}1$) high. A shoal, with a depth of 4 fathoms ($7^{\text{m}}3$) over it, lies about $1\frac{1}{2}$ cables north-eastward of Sionaso, the north-eastern extremity of Vacsay ; 25 Liacam, an islet close off the eastern side of Vacsay, about $1\frac{1}{2}$ cables south-south-eastward of Sionaso, is 23 feet ($7^{\text{m}}0$) high.

Sgeir Dubh Beag, about $4\frac{1}{2}$ cables east-south-eastward of Liacam, is a small black rock, 8 feet ($2^{\text{m}}4$) high. Bogha Maighdein, about half a cable westward of Sgeir Dubh Beag, dries 7 feet ($2^{\text{m}}1$). Sgeir Dhubb 30 Mòr, about three-quarters of a cable south-eastward of Sgeir Dubh Beag, is a small, conspicuous, black rock, 18 feet ($5^{\text{m}}5$) high.

The eastern extremity of Sgeir Dhubb Mòr, in line with the eastern extremity of Vuia Mòr (page 410), bearing 150° , leads about $1\frac{1}{2}$ cables south-eastward of the 4-fathom ($7^{\text{m}}3$) shoal $1\frac{1}{2}$ cables north-eastward 35 of Sionaso.

Kyles Pabay.—Islets and dangers.—Kyles Pabay, the channel between Lewis, on the south-west, and Pabay Mòr and Vacsay, on the north-east, is $1\frac{1}{2}$ cables wide in its narrowest part, about $2\frac{2}{3}$ cables within its north-western entrance, and there are several rocks in it. 40 In heavy weather the sea runs so high at the north-western entrance that it would be very dangerous for a small vessel to seek shelter in this channel.

The north-western entrance to Kyles Pabay is comparatively deep, but the depths decrease to 3 fathoms ($5^{\text{m}}5$) close northward of Iola 45 sgeir, 5 cables south-eastward of Eala Sheadha, from whence a flat, with a least depth of one fathom ($1^{\text{m}}8$) over it, in the fairway, extends as far as Caolas na Sgeire Leithe, the channel between the south-eastern end of Pabay Mòr (*Lat. 58° 14' N., Long. 6° 56' W.*) and Vacsay.

Sgeir Mhinig a Muigh, situated close off the north-eastern side of 50 the north-western entrance to Kyles Pabay, about 2 cables south-south-westward of the north-western extremity of Pabay Mòr, is 29 feet ($8^{\text{m}}8$) high. Sgeir Mhinig a Stigh, about $1\frac{1}{2}$ cables south-south-eastward of Sgeir Mhinig a Muigh and about half a cable from

Chart 2386.

the western side of Pabay Mòr, is 35 feet (10^m7) high. The channel lies westward of these rocks.

Iola sgeir, lying in about mid-channel, dries 8 feet (2^m4), and a shoal bank extends about a quarter of a cable north-north-eastward from it. Between Iola sgeir and the point about $1\frac{1}{2}$ cables south-eastward of Eala Sheadha some shoals, with a least depth of $1\frac{1}{2}$ fathoms (2^m7) over them, extend about three-quarters of a cable from the south-western shore of Kyles Pabay.

10 Shiaram Beag and Shiaram Mòr are two islets, 20 and 47 feet (6^m1 and 14^m3) high, respectively, lying close together on the southern side of the south-eastern end of Kyles Pabay; they are connected with the mainland southward by a very shallow ridge; Shiaram Mòr is conspicuous.

15 Berie sands extend from the shore south-westward from the southern extremity of Shiaram Mòr, to Stung, a steep and salient point on Lewis, southward of Vacsay.

Caolas na Sgeire Leithe.—**Dangers.**—Caolas na Sgeire Leithe should not be attempted without local knowledge, though a depth 20 of $3\frac{1}{2}$ fathoms (6^m9) can be carried through it and round the southern end of Vacsay.

Rocky shoals, with a least depth of 2 fathoms (3^m7) over them, lie on the eastern side of Caolas na Sgeire Leithe, about one cable westward of the north-western extremity of Vacsay. Three Hook rock, situated 25 in the fairway of the channel, about $1\frac{1}{2}$ cables west-north-westward of the south-western extremity of Vacsay, has a depth of 3 feet (0^m9) over it.

Sound of Vuia.—Dangers.—Vuia Mòr, the northern extremity of which is situated about $5\frac{1}{2}$ cables east-south-eastward of the south-eastern extremity of Vacsay, attains an elevation of 221 feet (67^m4) 30 in Mullach na Beinn, $6\frac{1}{2}$ cables from the northern end of the island; this hill, falling steeply on its south-western side, is very noticeable from the vicinity of Old Hill. Rubha Rollanish, the northern extremity of the island, is a long narrow point (see view facing page 424).

Sound of Vuia, the channel westward of Vuia Mòr (*Lat. $58^{\circ} 13' N.$, Long. $6^{\circ} 53' W.$*), has a navigable width of about $2\frac{1}{2}$ cables, and the fairway is deep.

Geile sgeir, situated in the northern entrance to this channel, about 35 $3\frac{1}{2}$ cables west-south-westward of Rubha Rollanish, is a rocky islet, 12 feet (3^m7) high. A shoal bank extends about half a cable northward and westward from the northern end of Geile sgeir, and on the eastern side of this islet a shoal bank, on which are some rocks that dry, extends about 70 yards (64^m0) offshore. A vessel can pass on either side of Geile sgeir.

Bogha Bhad Ghais, about $3\frac{1}{2}$ cables south-eastward of the southern end of Geile sgeir and about half a cable from the western side of Vuia Mòr, dries 7 feet (2^m1); a shoal bank extends about three-quarters of a cable northward from Bogha Bhad Ghais.

The western extremity of Chiatasay (page 411), bearing 162° and just open westward of the western extremity of Vuia Mòr, leads close westward of this rock.

Bogha na Muilne, about 4 cables southward of Geile sgeir, dries 2 feet (0^m6); a shoal, with a depth of $1\frac{1}{2}$ fathoms (2^m7) over it, lies about half a cable southward of Bogha na Muilne. The best channel is eastward of Bogha na Muilne.

Chart 2386.

The eastern extremity of Geile sgeir in line with the eastern extremity of Liacam, bearing 347° , leads close eastward of Bogha na Muilne.

Eilean Teinish, lying on the western side of Sound of Vuia, about $4\frac{1}{2}$ cables south-south-westward of Geile sgeir, is a grassy islet, 20 feet ($6^{\text{m}}1$) high ; foul ground extends about half a cable south-eastward from its southern end, and a shoal, with a depth of $5\frac{1}{2}$ fathoms ($10^{\text{m}}1$) over it, lies about three-quarters of a cable farther south-eastward.

Kyles Vuia.—Kyles Vuia, on the eastern side of Vuia Mòr, has depths of from 5 to 14 fathoms ($9^{\text{m}}1$ to $25^{\text{m}}6$), but in consequence of the numerous shoals and of the leading mark being indefinite, it should not be used.

Inner part of West Loch Roag.—Islands and dangers.—Vuia Beag, an island situated about 4 cables south-westward of the southern extremity of Vuia Mòr, is 220 feet ($67^{\text{m}}1$) high. A sunken rock lies 15 70 yards ($64^{\text{m}}0$) northward of the northern extremity of Vuia Beag. Mol Ban, about 60 yards ($54^{\text{m}}9$) north-eastward of Ru nan Faoileag, the north-western extremity of Vuia Beag, dries one foot ($0^{\text{m}}3$). Sgeir nan Creachan, about $1\frac{1}{2}$ cables south-south-westward of Ru nan Faoileag (*Lat. $58^{\circ} 12' N.$, Long. $6^{\circ} 54' W.$*) and half a cable from its 20 western side, dries 11 feet ($3^{\text{m}}4$). A shoal bank extends about $1\frac{1}{2}$ cables south-eastward from the southern extremity of Vuia Beag.

The eastern extremities of Eilean Teinish and Liacam in line, bearing 358° , lead close westward of Sgeir nan Creachan.

Middle shoal, about $3\frac{1}{2}$ cables west-south-westward of Ru nan 25 Faoileag, has a least depth of $3\frac{1}{2}$ fathoms ($5^{\text{m}}9$) over it. The western extremity of Geile sgeir, bearing 006° and just open eastward of Eilean Teinish, leads close eastward ; and Linish point, $3\frac{1}{2}$ cables southward of Eilean Teinish, in line with Sgeir Dubh Beag, bearing 019° , leads close westward of this shoal.

Gousam, about $6\frac{1}{2}$ cables westward of the north-western extremity of Vuia Beag, is a grassy islet, of 47 feet ($14^{\text{m}}3$) high. A shoal bank extends half a cable northward from the northern end of Gousam, and foul ground extends about three-quarters of a cable south-eastward from its south-eastern end.

There are depths of from $1\frac{1}{2}$ to 3 fathoms ($2^{\text{m}}3$ to $5^{\text{m}}5$) in the channel between Gousam and the north-eastern side of Floday, an island 2 cables south-westward.

Floday is heather-covered, and 145 feet ($44^{\text{m}}2$) high ; a shoal bank extends about half a cable northward from its northern extremity, and 40 foul ground extends about three-quarters of a cable from its eastern side $1\frac{1}{2}$ cables northward of its southern extremity.

There is a narrow boat channel between the southern extremity of Floday and the mainland.

Cliatasay, a heather-covered islet, 83 feet ($25^{\text{m}}3$) high, lies eastward 45 of Vuia Beag, from which it is separated by a channel about 2 cables wide ; this channel is obstructed by a shoal, with a least depth of $2\frac{1}{2}$ fathoms ($4^{\text{m}}6$) over it, lying about three-quarters of a cable westward of the north-western extremity of Cliatasay. A shoal bank extends about three-quarters of a cable northward from Cliatasay. North 50 and South Cleirich are two small rocks, which dry 5 feet ($1^{\text{m}}5$), situated about half a cable and $1\frac{1}{2}$ cables, respectively, southward of Cliatasay ; a shoal bank extends three-quarters of a cable eastward of South Cleirich.

Chart 2386.

Glas eilean, about $3\frac{3}{4}$ cables east-north-eastward of the north-eastern extremity of Cliatasay, is a green islet, 27 feet ($8^{\text{m}}2$) high ; a reef, which dries 7 feet ($2^{\text{m}}1$), and a shoal bank extend about one cable northward from its northern end. A shoal, with a depth of $1\frac{1}{2}$ fathoms ($2^{\text{m}}7$) over it, lies about three-quarters of a cable southward of Glas eilean (*Lat. $58^{\circ} 12' N.$, Long. $6^{\circ} 52' W.$*), and a shoal, with a least depth of 4 fathoms ($7^{\text{m}}3$) over it, about $1\frac{3}{4}$ cables southward.

Charts 3422, 2386.

- 10 Linngeam and Eilean nam Feannag, two grassy islets, 49 and 39 feet ($14^{\text{m}}9$ and $11^{\text{m}}9$) high, respectively, are separated by a narrow boat channel, lie about a quarter of a mile east-south-eastward of Glas eilean. A shoal, with a depth of 6 feet ($1^{\text{m}}8$) over it, is situated about $1\frac{1}{2}$ cables northward of the northern extremity of Linngeam. A bank, 15 with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extends $1\frac{1}{4}$ cables north-eastward from the eastern extremity of Eilean nam Feannag, and the channel between that islet and Aird Torranish, $2\frac{3}{4}$ cables east-north-eastward, is obstructed by shoals, with depths of from 4 to $4\frac{3}{4}$ fathoms ($7^{\text{m}}3$ to $8^{\text{m}}7$).
- 20 The northern extremity of Gousam, bearing 266° and open northward of Vuia Beag, leads through the fairway northward of Eilean nam Feannag and Glas eilean.

Chart 2386.

- Anchorages and inlets in outer part of West Loch Roag.—**
- 25 Between Gallan head and Eala Sheadha, on the south-western side of the entrance to West Loch Roag, the coastline is indented by two inlets, Camus na h Airde and Camus na Cliv ; the cliffs in this vicinity are nearly 400 feet ($121^{\text{m}}9$) high in places.

Camus na h Airde, on the south-eastern side of Gallan head, terminates in a gravel beach ; it affords neither landing place nor shelter in heavy weather. Rocks, which dry, extend nearly 2 cables from the shores of the bay.

Camus na Cliv, the western entrance point of which, named Rubha Brataig, is situated $1\frac{1}{4}$ miles south-eastward of Gallan head, is a sandy bay, but affords no shelter : it is separated from Camus na h Airde by a headland, 521 feet ($158^{\text{m}}8$) high. Tuamaclian rock, lying about 4 cables south-eastward of Rubha Brataig and about $1\frac{1}{2}$ cables from the south-western shore, dries.

The channel between Pabay Mòr and Pabay Beag forms an excellent 40 little harbour, with depths of from a quarter of a fathom to $1\frac{3}{4}$ fathoms ($0^{\text{m}}4$ to $3^{\text{m}}2$), sand, where boats with local knowledge can lie safely in any weather. The western entrance cannot be used by large boats until a quarter flood, as this entrance is nearly blocked by rocks that dry. A vessel using the eastern entrance should take care to avoid 45 Bogha Dubh.

Valtos, a small fishing village on the south-western shore of Kyles Pabay, about three-quarters of a mile south-south-eastward of Eala Sheadha, has a sheltered landing pier, which dries.

A small vessel can obtain anchorage off Berie sands (page 410), 50 about 3 cables east-south-eastward of the south-eastern extremity of Shiaram Mòr (*Lat. $58^{\circ} 13' N.$, Long. $6^{\circ} 56' W.$*), in depths of from $5\frac{1}{2}$ to 6 fathoms ($10^{\text{m}}1$ to $11^{\text{m}}0$), hard sand, but this position is seldom without swell. A vessel has ridden out a heavy south-westerly to north-westerly gale here.

Chart 2386.

Anchorages and inlets in Inner part of West Loch Roag.—
Directions.—There is safe anchorage in Meavig bay, westward of Gousam and Floday, in depths of from 4 to 8 fathoms (7^m3 to 14^m6), mud, but the entrance to this anchorage, northward of Gousam, is narrowed by the shoal banks extending half a cable northward from Gousam, and about the same distance from the northern shore. 5

Loch Meavig, which is entered southward and westward of Eilean Aird Meinish, an islet about $5\frac{1}{2}$ cables westward of the northern extremity of Floday, is a snug little harbour for small vessels, with depths 10 of from 2 to 5 fathoms (3^m7 to 9^m1), very soft mud. There are a few large stones near the shores of this loch, but no rocks. Its north-eastern shore is a low spit of well-cultivated land, on which is the Free church manse, a conspicuous house about $2\frac{1}{4}$ cables north-north-westward of the northern extremity of Eilean Aird Meinish. There is a 15 post and telegraph office on the south-western side of the head of Loch Meavig, which is connected with the telephone system. Small quantities of fresh provisions might be obtained here.

Good anchorage can be obtained in the Bay of Floday, between Floday and Vuia Beag, in depths of from 6 to 12 fathoms (11^m0 to 20 21^m9), mud. Care should be taken to avoid Middle shoal (page 411).

There is good anchorage at the head of West Loch Roag, northward of Cliatasay, Glas eilean, Linngearn, and Eilean nam Feannag, in depths of from 7 to 14 fathoms (12^m8 to 25^m6), mud.

A vessel approaching from westward should pass northward of Sgeir Gallan, and steer to pass about midway between Pabay Beag and Harsgeir, and thence in mid-channel, passing about half a mile north-eastward of Pabay Mòr and Vacsay (*Lat. $58^{\circ} 14' N.$, Long. $6^{\circ} 55' W.$*). 25

When the eastern extremity of Vacsay bears about 193° , she should steer to pass about miday between Geile sgeir and Rubha Rollanish, 30 passing westward of Bogha Maighdein. After passing between Geile sgeir and Ruhha Rollanish, she should keep not less than one cable from the western side of Vuia Mòr, so as to avoid Bogha Bhad Ghais, and steer to pass eastward of Bogha na Muilne; when southward of Bogha na Muilne she may steer for the desired anchorage at the head 35 of the loch.

A vessel approaching from northward or north-eastward can pass on either side of Old Hill, and then steer to pass half a mile westward of Sgeir na Galla and Harsgeir. After passing westward of Harsgeir she can proceed as directed above. 40

Charts 3422, 2386.

EAST LOCH ROAG.—Aspect.—East Loch Roag is entered between the chain of islets and rocks extending northward from Little Bernera, and Craigeam, an islet $1\frac{1}{2}$ miles south-westward of Tiunpan, about $1\frac{1}{4}$ miles north-eastward. 45

East Loch Roag is the only harbour on the western coast of the Hebrides which can be run for safely in a gale, and, except under Taransay in West Loch Tarbert, and Pabbay in Sound of Harris, where temporary shelter in south-westerly gales can be obtained, there is no other easily accessible place of safety for a large vessel, 50 although the inner part of West Loch Roag affords excellent anchorage.

Though the loch is open northward the swell gradually decreases as

Charts 3422, 2386.

the narrow part is approached, and when about 3 miles within the entrance, it almost disappears.

The Kyles of Little Bernera, on the western side of the entrance, about 2 miles south-south-eastward of the southern end of Mas sgeir, the northernmost of the islets extending northward from Little Bernera, and Loch Carloway, on the eastern side, the northern entrance point of which is situated about half a mile south-eastward of the south-eastern end of Craigeam, are safe harbours suitable for small vessels. There are sheltered anchorages towards the head of East Loch Roag.

Chart 2386.

Tiumpan is a prominent point with nearly vertical cliffs, which are higher than at any other part of the coast, rising to an elevation of 287 feet (87^m5). Berie, the western part of the point, is 194 feet (59^m1) high, and steep-to, with a depth of 12 fathoms (21^m9) half a cable off it.

Chart 3422.

Aird Laimishader (*Lat. 58° 17' N., Long. 6° 50' W.*), 1½ miles south-westward of Tiumpan, is the north-western extremity of a headland, the summit of which is Beinn Laimishader, 4½ cables eastward, and 373 feet (113^m7) high. This hill on southerly bearings has a sharp-pointed apex ; its eastern side falls abruptly.

Light.—A light is exhibited, at an elevation of 200 feet (61^m0), from a white hut, 15 feet (4^m6) in height, situated on Aird Laimishader.

*Chart 2386.***Tidal streams.**—See page 406.

Entrance to East Loch Roag.—Islands and dangers.—Mas sgeir, about 1½ miles northward of Little Bernera (page 408), is 69 feet (21^m0) high, with enough soil to support a flowery vegetation in summer ; a shoal bank extends about three-quarters of a cable north-eastward from its north-eastern side.

A bank, with depths of from 10 to 20 fathoms (18^m3 to 36^m6), extends about 8 cables northward from Mas sgeir, and within its northern limit are depths of from 10 to 12 fathoms (18^m3 to 21^m9), over which the sea breaks occasionally in heavy weather.

Charts 3422, 2386.

Sgeir Dhearg, about 3 cables east-south-eastward of Mas sgeir, is a bare dark-coloured rock, 7 feet (2^m1) high ; a bank, with depths of less than 3 fathoms (5^m5) over it, extends half a cable east-south-eastward from it. A shoal, with a depth of 6 feet (1^m8) over it, lies about 1½ cables westward, and a shoal, with a depth of 3½ fathoms (5^m9) over it, about one cable west-south-westward of Sgeir Dhearg.

Cul Campay, about 3½ cables south-south-westward of Sgeir Dhearg, is a bare, flat, rocky islet, 40 feet (12^m2) high ; foul ground, part of which dries 8 feet (2^m4), extends about half a cable northward from its northern side.

The channel between Cul Campay and Sgeir Dhearg is deep, but the bottom is rocky and uneven, and the sea frequently rolls in heavily, with every appearance of a tendency to break during strong northerly winds. A vessel using this channel should be careful to avoid the shoals westward and west-south-westward of Sgeir Dhearg.

Campay (*Lat. 58° 17' N., Long. 6° 53' W.*) is situated three-quarters of a cable southward of the southern end of Cul Campay ; foul ground and a shoal bank extend about three-quarters of a cable north-north-

Charts 3422, 2386.

westward from the north-western side of this islet, near its south-western end. A rounded hill, 119 feet ($36^{\text{m}}3$) high, terminates in a vertical cliff at the north-eastern end of Campay, and a remarkable hole, through which the sea breaks, penetrates the whole width of the 5 islet close southward of this hill.

Kyles Cul Campay, the channel between Campay and Cul Campay, is foul.

Kealasay, an island, 55 feet ($16^{\text{m}}8$) high, lies about $2\frac{1}{2}$ cables south-eastward of Campay. There are several islets north-westward and 10 westward of Kealasay. There are only boat channels between these islets and Little Bernera.

Kyles Campay, the channel southward of Campay, is deep and free from dangers in the fairway ; it is used by vessels running from westward for Kyles of Little Bernera (page 414). 15

Chart 3422.

Numerous rocks, some of which dry, extend about 2 cables eastward from the eastern side of Kealasay, and about the same distance northward from the north-eastern extremity of Little Bernera. Cruitir, about $3\frac{1}{2}$ cables eastward of the eastern extremity of Little Bernera, is 20 a bare rock, 10 feet ($3^{\text{m}}0$) high ; it is nearly abreast Temple sand, a sandy beach on the eastern side of that island, about midway between its north-eastern and south-eastern extremities, which is conspicuous and on the shore of which is a conspicuous tomb. A reef, which dries, extends about three-quarters of a cable northward and about half a 25 cable southward from Cruitir. A bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, and on which is a rock awash, extends about three-quarters of a cable south-eastward from the southern extremity of Cruitir. Between Cruitir and Little Bernera are many islets and rocks, which dry, but there is a narrow channel close westward of 30 Cruitir.

Charts 3422, 2386.

The south-western extremity of Cul Campay, bearing 314° and just open north-eastward of the north-eastern extremity of Campay, leads north-eastward of the rocks and shoals extending eastward from 35 Kealasay and Little Bernera, and the southern extremity of Campay in line with the southern extremity of Old Hill, bearing 283° , leads northward of these rocks and shoals.

There are numerous rocks off-lying the coast between Tiumpa and Aird Laimishader (*Lat.* $58^{\circ} 17' N.$, *Long.* $6^{\circ} 50' W.$). Dubh sgeir, 40 about 8 cables south-westward of Berie and about $3\frac{1}{2}$ cables offshore, is a bare black rock, 25 feet ($7^{\text{m}}6$) high. Pender rock, about $1\frac{1}{2}$ cables north-westward of Dubh sgeir, has a least depth of $1\frac{1}{2}$ fathoms ($2^{\text{m}}3$) over it. A reef, which dries 2 feet ($0^{\text{m}}6$), lies between Pender rock and Dubh sgeir. Bogha Rubha Thalanis, which dries 6 feet ($1^{\text{m}}8$), lies 45 between Dubh sgeir and Rubha Thalanish, about 3 cables east-south-eastward. Gun Tacar, awash at high water, lies 3 cables south-west ward of Bogha Rubha Thalanis.

Aird Mòr Bragor (page 423), bearing 060° and just open north-westward of Tiumpa, leads north-westward, and the eastern extremity of 50 Craigearm island, in line with the western extremity of Aird Laimishader, bearing 158° , leads westward of Pender rock.

Chart 3422.

Craigearm island lies about one cable offshore, and has an indentation

Chart 3422.

on its western side ; it is steep and rocky, and attains an elevation of 120 feet ($36^{\text{m}}6$). Cul Chraigean, close northward of Craigieam island, is an islet, 60 feet ($18^{\text{m}}3$) high. Sgeir Dhearg Cul Chraigean, about $\frac{5}{5}$ half a cable northward of Cul Chraigean, is a rock, 20 feet ($6^{\text{m}}1$) high, with a shoal, with a depth of $2\frac{1}{2}$ fathoms ($4^{\text{m}}1$) over it, lying about a quarter of a cable eastward of its southern extremity. There is a boat channel between Cul Chraigean and Sgeir Dhearg Cul Chraigean. Foul ground and a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extend about half a cable southward from the southern end of Craigieam island.

Caolas Chraigean, the channel between the mainland and the eastern side of Craigieam, is obstructed by several shoals.

Craig Mòr, about 9 cables south-southeastward of Aird Laimishader $\frac{15}{15}$ light-structure, is a conspicuous hill with a blunt peak, 217 feet ($66^{\text{m}}1$) high.

Outer part of East Loch Roag.—Islands and dangers.—Bindalein island is situated about $7\frac{1}{2}$ cables south-south-eastward of the south-eastern extremity of Craigieam ; it is connected with the 20 southern entrance point of Loch Carloway by a reef, which dries. Some shoals, with a least depth of 2 fathoms ($3^{\text{m}}7$) over them, lie within 2 cables south-south-westward of the south-western extremity of Bindalein island. The summit of Beinn Laimishader, bearing 024° and well open north-westward of Bindalein island, leads close north- 25 westward of these shoals.

Red rocks, about $4\frac{1}{2}$ cables southward of the south-western extremity of Bindalein island (*Lat. $58^{\circ} 16' N.$, Long. $6^{\circ} 49' W.$*) and about $1\frac{1}{2}$ cables westward of Sgeir na h Aon Chaorach, a rugged point on the mainland, have two detached beads, with deep water between ; the northern 30 rock has a depth of 6 feet ($1^{\text{m}}8$) over it, and the southern has a depth of 2 feet ($0^{\text{m}}6$) over it. A shoal, with a least depth of 3 fathoms ($5^{\text{m}}5$) over it, lies about $3\frac{1}{2}$ cables southward of Sgeir na h Aon Chaorach and about 2 cables offshore. Miles shoal, $6\frac{1}{2}$ cables southward of Sgeir na h Aon Chaorach and about $1\frac{1}{2}$ cables offshore, has a least depth of 4 fathoms ($7^{\text{m}}3$) rock over it ; about one cable east-south-eastward of Miles shoal and about three-quarters of a cable offshore is a shoal, with a depth of 3 fathoms ($5^{\text{m}}5$) over it.

The red sector of Greinam light, between the bearings of 143° and 169° , covers the dangers southward of Bindalein island, described 40 above.

Eilean Blianish, about 2 miles south-south-eastward of Sgeir na h Aon Chaorach, is a rocky islet, 14 feet ($4^{\text{m}}3$) high, lying close southward of a low point which is somewhat higher than the adjacent land and has a flattish top ; a bank, with depths of less than 5 fathoms ($9^{\text{m}}1$) over it, extends about half a cable southward and south-westward from Eilean Blianish. The eastern extremity of Greinam island, bearing 141° and well open south-westward of Eilean Blianish, leads about three-quarters of a cable south-westward of Miles shoal ; the eastern extremity of Greinam island, having the land behind it, does 50 not show up well, but the lighthouse on this islet is a guide to its position.

Rubha Fianuis is a salient point situated on the north-eastern side of the loch, about $1\frac{1}{2}$ miles south-south-eastward of Sgeir na h Aon Chaorach ; a rock awash, about $2\frac{1}{2}$ cables south-south-eastward of this

Chart 3422.

point and about three-quarters of a cable offshore, is covered by the red sector of Greinam light, described above. The clearing mark, described above, leading south-westward of Miles shoal, also leads south-westward of this rock.

The islands of Great and Little Bernera are described on page 408.

Eughlam, a narrow islet, 57 feet ($17^{\text{m}}4$) high, the northern extremity of which is $5\frac{1}{2}$ cables south-south-eastward of Cruitir, lies close off the south-western shore of the loch ; inside this islet is a boat channel which is foul. Stirk shoal, about $1\frac{1}{2}$ cables northward of the northern extremity of Eughlam (*Lat. $58^{\circ} 15' N.$, Long. $6^{\circ} 50' W.$*), has a least depth of 5 feet ($1^{\text{m}}5$) over it. There are depths of from $2\frac{1}{2}$ to 6 fathoms ($4^{\text{m}}6$ to $11^{\text{m}}0$) between Stirk shoal and Eughlam.

Charts 3422, 2386.

Stuigh (page 420), in line with the south-western extremity of Little Bernera, which shows as a high cliff on the northern side of the narrow channel at the western end of the Kyles of Little Bernera, bearing 273° , leads close northward of Stirk shoal.

Chart 3422.

Sgeir Bhan Rubha na h Airde, about 8 cables south-south-eastward of the southern extremity of Eughlam and about half a cable northward of the northern extremity of Rubha na h Airde, a salient point on the south-western shore of the loch, is 12 feet ($3^{\text{m}}7$) high ; a shoal bank extends about a quarter of a cable northward from this rock.

Aird Mòr, the northern extremity of which is situated about $4\frac{1}{2}$ cables eastward of Ruhha na h Airde, is a peninsula, 119 feet ($36^{\text{m}}3$) high. Eilean Beag and Eilean Mòr, lying close northward of Aird Mòr, and connected with each other and with Aird Mòr by a reef that dries, are 39 and 37 feet ($11^{\text{m}}9$ and $11^{\text{m}}3$) high, respectively. Eilean Mòr, the eastern islet, is steep-to on its eastern side, but a shoal, with a depth of 5 fathoms ($9^{\text{m}}1$) over it, lies about one cable north-north-westward of its northern extremity. Bo Shee, about $1\frac{1}{2}$ cables east-south-eastward of the south-eastern extremity of Eilean Mòr, has a depth of 5 feet ($1^{\text{m}}5$) over it. Foul ground extends about $1\frac{1}{2}$ cables northward from Aird Taranaish, the eastern extremity of Aird Mòr, and a bank, with 35 depths of less than 5 fathoms ($9^{\text{m}}1$) over it, extends about $1\frac{1}{4}$ cables north-north-eastward from the same point.

Temple sand (page 415), bearing 312° and just open north-eastward of Eughlam, leads north-eastward of Bo Shee and the bank extending north-north-eastward from Aird Taranaish.

40

Inner part of East Loch Roag.—Islands and dangers.—Light.—Vacasy island, about $6\frac{1}{2}$ cables south-eastward of Aird Taranaish, has a rather sharp summit, 93 feet ($28^{\text{m}}3$) high, and its southern end is separated from Great Bernera by Kyles Vacasy, a very shallow channel. A bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extends about three-quarters of a cable north-north-westward from the northern end of Vacasy island, and a similar bank extends from half a cable to nearly one cable from the eastern side of the island ; a rock, which dries 4 feet ($1^{\text{m}}2$), lies on this bank about half a cable south-eastward of the northern extremity of the island.

50

Shoals, with depths of from $1\frac{1}{2}$ to $4\frac{3}{4}$ fathoms ($2^{\text{m}}7$ to $8^{\text{m}}7$) over them, lie between Aird na Moine, a promontory on the north-eastern side of the loch, about 3 cables south-eastward of Eilean Blianish, and Greinam island (*Lat. $58^{\circ} 13' N.$, Long. $6^{\circ} 46' W.$*), $6\frac{1}{2}$ cables south-south-

Chart 3422.

eastward. The outer shoals are covered by the *red* sector of Greinam light, between the bearings of 143° and 169° .

Sgeir Sgianailt extends about one cable offshore $3\frac{1}{2}$ cables south-eastward of Aird na Moine ; it dries and depths of less than 3 fathoms (5^m5) extend about one cable northward from its northern end. Moore rock, with a least depth of 3 feet (0^m9) over it, lies about 2 cables south-south-westward of Sgeir Sgianailt, and about 2 cables offshore.

10 Greinam island, 15 feet (4^m6) high, is fringed by a rocky bank, with depths of less than 3 fathoms (5^m5) over it, extending about half a cable north-north-westward from its northern end, and a bank, with depths of less than 5 fathoms (9^m1) over it, extends about half a cable from the western side of the island.

15 A light is exhibited, at an elevation of 27 feet (8^m2), from a white beacon, 18 feet (5^m5) in height, situated on the southern point of Greinam island.

The channel eastward of Greinam island has a least depth of $2\frac{1}{4}$ fathoms (4^m1) in mid-channel.

20 Keava, an island, about $2\frac{1}{2}$ cables south-south-westward of the southern extremity of Greinam island, is 85 feet (25^m9) high. Foul ground, on which are Sgeir nan Cliabh, one foot (0^m3) high, and Water rock, which dries 2 feet (0^m6), extends $1\frac{1}{2}$ cables northward from the northern end of Keava.

25 The channel between Keava and Greinam island, with depths of over 5 fathoms (9^m1), has a least width of about one cable.

Kyles Keava, the channel westward of Keava, has a least width of about three-quarters of a cable, and depths in the fairway of from 5 to 11 fathoms (9^m1 to 20^m1).

30 Sgeirean Barraglom, situated close offshore, on the western side of the northern entrance to Kyles Keava, dry 6 feet (1^m8) in places ; the easternmost of these rocks, lying three-quarters of a cable offshore, is awash ; the 3-fathom (5^m5) line enclosing these rocks is about one cable offshore. The western side of Keava is bordered by a narrow bank, which, with depths of less than 3 fathoms (5^m5) over it, extends half a cable offshore from a position $1\frac{1}{4}$ cables from its northern end.

The cairn on the northern summit of Eilean Kearstay (see below), which is conspicuous, bearing 166° and open westward of the western extremity of Keava, leads from northward through the fairway

40 Sgeirean Barraglom and Water rock. When the northern extremity of Keava (*Lat.* $58^{\circ} 12' N.$, *Long.* $6^{\circ} 46' W.$) is in line with Rubha Arspaig, $5\frac{1}{2}$ cables eastward, bearing 097° , a vessel can steer through Kyles Keava in mid-channel.

Eilean Kearstay, about $2\frac{3}{4}$ cables southward of Keava, is 117 feet (35^m7) high.

There is a narrow channel on each side of Eilean Kearstay ; the eastern, half a cable wide, with a least depth of $1\frac{1}{2}$ fathoms (2^m7) in the fairway, being but seldom used ; the western, with depths of from 5 to 10 fathoms (9^m1 to 18^m3) in the fairway, has a least width of about a quarter of a cable. A rock, with a depth of 2 feet (0^m6) over it, lies on the western side of the western channel, about a quarter of a cable east-south-eastward of Rubha nan Sithean, a point at the south-eastern end of Great Bernera, about $3\frac{1}{4}$ cables south-westward of the north-western extremity of Eilean Kearstay.

Chart 3422.

Submarine cables.—Submarine telegraph cables, the direction of which are indicated by pecked lines on the chart, are laid across the channel on either side of Eilean Kearstay.

Local magnetic anomaly.—There is an area of local magnetic ⁵ anomaly extending about three-quarters of a mile northward and southward, and half a mile eastward and westward, half a mile north-eastward of Little Bernera.

The "ridge line" is situated about $5\frac{1}{2}$ cables eastward of the southern extremity of Kealasay, and appears to lie nearly in the magnetic ¹⁰ meridian. Immediately westward of this line the compass is deflected about 11° westward of its normal direction, and eastward of the line it is deflected about 8° in the opposite direction.

The needle is thus repelled from the centre of disturbance instead of being attracted, which latter is more usual in the northern hemisphere. At a little distance on either side of the "ridge line" the disturbance rapidly decreases, the needle attaining its normal direction probably at a distance of a quarter or a third of a mile from it.

Anchorages and lochs In outer part of East Loch Roag.—

For description of Kyles of Little Bernera, *see page 414.*

20

The bay, between Eughlam (*Lat. $58^{\circ} 15' N.$, Long. $6^{\circ} 50' W.$*) and Eilean Mòr, affords anchorage, in a depth of about 14 fathoms ($25^{\text{m}} 6$), muddy sand, and good holding ground. A large vessel has remained at anchor here for six weeks in winter, with no crew on board. The bay is open northward, and some swell comes in during gales from that ²⁵ direction. A good berth is with the summit of Eughlam bearing 334° , and about a quarter of a mile from the south-western shore of East Loch Roag, in a depth of 14 fathoms ($25^{\text{m}} 6$).

The whole width of the loch here affords anchorage if required, but the holding ground on the eastern is not so good as that on the western ³⁰ side.

Loch Beag Breaclete, which is entered about 9 cables southward of Eughlam, is a narrow inlet, with depths of from $1\frac{1}{2}$ to 5 fathoms ($2^{\text{m}} 3$ to $9^{\text{m}} 1$). Sgeir Bhan Rubha na h Airde lies on the eastern side of the entrance, and a rock, which dries 5 feet ($1^{\text{m}} 5$), lies about a quarter of a ³⁵ cable offshore, on the western side of the entrance.

The village of Breaclete is at the head of the loch, and has a post and telegraph office and is connected with the general telephone system.

Loch Risay is entered close eastward of the entrance to Loch Beag ⁴⁰ Breaclete. There are many islets, rocks, and shoals on both sides of this loch.

Both Loch Beag Breaclete and Loch Risay are too open northward to afford good anchorage.

Loch Carloway.—Dangers.—Loch Carloway, on the eastern side ⁴⁵ of the entrance to East Loch Roag, on the southern side of the peninsula of Aird Laimishader, is a good harbour for small vessels in summer ; the holding ground is stiff mud, but with north-westerly gales a considerable swell comes home.

The bluff point of Gob na Crois is situated one mile east-south-east- ⁵⁰ ward of Aird Laimishader lighthouse and has a remarkable white shingle beach close westward of it, while one cable eastward is the stone pier of Dunan, with fish and store houses behind it ; these buildings are of stone with slated roofs, and the fish house is conspicuous, but

Chart 3422.

they are not visible from the northern part of the loch. Beyond the pier, which has a depth of one foot (0^m3) alongside, the loch is narrow, tortuous, and shallow, to the straggling village of Carloway (*Lat.* $58^{\circ} 17' N.$, *Long.* $6^{\circ} 46' W.$), about 7 cables east-north-eastward of Dunan pier.

Creag Mòr (page 417) is a good mark for making Loch Carloway, especially at night.

There is a post and telegraph office at Carloway village, which is connected with the telephone system.

A small quantity of fresh provisions may be obtained in the village.

Tin rocks, situated about 3 cables east-north-eastward of the northern extremity of Bindalein island (page 416) and about $1\frac{1}{2}$ cables from the southern shore of the loch, are a group of sunken rocks, which dry 6 feet (1^m8) in places.

The channel northward of these rocks is about $1\frac{1}{2}$ cables wide between the 5-fathom (9^m1) lines ; the channel southward of the rocks is three-quarters of a cable wide between the 3-fathom (5^m5) lines.

A rock, about $1\frac{1}{2}$ cables westward of Gob na Crois and about a quarter of a cable from the northern shore of the loch, has a depth of 4 feet (1^m2) over it ; a mudbank, about one cable south-south-westward of Gob na Crois, has a least depth of 4 feet (1^m2) over it.

Charts 3422, 2386.

The southern extremity of the northern shore of the loch in line with the northern extremity of Campay, bearing 274° , leads close northward of this mudbank and to the inner anchorage.

Chart 3422.

Anchorages.—The best anchorage is in mid-channel, in a depth of $4\frac{1}{2}$ fathoms (8^m7), sand and mud, about one cable south-south-eastward of the western entrance point of Port Laimishader, which is situated $3\frac{1}{2}$ cables westward of Gob na Crois.

Small vessels can proceed farther in, keeping close to the northern shore of the loch, and anchor or moor about one cable south-westward of Dunan pier, in a depth of $2\frac{1}{2}$ fathoms (5^m0), mud.

This inner anchorage has good holding ground, but there is not sufficient room to veer cable, and with westerly gales a heavy swell sets in. It is much frequented by small fishing boats ; in stormy weather they go up the loch, north-eastward of the pier.

Charts 3422, 2386.

40 Kyles of Little Bernera.—Dangers.—Beacon.—Kyles of Little Bernera lies between the islands of Little Bernera and Great Bernera, and is suitable and safe for small vessels ; the approach to the eastern entrance is between Cruitir (page 415) and Stirk shoal (page 417). The western entrance is very narrow with many rocks which dry, and could not be safely used by large boats even in fine weather. The harbour has depths of from 3 to 4 fathoms (5^m5 to 7^m3), good holding ground, and is free from swell, but the eastern entrance is narrow and the space in the harbour restricted.

Chart 3422.

50 Stuigh, the southern entrance point of the eastern entrance to Kyles of Little Bernera, has a depth of 4 fathoms (7^m3) at a quarter of a cable northward of it ; from the southern shore, about 2 cables west-south-westward of Stuigh, rocks, which dry one foot (0^m3) in places, extend about one cable northward.

Chart 3422.

From the northern entrance point, the south-eastern extremity of Little Bernera, foul ground and a bank, with depths of less than 3 fathoms (5^m5) over it, extend about half a cable south-eastward. The beacon on Sgeir a Chaolais (see below) in line with the southern extremity of the northern shore of the channel, bearing 268° , leads close southward of this shoal bank in a depth of 4 fathoms (7^m3). 5

From the northern extremity of Aird Islivick, 4 cables westward of Stuigh, the coastal reef extends about a quarter of a cable north-eastward; its edge is fairly steep, and at half-tide is clearly visible. 10

Sgeir a Chaolais, situated in the fairway of Kyles of Little Bernera, about $4\frac{1}{2}$ cables westward of Stuigh, dries 5 feet (1^m5), and is marked on its southern side by an iron staff surmounted by a black and white cage, 7 feet (2^m1) high.

There is a narrow channel, with a depth of $2\frac{3}{4}$ fathoms (5^m0) on the northern side, and a channel, with depths of from $3\frac{1}{2}$ to 7 fathoms (6^m9 to 12^m8) and a navigable width of 60 yards (54^m9), on the southern side of this rock. 15

Anchorage.—A vessel might obtain temporary anchorage a short distance north-westward of the rocks, that dry, $1\frac{1}{2}$ cables westward of Stuigh, in a depth of 6 fathoms (11^m0), mud and sand. 20

Charts 3422, 2386.

Anchorage can be obtained about one cable westward of Sgeir a Chaolais, in depths of from 2 to $4\frac{1}{2}$ fathoms (3^m7 to 7^m9), mud. On the northern shore of this anchorage, about 4 cables westward of the northern entrance point of the eastern entrance to Kyles of Little Bernera, is the conspicuous ruin of a curing house, and on the southern shore about 5 cables westward of Stuigh is a cottage, but the latter is not visible until a vessel is westward of Sgeir a Chaolais (*Lat. $58^\circ 16' N.$, Long. $6^\circ 52' W.$*). 25 30

A vessel using this anchorage should be careful to avoid a rock, which dries 8 feet (2^m4), and lies close off the north-eastern shore of the anchorage, about one cable north-westward of Sgeir a Chaolais beacon, also a rock, with a depth of 4 feet (1^m2) over it, situated $1\frac{1}{2}$ cables west-south-westward of Sgeir a Chaolais beacon and about half a cable from the southern shore. 35

A vessel should moor, letting go the first anchor, in a depth of 3 fathoms (5^m5), shortly after passing Sgeir a Chaolais, and the second anchor when the ruin of the curing house bears about 333° , distant half a cable. 10

Chart 3422.

Anchorage and lochs in the inner part of East Loch Roag. — Port a Chaoil, on the eastern side of Aird na Moine (page 417), affords good anchorage, but several shoals obstruct its approach (see page 418).

Beannan Mòr, 6 cables north-north-eastward of Aird na Moine, is a hill, 244 feet (74^m4) high, lying on the eastern side of Loch a Bhaile; a village extends northward from the western side of the head of Port a Chaoil westward of Loch a Bhaile. 45

Large vessels anchor south-westward of a line joining Eilean Blianish and Greinam island, in depths of from 9 to 11 fathoms (16^m5 to 20^m1), mud. 50

Vessels of moderate draught anchor with the southern extremity of Aird na Moine bearing 283° , distant 2 cables, and Beannan Mòr bearing 000° , in a depth of $4\frac{1}{2}$ fathoms (7^m8), mud.

Chart 3422.

Small vessels can anchor farther in, in depths of from 2 to 3 fathoms ($3^{\text{m}}7$ to $5^{\text{m}}5$), out of the swell.

Dubh Thob, an inlet on the western side of Vacasay island, on the south-eastern side of East Loch Roag, is occasionally visited by small vessels ; the land is low at the head of this inlet.

The entrance to Dubh Thob is from northward, and a vessel should be careful to avoid a rock, which dries 7 feet ($2^{\text{m}}1$), lying in the narrowest part of the channel, about $2\frac{1}{2}$ cables southward of the north-western extremity of Vacasay island.

Breasclete bay, on the eastern side of the loch, eastward of Keava, affords good smooth-water anchorage, in depths of from 4 to 8 fathoms ($7^{\text{m}}3$ to $14^{\text{m}}6$), mud ; the holding ground is good. A vessel should anchor with the south-eastern extremity of Keava bearing 243° , 15 distant $2\frac{1}{2}$ cables, in depths of from 5 to 6 fathoms ($9^{\text{m}}1$ to $11^{\text{m}}0$).

On the northern side of Breasclete bay, about half a cable eastward of Rubha Arspaig (*Lat. $58^{\circ} 13' N.$, Long. $6^{\circ} 45' W.$*), the northern entrance point, is a stone pier, with a depth of about 2 feet ($0^{\text{m}}6$) alongside.

20 Loch Barraglom (page 408), the eastern entrance to which is situated close southward of the south-eastern extremity of Great Bernera, is sometimes used by small vessels, but the loch is generally shallow and obstructed by rocks ; the western entrance, having a depth of only 4 feet ($1^{\text{m}}2$) and strong tidal streams, should not be used without local knowledge.

A vessel can obtain anchorage out of the tidal streams, on the western side of Eilean Kearstay (page 418), with the north-western extremity of that islet bearing about 021° , and the south-western extremity 114° , in a depth of about 7 fathoms ($12^{\text{m}}8$), mud.

30 A vessel can also obtain anchorage southward of Eilean Kearstay, in depths of from $4\frac{1}{2}$ to 8 fathoms ($8^{\text{m}}7$ to $14^{\text{m}}6$). Care should be taken when approaching this anchorage from north-westward to avoid the shoal bank, extending one cable north-north-westward from the northern extremity of Eilean Scarista, which is situated close off the southern shore of East Loch Roag, about $2\frac{1}{2}$ cables westward of the southern extremity of Eilean Kearstay. Care should also be taken to avoid a shoal, with a depth of $2\frac{1}{2}$ fathoms ($4^{\text{m}}1$) over it, lying in mid-channel, about $1\frac{1}{2}$ cables westward of the southern extremity of Eilean Kearstay.

40 *Chart 2386.*

The village of Callanish, situated on a peninsula, about 7 cables east-north-eastward of the southern extremity of Eilean Kearstay, has a post and telegraph office.

A small quantity of fresh provisions may be obtained locally.

45 Loch Ceann Hulavig, at the head of East Loch Roag, extends south-eastward from Streimnish, the southern extremity of Callanish peninsula. This loch, which is about three-quarters of a cable wide at its entrance, opens into a basin about 5 cables wide, and contains several islets and rocks. In the entrance there are depths of 2 fathoms ($3^{\text{m}}7$) and in some parts of the loch there are depths of 3 fathoms ($5^{\text{m}}5$), but generally, it is filled with large shallow flats and the stream off Streimnish is so rapid that vessels seldom enter the loch.

Charts 3422, 2386.

Directions for East Loch Roag.—A vessel approaching from

Charts 3422, 2386.

westward or north-westward can pass either northward or southward of Old Hill, and north-eastward or south-westward of Mas sgeir and Sgeir Dhearg ; if passing south-westward of the latter care should be taken to avoid the shoals westward and west-south-westward of it. After passing south-westward of Sgeir Dhearg (*Lat. 58° 17' N., Long. 6° 52' W.*), the vessel can steer through the centre of the loch.

Chart 3422.

A vessel bound for Loch Carloway should, after passing westward of Craigeam, steer for Creag Mòr until the loch opens out, when she can steer in, keeping about half a cable from the northern shore of Loch Carloway, which is steep-to. She can then proceed to one of the anchorages in this loch, described on page 420.

If bound for Kyles of Little Bernera a vessel can steer south-eastward through the fairway of East Loch Roag until Temple sand bears 15° 280° , whence she can steer to pass between Cruitir and Eughlam, giving Cruitir a berth of not less than one cable ; for the clearing marks northward of Stirk shoal see page 417. If there is smooth water a vessel can anchor between Cruitir and Stuigh, in a depth of about 7 fathoms (12^m8), sand. To proceed farther in the vessel should pass about half a cable northward of Stuigh, and steer for the centre of the western entrance to the harbour ; for the clearing marks leading southward of the shoal bank extending from the northern entrance point see page 417. The vessel should pass about a quarter of a cable southward of the beacon on Sgeir a Chaolais, and moor as directed on page 420.

A large vessel should proceed higher up East Loch Roag, and anchor about half a mile south-eastward of Eughlam, or proceed still farther up the loch for smoother water. For the clearing marks leading north-eastward of Bo Shee see page 417.

30

A vessel proceeding to Breaslete bay (page 422) should pass about half a cable westward of Greinam, and then steer into Breaslete bay, giving the north-eastern and eastern coasts of Keava a berth of rather more than one cable.

Charts 3422, 2386.

35

A vessel approaching East Loch Roag from north-eastward should steer for Old Hill until the loch is well open, bearing about 160° , when she can proceed through the loch as directed above. For the clearing marks leading north-westward and westward of Pender rock see page 415.

40

Chart 3422.

At night the dangers on the north-eastern side of the loch are covered by the red sector of Greinam light (*Lat. 58° 13' N., Long. 6° 46' W.*), between the bearings of 143° and 169° , but the south-western limit of this sector leads close to the shoals southward and south-westward of Eilean Blianish (page 416).

Chart 2386.

NORTH-WESTERN COAST OF LEWIS.—From Tiumpa (page 414) to Aird Mòr, 4½ miles north-eastward, the coast is cliffty, and indented by several small bays which might afford shelter with off-shore winds to small vessels with local knowledge. This stretch of the coast should be given a berth of at least half a mile.

50

Aird Mòr Bragor is a broad, rugged, indented headland, 120 feet

Chart 3422.

(36^m6) high ; it may be identified from westward by a flat point extending from its north-eastern side. Aird Beag Bragor, the northern extremity of this headland, is 94 feet (28^m7) high. Between this headland and Aird Barvas, about 4½ miles east-north-eastward, the south-western portion of the coast consists of cliffs of from 50 to 100 feet (15^m2 to 30^m5) high, while the north-eastern portion for about 2 miles is low and interspersed with sandy patches. Aird Barvas, a broad ill-defined headland, consists of some cliffs about 100 feet (30^m5) high. Between this headland and Aird Dell, 8½ miles north-eastward, the coast consists of grassy braes with moderate slopes towards the sea, and uniform in appearance. Toa Galson (*Lat. 58° 27' N., Long. 6° 22' W.*), a point 1¼ miles south-westward of Aird Dell, has a black, rocky, vertical front 94 feet (28^m7) high ; Galson farmhouse, three-quarters of a mile south-westward of it, is noticeable from seaward over the sandy coast. Aird Dell is steep, rocky, and 120 feet (36^m6) high.

From Aird Dell the coast trends north-eastward for 2½ miles to the south-western extremity of Butt of Lewis, and thence about 20 9 cables east-north-eastward to its northern extremity.

Butt of Lewis, the northern extremity of the Outer Hebrides, is faced with vertical cliffs of from 69 to 94 feet (21^m0 to 28^m7) high, and attains an elevation of 136 feet (41^m4) about a quarter of a mile southward of its northern extremity.

25 **Outlying bank.**—A bank, with depths of from 23 to 50 fathoms (42^m1 to 91^m4) over it, lies about 18 miles north-north-westward of Butt of Lewis.

Chart 1954.

Light.—Fog signals.—Radiobeacon.—A light is exhibited, at 30 an elevation of 170 feet (51^m8), from a red brick tower, 120 feet (36^m6) in height, situated on the northern extremity of Butt of Lewis, at the brink of the cliff. *See view facing this page.*

The light-keepers' dwelling house, two-storeyed and painted white, is close southward of the lighthouse, but is not visible from westward.

35 A fog signal is sounded from a white tower near the lighthouse.

A radiobeacon transmits from the lighthouse, and there is a radio telephone.

Chart 2386.

Dangers.—Buistean, about one cable northward of the western 40 entrance point of Loch Shawbost, which is entered one mile south-westward of Aird Mòr Bragor, is a rock, which dries ; there is a boat channel between this rock and the shore.

Foul ground, which dries, extends about one cable northward from 45 Aird Beag Bragor, and a shoal, with a depth of 2½ fathoms (5^m0) over it, lies close northward of this foul ground.

Bo Arnol rocks, situated about 8 cables eastward of Aird Beag Bragor and about 4 cables offshore, dries 6 feet (1^m8). There are other rocks and shoals between Bo Arnol and the coast. For about 1½ miles eastward of Aird Beag Bragor a shoal bank and rocks extend in 50 places 3 cables offshore.

A rock, which dries 2 feet (0^m6), is situated about 2 cables north-westward of Aird Barvas. Rocks, which dry, extend nearly 2 cables offshore between Aird Barvas (*Lat. 58° 23' N., Long. 6° 32' W.*) and Aird Dell, particularly on the western side of the former, and off Galson



Ploday.
Greiman.
Western extremity of Greiman in line with eastern extremity of Ploday, bearing 348°, leads close westward of Ugly rocks.
(Original dated prior to 1865.)



Vaila Mair from north-north-westward.
(Original dated prior to 1865.)



Butt of Lewis lighthouse from eastward.
(Original dated 1855.)



Eilean Glas lighthouse in line with northern
fall of Benne Luskentyre, bearing 292°.
(Original dated prior to 1867.)



Eilean Glas lighthouse.
(Original dated 1880.)

To face page 428.

Fier Church.



sgurr Ghlas

Fier Church, bearing 318° and open south-westward of Sgeir Ghlas.
(Original sketched prior to 1901.)



Eilean a Ghille-bheid

Eilean
Arderanish

Eilean a
Ghormadh.

Eilean Arderanish, bearing 305° and open north-eastward of Eilean a Ghille-bheid.
(Original sketched prior to 1901.)

Chart 2386.

farm ; in many places there are depths of 2 fathoms (3^m7) a quarter of a mile offshore.

Hen shoal, about $2\frac{1}{4}$ miles westward of Toa Galson and one mile offshore, has a depth of $5\frac{3}{4}$ fathoms (10^m5) over it ; there is a channel, with depths of from 6 to 8 fathoms (11^m0 to 14^m6), and free from dangers in the fairway, between this shoal and the coast. Dell rock, $\frac{1}{2}$ cables north-north-westward of Aird Dell, in line with Butt of Lewis lighthouse, bearing 054° , leads through the fairway of this channel.

Foul ground extends about 2 cables offshore from the north-eastern side of Aird Dell (*Lat. $58^\circ 29' N.$, Long. $6^\circ 20' W.$*). Dell rock is 25 feet (7^m6) high, and the channel between it and the shore has depths of from 6 to 10 fathoms (11^m0 to 18^m3) in it.

A shoal bank extends about $1\frac{1}{2}$ cables west-south-westward of the south-western extremity of Butt of Lewis, terminating in Gealltuig, a rock awash. Oca sgeir lies about one cable north-north-westward of the south-western extremity of Butt of Lewis ; a rock, with a depth of less than 6 feet (1^m8) over it, lies close westward of Oca sgeir.

Charts 1954, 2386.

Several above-water rocks extend about 2 cables northward from the northern extremity of Butt of Lewis ; Lith sgeir, the northernmost of these rocks, is 4 feet (1^m2) high. There is deep water half a cable from these rocks.

Tidal streams.—Between the entrance to East Loch Roag and Butt of Lewis, the north-east-going stream begins —0425 Stornoway (+0345 Dover), and the south-west-going stream begins +0200 Stornoway (-0215 Dover) ; spring rate in each direction is about 1.5 knots off the salient points, but less between the points. The streams decrease offshore and 5 or 6 miles from the south-western part of the coast they appear to be weak and uncertain.

The north-east-going stream westward of Butt of Lewis and the south-going stream eastward of it begin nearly simultaneously, as also do the streams in the opposite directions, and the stream begins to run north-eastward, eastward and southward round the Butt —0440 Stornoway (+0330 Dover), and in the opposite directions +0145 Stornoway (-0230 Dover) ; the spring rate in each direction is from 4 to 5 knots close off the Butt, and about 3 knots one mile offshore. During the east-going stream an eddy runs northward along the coast from Rubha Geal (page 462) to the Butt, and during the west-going stream a similar eddy runs north-eastward along the coast from some miles westward of the Butt ; there is almost certainly violent turbulence off the Butt where the eddies meet the main streams, but information is not available.

The streams lose strength farther offshore and become more or less rotatory anti-clockwise. About 12 miles north-eastward of the Butt the streams begin at the same times as at the position close northward of it but the rate at springs is less than one knot.

Chart 2386.

Anchorages and inlets.—Loch Shawbost is a small bay about a quarter of a mile wide, and open northward ; it is shoal, with a sandy bottom. The shores dry out about $6\frac{1}{2}$ cables from each side, leaving an area only one cable in width for anchorage. It is suitable only for small vessels with local knowledge.

Port Mòr Bragor, on the eastern side of Aird Beag Bragor, and Port

Chart 2386.

Arnol, 2 cables eastward of Port Mòr Bragor, are two small inlets, both of which are unsuitable for anchorage.

The bay, entered between Aird Dell and the south-western extremity ⁵ of Butt of Lewis, has two extensive sandy beaches. A church and several houses inland are visible from seaward. This bay may be safely approached by sounding, except in the vicinity of Aird Dell, but vessels should be careful to avoid the shoal bank extending $1\frac{1}{2}$ cables west-south-westward from the south-western extremity of Butt ¹⁰ of Lewis. In the north-eastern corner of this bay is Cunnidal bay, a small bight, with rocks on its northern and southern sides; Sinntean rocks, on the southern side, about 2 cables south-eastward of the south-western extremity of Butt of Lewis (*Lat. 58° 31' N., Long. 6° 16' W.*) are above-water and sunken.

¹⁵ In 1953, H.M.S. *Cook* found fairly good holding ground, in winds up to force 4, in a depth of 12 fathoms (21^m9), sand, with Butt of Lewis bearing 050° 1·3 miles.

Charts 2386, 2474, 2475, 2508, 2635.

CHAPTER VIII

THE HEBRIDES—EASTERN COASTS OF HARRIS AND LEWIS

Charts 2386, 2474, 2475.

EASTERN COASTS OF HARRIS AND LEWIS.—Aspect.—

The aspect of Harris and Lewis is described on page 393.

Charts 2474, 2475.

Southward of East Loch Tarbert (page 432), the eastern coast of ⁵ Harris possesses no particular features which can be identified, even in clear weather. From a short distance, nothing can be distinguished but a rough, bare, uneven coast of moderate height without cliffs, the rock protruding from the mountain sides amongst the peaty soil, presenting a most desolate aspect. The church of St. Clement's, at ¹⁰ Rodel, near the southern end of the island, three-quarters of a mile northward of Renish point (page 384), may be identified from southward, and Eilean Glas light-tower on Scalpay (*Lat. 57° 51' N., Long. 6° 38' W.*) marks the northern side of the entrance to East Loch Tarbert, as well as the point from which the chain of islets and rocks ¹⁵ crosses the Minch (page 463) to the northern end of Skye.

Chart 1794.

About 7 miles north-eastward of Scalpay, Rubh' Uisenish with Shiant islands abreast it, and Kebock head with its vertical cliff, about ²⁰ 7 miles north-north-eastward of Rubh' Uisenish, may be identified; 9 miles north-north-eastward of Kebock head, Eye peninsula has the appearance of an island, and indicates the position of Stornoway.

Charts 2474, 2475.

Coast.—The coast between Renish point and Rubha Bocaig, the south-western entrance point of East Loch Tarbert, about ²⁵ $9\frac{1}{2}$ miles north-eastward, is much indented. The bays and inlets between Loch Rodel, the inlet on the north-eastern side of Renish point, and East Loch Tarbert are known as the East bays of Harris.

Rubha Quidnish, 119 feet (36^m3) high, 4 miles north-eastward of ³⁰ Renish point, is rocky and steep-to, with a cave in it.

Ard Manish, a promontory one mile north-north-eastward of Rubha Quidnish, is a bare rocky point, the south-western side of which is cliffy.

Chart 2475.

Rubha Cluer, $2\frac{1}{2}$ miles east-north-eastward of Ard Manish, is a rugged point not easily distinguished; on north-easterly bearings, a deep black ³⁵ chasm, nearly under its highest part, which is about 150 feet (45^m7) high, can be distinguished from some distance.

Coastguard.—An auxiliary watch is kept at Rodel; see page 10.

Chart 1794.

Off-lying danger.—Light-and-bell-float.—Sgeir Inoe, about ⁴⁰ $5\frac{1}{2}$ miles eastward of Rubha Bocaig and 3 miles from Scalpay (page 432)

Charts 3674, 2508, 2635.

Chart 1794.

dries 7 feet (2^m1). A rock, with a depth of one foot (0^m3) over it, about one cable south-south-westward of Sgeir Inoe, lies on a narrow bank extending 3 cables south-westward from the drying rock. There is another bank of small extent, with a least depth of 27 feet (8^m2) over it, lying 3 cables north-north-westward of Sgeir Inoe.

All these shoal banks and rocks in turn lie on a narrow uneven ridge, with depths of from 11 to 15 fathoms (20^m1 to 27^m4) over it, extending 4 cables northward and 4 cables south-westward of Sgeir Inoe. Another narrow uneven ridge, 5 cables in length, and with depths of from 15 to 17 fathoms (27^m4 to 31^m1) over it, running north and south, commences 5 cables north-north-westward of Sgeir Inoe.

An area, with three banks, with depths of from 13 to 18 fathoms (23^m8 to 32^m9) over them, lies about 2 miles eastward of Sgeir Inoe.

Between Scalpay and Sgeir Inoe the depths are irregular.

A small bank, with depths of from 16 to 20 fathoms (29^m3 to 36^m6) over it, and with depths of from 40 to 50 fathoms (93^m2 to 91^m4) around it, is situated 3 miles north-north-eastward of Sgeir Inoe (*Lat. $57^{\circ} 50' N.$, Long. $6^{\circ} 33' W.$*).

20 The depths in the channel between Sgeir Inoe and Sgeir Graidach (page 515), 4 miles south-eastward, are irregular, and this channel is not generally used.

Eilean Glas light-tower in line with the summit of the first hill northward of Tarhert (page 399), bearing about 308° , leads about 4 cables south-westward; Rubh' Uisenish in line with Srianach head, $4\frac{1}{2}$ miles north-eastward, bearing 034° , leads north-westward; and Eilean Glas light-tower in line with the northern fall of Beinn Lusken-tyre (page 393), (*see view facing page 424*), bearing 292° , leads northward of Sgeir Inor.

30 A light-and-bell-float, painted red, marked SGEIR INOE in white letters on each side, fitted with a radar reflector, and exhibiting a white flashing light showing a short flash every six seconds, at an elevation of 27 feet (8^m2), is moored about 5 cables northward of Sgeir Inoe.

35 Chart 2475.

Tidal streams.—From Sound of Harris to East Loch Tarbert, the north-east-going stream begins — 0340 Stornoway (+ 0430 Dover), the south-west-going stream begins + 0245 Stornoway (— 0130 Dover; the spring rate in each direction is off the salient points about

40 2 knots, but the streams are very weak in the lochs between the points.

See Table of Tidal streams for station K05 in Tidal Streams European Waters, Part II, 1948.

Fishing.—The herring fishery begins in May, and lasts nearly till the end of September.

45 Charts 2474, 2475.

Islands and dangers.—There are no dangers off-lying the coast between Renish point and Lingarabay island, $1\frac{3}{4}$ miles north-eastward.

Lingarabay island, 102 feet (31^m1) high, lies close offshore, in the entrance to Lingara bay, where boats find shelter; the channel between this island and Harris is encumbered with above-water and sunken rocks. About 4 cables north-eastward of Lingarabay island a reef extends about $1\frac{1}{2}$ cables south-eastward from the coast.

Finsbay island, about $1\frac{1}{2}$ miles east-north-eastward of Lingarabay island and 2 cables offshore, is a small green-topped island, 57 feet

Charts 2474, 2475.

(17^m4) high, with a black cliffy coast. Its south-eastern extremity is steep-to, but one cable north-eastward of it is a rock, with a depth of one fathom (1^m8) over it, and others, which dry, lie between this rock and the island. About 3 cables north-eastward of Fiinsay island (*Lat.* 57° 46' N., *Long.* 6° 54' W.), and separated from Rubha Quidnish by a boat channel, is a group of rocks and islets; Eilean Quidnish, the highest, 5 cables south-westward of Rubha Quidnish, is 42 feet (12^m8) high; the southernmost rock dries 2 feet (0^m6). The south-eastern extremity of Ard Manish, bearing about 033° and open south-eastward of Rublia 10 Quidnish, leads south-eastward of all the rocks off-lying this part of the coast.

Several rocks lie off Ard Manish; Allister rock, one cable southward of the western part of this promontory, dries 4 feet (1^m2). Earr Manish, lying 2 cables eastward of the eastern extremity of Ard Manish, 15 is the outer rock of a group, and dries 6 feet (1^m8); there are several rocks between it and the coast.

Charts 2905, 2475.

Nun rock, about 2½ cables southward of Rubha Bocaig and 1½ cables offshore, has a depth of 2 feet (0^m6) over it. Eilean na Sgaite (page 433), 20 bearing 008° and open eastward of Sgeir Bocaig, an above-water rock, three-quarters of a cable north-north-eastward of Rublia Bocaig, leads close eastward of Nun rock.

Chart 2642.

Loch Rodel.—Loch Rodel, on the north-eastern side of Renish point (page 384), is about 2 cables wide, with deep water in the fairway, but a shoal bank extends a short distance from both sides of this inlet.

On the north-eastern side of the entrance, well sheltered by the islets of Vallay which form the north-eastern entrance point of the loch, is a small deep-water basin, the principal entrance to which is 30 north-eastward of those islets, but it is across a rocky barrier which nearly dries, and the bottom being very uneven, it is dangerous with any swell. An entrance, which dries, from Loch Rodel, passes northward of the islets; the bottom here is smooth, and though there is less water, there is also less swell than in the eastern entrance. 35

There is an artificial harbour which dries, in the north-western part of the basin.

Duncan rock, about 3 cables northward of Renish point and half a cable from the south-western shore of the loch, has a depth of about 2 feet (0^m6) over it. A black projecting point at the head of the loch 40 in line with Strondeval (page 384), bearing 333°, leads north-eastward of this rock.

With offshore winds a vessel can anchor about 5 cables within the entrance to the loch with the black projecting point at the head of the loch in line with Strondeval, bearing 333°, in depths of from 10 to 45 12 fathoms (18^m3 to 21^m9), but a heavy sea sets in with gales from between south-east and west-south-west. Small vessels go right up to the head of the bay on the north-western side, where they lie in safety.

Rodel house stands near the north-eastern shore of the bay, and on rising ground above the house is St. Clement's church, with a square 50 tower. Here and along the road running north-westward to The Obbe, in Sound of Harris (page 385), are almost the only trees in Harris.

There is regular communication by sea with Loch Maddy and Kyle of Lochalsh.

Charts 2474, 2475.

Loch Finsbay.—Dangers.—Loch Finsbay is entered between Finsbay island and Rubha Quidnish, 8 cables north-eastward; it affords anchorage to moderate-sized vessels. This loch is open south-eastward, but scarcely any sea comes home, and the holding ground is good. A projecting promontory at the head of the loch divides it into two arms.

Eilean Druim an Tolla (*Lat. 57° 46' N., Long. 6° 59' W.*), about $4\frac{1}{2}$ cables north-westward of Finsbay island and close off the south-western shore of the loch, with which it is connected by a reef that dries, has a rock, which dries about 6 feet (1^m8), lying half a cable southward of it. Sgeir na Acarsaid, lying 3 cables north-eastward of Eilean Druim an Tolla and about one cable from the north-eastern shore, dries 5 feet (1^m5); there is no channel north-eastward of this rock, and foul ground extends about half a cable from the eastern extremity of the promontory at the head of the loch, thus reducing the width of the channel into the inner anchorage to 140 yards (128^m0). There are many other rocks in Loch Finsbay.

Anchorages.—Directions.—The anchorage for a moderate-sized vessel is in mid-channel, north-eastward of Eilean Druim an Tolla, in a depth of 8 fathoms (14^m6); the channel leading to this anchorage is in one place only one cable wide.

A small vessel can obtain good anchorage, sheltered from all winds, in the north-eastern arm of the head of the loch, in mid-channel, about one cable above the eastern extremity of the promontory at the head of the loch, in a depth of 3 fathoms (5^m5), mud.

Loch Finsbay, which is the only one of the East bays of Harris a vessel without local knowledge could attempt with safety; it is not readily distinguished in misty weather. Finsbay island, on northerly bearings, shows black cliffs and a flat green top, and Eilean Quidnish has a peaked appearance. A vessel should steer close to Eilean Quidnish to avoid the rocks off Finsbay island. A hill, about 200 feet (61^m0) high, showing a steep face eastward, bearing 305° , and open northward of Eilean Druim an Tolla, leads in until near Eilean Druim an Tolla, when the vessel should anchor one cable eastward of that islet, in a depth of 8 fathoms (14^m6).

Loch Flodabay.—Loch Flodabay is entered between Rubha Quidnish and Ard Manish about one mile north-north-eastward; it is an open bay, encumbered with sunken rocks, and with no safe anchorage, but there is a good boat harbour in a creek at its head. The Free church and manse are on the north-eastern side of the head of the loch; they are the only slated buildings visible between Rodel and Tarbert, and can only be seen from certain directions.

Chart 2475.

Loch Geocrab.—Anchorage.—Loch Geocrab, which is entered north-eastward of Ard Manish, affords anchorage in summer to small vessels; a projecting promontory divides the head of this inlet into two arms; Glas sgeir (*Lat. 57° 48' N., Long. 6° 51' W.*) is a group of islets extending south-eastward from the southern end of this promontory.

A vessel can anchor northward of Glas sgeir, in a depth of 8 fathoms (14^m6). Loch Beacarvik, the western arm at the head of Loch Geocrab, is an almost landlocked hasin, in the narrow entrance to which are two rocks, but inside there is a clear space with a depth of 5 fathoms (9^m1).

Chart 2475.

Loch Stockinish.—Anchorage.—Dangers.—Loch Stockinish is entered between Ard Mòr, a promontory, 87 feet (26^m5) high, 8 cables north-north-eastward of Ard Manish, and Stockinish island, 138 feet (42^m1) high, $5\frac{1}{2}$ cables eastward. It is very difficult of access, but there is a good harbour in its inner part, completely sheltered, $2\frac{1}{2}$ cables wide, with a depth of 12 fathoms (21^m9), mud. Stockinish island, and numerous islets and rocks block the fairway, and local knowledge is essential.

Caolas Mòr, the channel westward of Stockinish island, is narrow, 10 intricate, and encumbered with rocks, of which only one, Du sgeir Mòr, about 3 cables east-south-eastward of Ard Mòr, is above water. Rocks, which dry, extend about one cable south-eastward from, and 2 cables south-westward and north-westward from Du sgeir Mòr. A shoal, with a depth of $2\frac{1}{2}$ fathoms (4^m1) over it, lies about $2\frac{1}{2}$ cables 15 south-eastward of Du sgeir Mòr. Close westward of the southern part of Stockinish island are several islets, and north-westward and northward of Eilean Leasait (*Lat. $57^{\circ} 48' N.$, Long. $6^{\circ} 50' W.$*), the northernmost, are several rocks which dry. Rocks, which dry, extend about $2\frac{1}{2}$ cables from the eastern side of Ard Mòr. 20

Caolas Beag, the channel north-eastward of Stockinish island, is the best channel for small vessels; it has a least width of 90 feet (27^m4), with a depth of 2 fathoms (3^m7). There are no rocks, except one off the south-eastern extremity of Stockinish island.

Am Maoladh is a peninsula on the western side of the loch, about 25 8 cables north-north-eastward of the southern extremity of Ard Mòr. A rock, called Bo of the Den, with a depth of 6 feet (1^m8) over it, lies about half a cable eastward of it. Caolas Beag kept open leads north-eastward of Bo of the Den.

Hard rock, about $7\frac{1}{2}$ cables north-north-westward of Am Maoladh 30 and about half a cable from the north-eastern shore of the loch, dries 6 feet (1^m8). At low water or with much sea, all the outer rocks on the western side of the southern part of Loch Stockinish show, or are marked by breakers.

The best anchorage is in mid-channel, abreast Hard rock, or a little 35 above it, in depths of from 9 to 12 fathoms (16^m5 to 21^m9).

Loch Grosebay.—Dangers.—Anchorage.—Loch Grosebay is entered between Rubha Clucr (page 427) and the southern extremity of Reibinish peninsula, $1\frac{1}{2}$ miles north-eastward. It affords safe anchor- 40 age inside some islets at the head of the loch.

Cairam, an islet, 8 cables north-north-eastward of Rubha Cluer and about $2\frac{1}{2}$ cables from the south-western shore of the loch, is 71 feet (21^m6) high. Glas sgeir, a smaller islet, lies close north-north-westward of Cairam. Patrick's Bo, about 2 cables north-westward of Glas sgeir and about one cable from the south-western shore, dries 45 5 feet (1^m5). John rock, about 4 cables north-westward of Glas sgeir and half a cable from the north-eastern shore, dries 10 feet (3^m0). Sgeir a Chais, about 2 cables from the head of the loch and half a cable from the north-eastern shore, is a group of above-water rocks; half a cable south-westward of Sgeir a Chais are two rocks, which dry 5 feet 50 (1^m5), leaving a channel one cable wide between them and the south-western shore.

Loch na h Uamha, on the western side of the north-eastern entrance point of Loch Grosebay, is unsafe for anchorage. Loch Scadabay,

Chart 2475.

which is entered 4 cables north-westward of the entrance to Loch na h Uamha, though only half a cable wide, is a good boat harbour when above the narrows; there are depths of 7 feet (2^m1) in the narrows and 5 boat harbour.

A vessel can obtain anchorage in Loch Grosebay, above Sgeir a Chais, in a depth of 5 fathoms (9^m1), mud. A vessel proceeding to the anchorage at the head of the loch should keep close to the north-eastern side of the loch until $3\frac{1}{4}$ cables north-westward of Glas sgeir, 10 whence she should steer to pass close south-westward of Sgeir a Chais and thence to the anchorage.

Chart 2905.

EAST LOCH TARBERT.—East Loch Tarbert is entered between Rubha Bocaig (page 427), and Rubha Crago (*Lat. $57^{\circ} 53' N.$, Long. $6^{\circ} 40' W.$*), $3\frac{1}{4}$ miles north-eastward. It is the most frequented port between Loch Maddy and Stornoway, and is sufficiently large and deep for vessels of any size, with good anchorage. It may be safely navigated during daylight, though there are many rocks to be avoided.

The country round East Loch Tarbert is rugged and desolate; the 20 sides of the hills north-eastward are almost continuous patches of bare rock, and the land south-westward presents a succession of small rocky hills scantily covered with peat.

The island of Scalpay and numerous islets and rocks lie in the entrance to the loch. There are two main entrances, Braigh Mòr, 25 south-westward of Scalpay, and Sound of Scalpay, the comparatively narrow channel north-eastward of that island; both channels are deep, but in Braigh Mòr the bottom is very uneven, and though mainly mud, is rocky in many places.

Caution.—Owing to the imperfect nature of the survey, chart 30 2905 must be used with caution.

Light.—**Fog signal.**—**Radiobeacon.**—**Storm signals.**—A light is exhibited, at an elevation of 130 feet (39^m6), from a white tower, with red bands, 100 feet (30^m5) in height, situated on the summit of Eilean Glas, the south-eastern extremity of Scalpay. *See* view facing page 35 424. A radiobeacon is situated at, and a fog signal sounded from, Eilean Glas light-tower.

Storm signals are displayed. *See* page 6.

Braigh Mòr.—**Islands and dangers.**—Rubha Bocaig is not easily identified; a bank, with depths of less than 3 fathoms (5^m5) over it, on 40 which are several rocks which dry, extends about $1\frac{1}{2}$ cables south-eastward and $1\frac{1}{2}$ cables north-eastward from it.

Bogha Bocaig, about $3\frac{1}{2}$ cables east-south-eastward of Rubha Bocaig, has a depth of 6 feet (1^m8) over it; a shoal, with a depth of 31 feet (9^m4) over it, lies close north-north-eastward of Bogha Bocaig.

45 Ship rock, about 3 cables northward of Rubha Bocaig and about three-quarters of a cable offshore, dries.

Charts 2905, 2475.

The hill with a notched appearance on the fall of Roneval (page 384) open southward of Rubha Cluer (page 427) leads one cable southward of Bogha Bocaig (*see* view on chart 2905). The summit of Scotasay (page 434) (*Lat. $57^{\circ} 53' N.$, Long. $6^{\circ} 45' W.$*), bearing 339° , and open eastward of the Glorigs (page 433), leads $3\frac{1}{4}$ cables eastward of Bogha Bocaig. The eastern extremity of Eilean na Sgaithe (page 433) in line

Charts 2905, 2475.

with the western extremity of Dun Corr Mòr (see below), bearing 353° , leads between Bogha Bocaig and the dangers eastward of Rubha Bocaig
Chart 2905.

Sgeir Griadach, about $1\frac{3}{4}$ miles east-north-eastward of Rubha Bocaig, 5 dries 5 feet (1^m5). A bank, with depths of less than 5 fathoms (9^m1) over it, extends about one cable south-south-eastward, and a shoal, with a depth of 22 feet (6^m7) over it, lies about half a cable westward of Sgeir Griadach. Sgeir a Ghobha (page 434), in line with Eilean Glas light-tower, bearing 052° , leads south-eastward of Sgeir Griadach. 10 The summit of Scatasay, bearing 319° , and just open south-westward of Rossay (page 434), or the Free church, which is situated $1\frac{3}{4}$ miles north-westward of the north-western extremity of Scatasay, bearing 318° and open south-westward of Scatasay, lead about one cable and $3\frac{1}{2}$ cables, respectively, south-westward of the 22-foot (6^m7) 15 shoal.

Bogha Lag na Laire, about 3 cables south-south-eastward of the southern extremity of Scalpay, consists of two detached heads; the southern one has a depth of 2 feet (0^m6) over it, and the northern a depth of 8 feet (2^m4). 20

Charts 2905, 1794.

The high land of Rubh' Uisenish (page 427), bearing 041° and open south-eastward of Eilean Glas light-tower (see view on chart 2905), leads south-eastward of Bogha Lag na Laire; the light-tower in line with the extremity of Rubh' Uisenish, bearing 049° , leads over or 25 very close to this rock; and Sgeir a Ghobha in line with Eilean Glas light-tower, bearing 052° , leads about half a cable north-westward of Bogha Lag na Laire.

Chart 2905.

The Glorigs, a group of islets and rocks on the south-western side 30 of Braigh Mòr, extend about $1\frac{1}{4}$ miles north-north-westward from a position $5\frac{1}{2}$ cables north-north-eastward of Rubha Bocaig; these islets and rocks lie within 5 cables of the south-western shore of the loch; only the islets and rocks bordering the channel will be described.

Eilean na Sgaite, the southernmost of this group, is small, green, 35 conical, and 41 feet (12^m5) high; foul ground, which dries, extends about one cable southward from it. Sgeir an Leum Beag and Sgeir an Leum Mòr, about $4\frac{1}{2}$ cables north-north-eastward of Eilean na Sgaite (*Lat.* $57^{\circ} 50' N.$, *Long.* $6^{\circ} 44' W.$), are 15 and 26 feet (4^m6 and 7^m9) high, respectively; a bank, with depths of less than 5 fathoms (9^m1) 40 over it, extends about three-quarters of a cable eastward from Sgeir an Leum Beag and about the same distance northward from Sgeir an Leum Mòr. Dun Corr Beag and Dun Corr Mòr lie about 2 and $2\frac{1}{2}$ cables north-north-westward, respectively, of Sgeir an Leum Mòr; Dun Corr Mòr, the north-eastermost islet of the group, is 18 feet (5^m5) high, 45 and has a peaked appearance on northerly bearings; a bank, with depths of less than 5 fathoms (9^m1) over it, extends three-quarters of a cable north-north-eastward from it. A shoal, with a depth of 33 feet (10^m1) over it, lies in the track through Braigh Mòr, about $2\frac{1}{2}$ cables eastward of Dun Corr Beag. Glorig Iosal, about $2\frac{1}{2}$ cables west-north-westward of Dun Corr Mòr, is 14 feet (4^m3) high; a shoal, with a depth of 23 feet (7^m0) over it, lies about $1\frac{1}{2}$ cables eastward of Glorig Iosal. Glorig Dhubh, $1\frac{1}{2}$ cables west-north-westward of Glorig Iosal, is 51 feet (15^m5) high. 50

Charts 2508, 2635.

Chart 2905.

Several shoals, with a least depth of $4\frac{1}{2}$ fathoms ($8^{\text{m}}2$) over them, lie close together, about 3 cables north-eastward of Dun Corr Mór.

Scalpay has an irregular outline, and its western half especially is deeply indented. The eastern side of the island rises to Beinn Scoravick, 334 feet ($101^{\text{m}}8$) high. Eilean Glas is a small, steep-to, rocky peninsula forming the south-eastern extremity of Scalpay, with which it is connected by a narrow isthmus. Glebe rock, about half a cable southward of Eilean Glas, has a least depth of 2 feet ($0^{\text{m}}6$) over it. Sgeir Ghobha, about $3\frac{1}{2}$ cables south-westward of Eilean Glas light-tower and half a cable from the south-eastern side of Scalpay, is a black rock, 9 feet ($2^{\text{m}}7$) high.

Between Meall Challibost, a headland 87 feet ($26^{\text{m}}5$) high, the southern extremity of Scalpay, and Hamarsay, an island, 109 feet ($33^{\text{m}}2$) high, $9\frac{1}{2}$ cables west-north-westward, there are several islets and rocks. The south-western side of Hamarsay is bold, but rocks, which dry in places 6 feet ($1^{\text{m}}8$), extend about 70 yards ($64^{\text{m}}0$) northward from its north-western and northern points.

Rossay, the south-eastern extremity of which is situated about 2 cables north-westward of Hamarsay, is 128 feet ($39^{\text{m}}0$) high. Several islets lie northward of Rossay, and are nearly joined to Rossay and to each other at low water. Sgon Rossay, close off the southern end of Rossay, dries 10 feet ($3^{\text{m}}0$). Sgeir Braigh Mòr, on the north-eastern side of the fairway, about $3\frac{1}{2}$ cables west-north-westward of the western extremity of Rossay, dries 11 feet ($3^{\text{m}}4$).

The western extremity of Scotasay (*Lat. $57^{\circ} 53' N.$, Long. $6^{\circ} 45' W.$*) in line with the Free church, bearing 315° , leads close north-eastward; the western extremity of Stiughay, an island close northward of Rossay, in line with the schoolhouse on the north-eastern shore of Ob Ceann a Gharaidh, $9\frac{1}{2}$ cables north-north-eastward, bearing 013° , leads close eastward; the Free church, bearing 318° and just open south-westward of Sgeir Ghlas, (*see page 435 and view facing page 425*), leads close south-westward; and Sgeir Reamhar (*page 435*), in line with the schoolhouse on the north-eastern shore of Ob Ceann a Gharaidh, bearing 020° , leads westward of Sgeir Braigh Mòr.

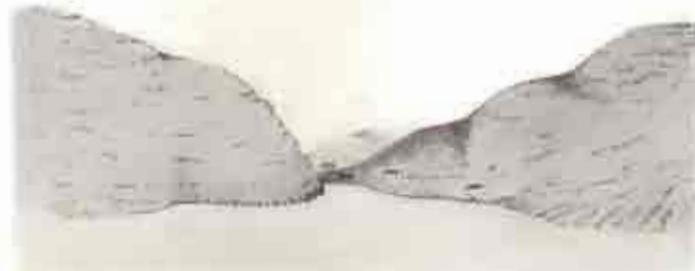
Bogha Ruadh, on the south-western side of Braigh Mòr, 4 cables north-north-westward of Glorig Dhubh, is nearly awash and covered with red seaweed. The south-western extremity of Eilean Arderanish (*page 435*), bearing 305° , and open north-eastward of Eilean a Ghille-bheid, $3\frac{1}{2}$ cables south-eastward of Eilean Arderanish, leads about three-quarters of a cable north-eastward of Bogha Ruadh. (*See view facing page 425*). Eileanan a Ghille-bheid are two islets; the south-eastern one, 23 feet ($7^{\text{m}}0$) high, is covered with grass, the north-western one, 31 feet ($9^{\text{m}}4$) high, with heather; a rock, which dries one foot ($0^{\text{m}}3$), lies half a cable eastward of the south-eastern islet.

Scotasay is 189 feet ($57^{\text{m}}6$) high, and covered with heather; it occupies a central position in the loch, Braigh Mòr and Sound of Scalpay uniting off its northern end, and north-westward of it is the anchorage off the village of Tarbert. Scotasay has a small boat harbour in its south-western side.

Eilean Dubh, situated on the north-eastern side of Braigh Mòr, about $1\frac{1}{2}$ cables eastward of the southern extremity of Scotasay, is 45 feet ($13^{\text{m}}7$) high; a rock, 8 feet ($2^{\text{m}}4$) high, lies about three-quarters of a cable southward of its south-eastern extremity, and a rock, which



To face page 436.



Manse, Fier
Craobhaig Caenlich
Manse bearing 304° and just open north-easterly of Craobhaig
(Original dated 1863)



Kenmore, bearing 338° and open eastward of the western side of Loch Seaforth.
(Original dated 1863.)

Chart 2905.

dries, lies about half a cable west-north-westward of its north-western extremity. Sgeir Ghlas, about $2\frac{1}{2}$ cables west-north-westward of the southern extremity of Scotasay and one cable from its south-western side, is 15 feet (4^m6) high, with a grassy summit. There are several 5 rocks, other than those described above, around the coast of Scotasay, but all are above water.

The channel south-eastward of Scotasay (*Lat. $57^{\circ} 53'$ N., Long. $6^{\circ} 45'$ W.*) is deep and free from dangers in the fairway. Sgeir Reamhar, on the south-eastern side of the fairway, $1\frac{1}{2}$ cables west-north-westward 10 of the northern extremity of Stiughay, dries about 13 feet (4^m0). Staë a Chaoruinn, on the north-western side of the fairway, about $2\frac{1}{2}$ cables north-eastward of Eilean Dubh, is above water.

Eilean Arderanish, $1\frac{1}{2}$ miles north-westward of Glorig Dhubh, is separated from the south-western shore of the loch by a deep channel 15 one cable wide; the islet is 38 feet (11^m6) high, and covered with heather; rocks, which dry one foot (0^m3), extend three-quarters of a cable east-south-eastward from its south-eastern end, and a bank, with depths of less than 5 fathoms (9^m1) over it, extend about three-quarters of a cable from its north-eastern side. Mid Sound rock, about 20 $3\frac{1}{2}$ cables north-eastward of Eilean Arderanish and about $3\frac{1}{2}$ cables from the western side of Scotasay, has a depth of 8 feet (2^m4) over it.

Craobhag, a vertical cliff on the southern side of the entrance to the harbour at Tarbert, about $1\frac{1}{2}$ miles north-north-westward of Eilean Arderanish, bearing 318° and just open north-eastward of Eilean a 25 Gheoidh (page 436), leads close north-eastward; the northern extremity of Eilean Arderanish in line with Meavag mill, $9\frac{1}{2}$ cables west-south-westward, bearing 251° , leads southward; and the Free church, bearing 325° and just open south-westward of Eilean a Gheoidh, leads close 30 south-westward, of Mid Sound rock.

Islets and dangers at head of East Loch Tarbert.—Paterson rock, on the south-western side of the head of East Loch Tarbert, about $4\frac{1}{2}$ cables northward of Eilean Arderanish, dries one foot (0^m3); a shoal, with a depth of 4 fathoms (7^m3) over it, lies about one cable southward of Paterson rock. Sgeir Urgha (page 436), bearing 046° 35 and just open south-eastward of Cuidsgeir (*see below*), leads close south-eastward, and the Free church, bearing 324° and open north-eastward of Eilean a Gheoidh, leads north-eastward, of Paterson rock.

Cuidsgeir, about 6 feet (1^m8) high, is a bare islet, situated $5\frac{1}{2}$ cables west-north-westward of the western extremity of Scotasay. A bank, 40 with depths of less than 5 fathoms (9^m1) over it, extends three-quarters of a cable south-eastward, and about 2 cables north-north-westward from Cuidsgeir; on the latter bank are several rocks, which dry, one of which, named Little Whiting rock, dries 6 feet (1^m8), with a shoal, with a depth of 22 feet (6^m7) over it, about half a cable northward of it. 45 A patch, with a depth of 25 feet (7^m6) over it, lies about half a cable south-westward of Cuidsgeir.

The manse at the head of the loch, $4\frac{1}{2}$ cables north-westward of Craobhag, bearing 304° and just open north-eastward of Craobhag, leads close north-eastward of the 22-foot (6^m7) shoal described above 50 (*see view facing this page*).

Eileanan Diraclett (*Lat. $57^{\circ} 53'$ N., Long. $6^{\circ} 47'$ W.*), on the south-western side of the head of the loch, $5\frac{1}{2}$ cables northward of Eilean Arderanish, are a group of islets extending half a mile north-westward,

Chart 2905.

and connected with each other and with the south-western shore by a reef that dries. Eilean Mòr, the largest of this group, is 66 feet (20^m1) high, and Eilean a Gheoidh, the easternmost, is a steep rocky islet, 23 feet (7^m0) high, and bold on its north-eastern side.

Sgeir Urgha, about 5½ cables north-north-westward of the northern side of Scatasay and three-quarters of a cable from the north-eastern side of the loch, is 3 feet (0^m9) high; foul ground extends about half a cable south-south-eastward from its southern end. There is a narrow channel, with a depth of 6 fathoms (11^m0), north-eastward of Sgeir Urgha. Oban rocks, about 8½ cables west-north-westward of Sgeir Urgha and one cable from the north-eastern shore, dry 4 feet (1^m2).

The Free church, bearing 289° and just open southward of Rubha Dubh, a promontory on the north-eastern side of the loch, 5½ cables from its head, leads close southward of Oban rocks.

Rubha Dubh is so steep-to that vessels sometimes lie alongside it.

Sgeir Bhuidhe, about 2 cables south-eastward of Craobhag and half a cable from the south-western shore of the head of the loch, is above water; the coastal reef extends a short distance eastward from it.

20 Islets and dangers in Sound of Scalpay.—Greinem, about 4½ cables north-north-westward of Eilean Glas light-tower and close off the eastern side of Scalpay, is an islet, connected with the coast by a reef that dries. Sgeir Mòr, about 1½ cables northward of Greinem in the fairway of the entrance to Scoravick, a small, open, rocky bight, is 6 feet (1^m8) high. Bell rock, one cable northward of Sgeir Mòr, dries 5 feet (1^m5). From the point on Scalpay, westward of Bell rock, some rocks extend about three-quarters of a cable northward. A shoal, with a depth of 5 fathoms (9^m1) over it, lies about 3½ cables north-north-westward of Sgeir Mòr, and 1½ cables from the north-eastern side of Scalpay. Bogha Ard Riabhach, about 4½ cables north-westward of Sgeir Mòr and three-quarters of a cable from Ard Riabhach, a promontory at the north-eastern end of Scalpay, dries 2 feet (0^m6).

Sound of Scalpay kept open, bearing 284°, leads northward of Bogha Ard Riabhach.

35 A rock, with a depth of less than 6 feet (1^m8) over it, lies about half a cable northward of Bulla na h Acairseid Fhalaich (*Lat. 57° 52' N., Long. 6° 40' W.*), a point on the northern side of Scalpay, about 3½ cables westward of Ard Riabhach. Elliot rock, with a depth of less than 6 feet (1^m8) over it, lies one cable farther northward.

40 The southern shore of the channel, westward of Elliot rock, is bold. The northern shore is also bold, except off a point 7½ cables westward of Rubha Crago, the northern entrance point of the sound, where rocks extend about three-quarters of a cable east-south-eastward.

45 Submarine cables.—Beacons.—Submarine telegraph cables, the direction of which are indicated on the chart, are laid across the Sound of Scalpay; the landing places of the cables are marked by beacons. See page 7.

Tidal streams.—The stream begins to run north-westward into the loch through Braigh Mòr, then northward between Scalpay and Scatasay, and eastward out of the loch through Sound of Scalpay, — 0525 Stornoway (+ 0245 Dover); the stream begins to run in the opposite directions, westward into the loch through the Sound of Scalpay southward between Scalpay and Scatasay, and south-eastward

Chart 2905.

out of the loch through Braigh Mòr, + 0100 Stornoway (— 0315 Dover) the spring rate in each direction in Sound of Scalpay is from 1·2 to 2 knots but less elsewhere. The streams are imperceptible in the loch above Scotasay.

5

Anchorages.—Dangers.—There are several small bays on the south-western shore of East Loch Tarbert, inside the Glorigs, where good anchorage can be obtained, but the rocks which dry are so numerous that local knowledge is necessary.

South harbour, on the south-western side of Scalpay, is available 10 for large vessels; it is entered between Hamarsay and Rossay, but half a mile north-eastward of Hamarsay the harbour turns northward, and becomes available for small vessels and boats only.

From the western extremity of Or eilean, situated on the south-eastern side of South harbour, about 2½ cables eastward of the northern 15 extremity of Hamarsay, foul ground, which dries 3 feet (0^m9), extends about three-quarters of a cable north-westward, and the south-eastern side of the harbour should not be approached within that distance. The north-western side of the harbour is free from dangers, until near Raarem, an islet 50 feet (15^m2) high, 4½ cables north-eastward of the 20 northern extremity of Hamarsay, from the southern end of which islet foul ground, which dries 4 feet (1^m2), extends about three-quarters of a cable south-south-eastward.

Scalpay house, with two broad chimneys, on rising ground at the head of the harbour, bearing 338° and just open eastward of the south-western shore, leads eastward of the foul ground south-south-eastward 25 of Raarem (*Lat. 57° 52' N., Long. 6° 42' W.*).

Boundary rock, about 1½ cables north-eastward of the south-eastern extremity of Raarem and about three-quarters of a cable from the north-eastern shore of the harbour, has a depth of 3 feet (0^m9) over it; 30 only vessels with local knowledge should proceed above Boundary rock.

North harbour, a bight at the north-western end of Scalpay, is used as a fishing station, but it is small, with depths of from 6 to 18 feet (1^m8 to 5^m5), and the available anchorage space is very limited; there is anchorage outside the harbour, but the holding ground is not 35 good. There is a pier on the southern side of the entrance to North harbour.

MacQueens rock, about 2 cables westward of the southern entrance point of North harbour, is 3 feet (0^m9) high; a reef extends about three-quarters of a cable eastward from it.

40

There is a post and telegraph office at the village which lies between South and North harbours; small quantities of provisions can be obtained here.

Loch Ceann Dibig, on the south-western side of East Loch Tarbert, is entered between Eilean Arderanish and Aird Diracleit, 6½ cables 45 north-westward; it affords good anchorage in a clear space about a quarter of a mile in width, but there are numerous rocks in this loch, most of which dry.

A vessel entering Loch Ceann Dibig should pass about one cable northward of Eilean Arderanish, and then steer with the northern 50 extremity of Eilean Arderanish in line with the southern extremity of Scotasay, bearing about 096°, astern; when about 2 cables from the western shore, and Meavag mill bears 198°, she can anchor in a depth of 8 fathoms (14^m6), mud.

Chart 2905.

The best anchorage at the head of East Loch Tarbert is in mid-channel, about $1\frac{1}{2}$ cables north-north-eastward of Sgeir Bhuidhe, in a depth of 9 fathoms (16 m 5), mud.

- 5 Larger vessels should anchor south-eastward of Rubha Dubh, in a depth of 14 fathoms (25 m 6), mud, where there is never any sea. It was reported, in 1953, that the holding ground in these anchorages was poor.

Small vessels go up abreast the Free church, where there are depths of from 2 to 6 fathoms (3 m 7 to 11 m 0).

- 10 Within the Free church (*Lat. 57° 54' N., Long. 6° 48' W.*) the loch narrows and shoals rapidly towards its head.

Piers.—On each side near the head of East Loch Tarbert is a small pier, with a depth of 10 feet (3 m 0) alongside at high water, and there is also a pier with a T-head on the north-eastern shore three-quarters of a cable westward of the Free church.

A light is occasionally exhibited, at an elevation of 15 feet (4 m 6), from a post, 9 feet (2 m 7) in height, situated on the head of the pier with a T-head.

Charts 2905, 2474, 2475.

- 20 **Directions.**—*Braig Mòr.*—From southward the mountains of Harris (page 393) indicate the position of East Loch Tarbert; Eilean Glas light-tower is also a good guide.

Charts 2905, 2475.

A vessel approaching from southward and intending to enter through 25 Braig Mòr should give the southern extremity of Reibinish peninsula (page 431) a berth of at least 7 cables so as to avoid Nun rock and Bogha Bocaig; the clearing marks southward and eastward of this latter shoal are described on page 433.

Chart 2905.

- 30 After passing eastward of Bogha Bocaig a vessel should follow the track indicated by a pecked line on chart 2905, passing about $2\frac{1}{2}$ cables eastward of Dun Corr Beag and Dun Corr Mòr, but it should be noted that this track leads over the 5½-fathom (10 m 1) shoal situated $2\frac{1}{2}$ cables eastward of Dun Corr Beag. After passing eastward of Dun Corr Mòr

35 the track leads about 2 cables south-westward of Sgeir Braigh Mòr, and about one cable south-westward of Sgeir Ghlas. When Sgeir Ghlas bears about 070° the track leads in about mid-channel between Mid Sound rock and Scotasay, and about 2 cables north-eastward of Cuidsgeir and about $1\frac{1}{2}$ cables eastward of Little Whiting rock, until the 40 manse at the head of the loch bears about 299° and is open north-eastward of Craobhag, whence the vessel can steer for the desired anchorage.

Charts 2905, 2475.

A vessel approaching from north-eastward should give Eilean Glas 45 light-tower a berth of 2 cables to avoid Glebe rock, and steer to pass south-eastward of Bogha Lag na Laire, the clearing marks for which are given on page 433. When the Free church (*Lat. 57° 54' N., Long. 6° 48' W.*) bears 318° and is open south-westward of Sgeir Ghlas, she should follow the track indicated by a pecked line on chart 2905

50 and proceed as directed above.

Chart 2905.

If the Free church is obscured the summit of Scotasay, bearing 319° and just open south-westward of Rossay, leads about one cable south-westward of the 3½-fathom (6 m 4) shoal westward of Sgeir

Charts 2508, 2635.

Chart 2905.

Griadach. After passing south-westward of Sgeir Griadach the vessel should proceed as directed above.

To obtain temporary shelter South harbour, or the anchorage off its entrance, is convenient. A vessel should steer to pass in mid-channel between Hamarsay and Rossay, and anchor within these islands, in depths of from 12 to 13 fathoms (21^m9 to 23^m8), or proceed from 2 to 3 cables farther eastward, and anchor, in depths of from 10 to 11 fathoms (18^m3 to 20^m1), just inside the entrance to South harbour, giving the southern entrance point a good berth. 10

Charts 2905, 1794.

Sound of Scalpay.—The fairway through Sound of Scalpay has depths of from 8 to 16 fathoms (14^m6 to 29^m3), with a least width of about half a cable, and there are no dangers, with the exception of Elliot rock. 15

A vessel approaching from southward should, after passing eastward of Eilean Glas light-tower, give a good berth to the eastern and north-eastern sides of Scalpay, and not alter course westward until northward of Bogha Ard Riabhach when she should steer to pass about one cable southward of Rubha Crago (*Lat. $57^{\circ} 53' N.$, Long. $6^{\circ} 40' W.$*), so as to 20 pass northward of Elliot rock, and thence steer westward through the sound. When the northernmost islet of Eileanan a Ghilel-bheid bears 204° and is open north-westward of the north-western extremity of Scatasay, she should steer towards the Free church and for the desired anchorage. The north-eastern shore of the loch westward of Scalpay 25 is bold and free from dangers, with the exception of Sgeir Urgha and Oban rocks.

Tarbert.—See page 399.

Charts 1794, 2475.

COAST.—Loch Seafortb.—Loch Seaforth is entered between 30 Rubha Crago and Aird a Bhaigh, $2\frac{1}{2}$ miles north-eastward; it trends about $6\frac{1}{2}$ miles north-north-westward to Seaforth island, which occupies a central position in the loch, leaving a clear channel on either side. The loch then trends $3\frac{1}{2}$ miles north-north-eastward and thence $2\frac{1}{2}$ miles eastward to its head; this latter portion is known as Upper Loch 35 Seaforth. Loch Seaforth partly divides Harris from Lewis.

At about $2\frac{1}{2}$ miles northward of Rubha Crago the shores of the loch approach each other to within about half a mile, where the loch proper commences, the outer part forming a bay in which there are several rocks, above water and sunken. 40

The loch, one mile within the entrance of the loch proper, contracts to a width of $2\frac{1}{2}$ cables; in consequence of the high mountains on each side, the squalls above these narrows are extremely sudden and violent from unpredictable directions. The depths are considerable, until close to Seaforth island, and the nearest anchorage is in Loch 45 Maaruig, which is entered about $4\frac{1}{2}$ miles north-north-westward of Rubha Crago; the loch is not much used by shipping.

Loch Trollamarig is an inlet on the western side of Loch Seaforth just outside the entrance to the loch proper, but being open eastward is not a safe anchorage. 50

Aspect.—Aird a Bhaigh is 314 feet (95^m7) high, and is the termination of the peninsula separating Lochs Seaforth and Claidh. The coast between Aird a Bhaigh and Rubha Bridog, the eastern entrance

Charts 1794, 2475.

point of Loch Seaforth proper, about one mile westward, is indented by two small inlets.

Rubha Bridog (*Lat. 57° 55' N., Long. 6° 39' W.*) shows on northerly bearings as a cliff with a bare point of rock extending from it, and rises to a steep hill, 447 feet (136^m2) high. The eastern shore of the loch, from Rubha Bridog to abreast Seaforth island, is steep-to and nearly straight. For the first 3 miles the shore consists of rugged broken cliffs nearly 1,000 feet (304^m8) high in places. Kenmore, the only point that breaks the straight line of the eastern shore of the loch, is about 3 miles above the entrance, and opposite Loch Maaruig; it shows a remarkable isolated hill, 184 feet (56^m1) high, with a shepherd's hut on the lower neck connecting the point with the land behind it.

Tidal streams.—Between Eilean Glas and Sgeir Inoe the streams usually run about east-north-eastward and south-westward. At springs the east-north-east-going stream, rate about 2·5 knots, begins —0300 Stornoway (+0500 Dover); the south-west-going stream, which is rather weaker than the east-north-east-going stream, begins +0325 Stornoway (-0100 Dover). At neaps the stream usually begins to run in a north-north-easterly direction about —0530 Stornoway (+0300 Dover) and turns gradually eastward till about +0255 Stornoway (-0100 Dover), a period of about 8½ hours; it then changes and runs south-westward till about —0530 Stornoway (+0300 Dover), a period of about 4 hours.

25 *Note.*—The time difference of Stornoway on Dover is —0425 at springs and —0355 at neaps.

The streams are much affected by wind.

The streams are weak in the entrance to Loch Seaforth; the in-going stream begins about +0605 Stornoway (+0150 Dover), and the out-going stream begins about —0020 Stornoway (-0435 Dover). In the narrows on both sides of Seaforth island the in-going stream begins about —0610 Stornoway (+0200 Dover), and the out-going stream begins about —0015 Stornoway (-0430 Dover); the spring rate in each direction is about one knot.

35 In the narrows leading to Upper Loch Seaforth the in-going stream begins about —0410 Stornoway (+0400 Dover), and the out-going stream begins about +0030 Stornoway (-0345 Dover); the stream runs very strongly and is said to attain a rate of about 7 knots at springs in both directions.

40 The streams run strongly near Pender rock, off Aird a Bhaigh where there is turbulence dangerous to boats, but their directions and rates, and the times at which they begin, are not known.

Chart 2905.

Islets and dangers.—Squally Boe, about 5½ cables north-north-eastward of Rubha Crago and 1½ cables offshore, has a depth of 13 feet (4^m0) over it. Sgeir an Daimh, about 8½ cables north-north-eastward of Rubha Crago, is one foot (0^m3) high.

Charts 1794, 2475.

Eilean Mòr a Bhaigh, about 5 cables south-south-westward of Aird a Bhaigh, is 118 feet (36^m0) high, covered with grass, and steep-to. Eilean Dubh a Bhaigh, lying about 2 cables north-north-westward of Eilean Mòr a Bhaigh, is 70 feet (21^m3) high, and fringed with rocks which dry. A rock, with a depth of 6 feet (1^m8) over it, lies nearly in mid-channel between Eilean Mòr a Bhaigh and Eilean Duhh a Bhaigh.

Charts 1794, 2475.

Eilean Beag a Bhaigh, close offshore, close northward of Eilean Dubh a Bhaigh, is 20 feet ($6^{\text{m}}1$) high, and rocks extend half a cable northward from it.

Close southward of Aird a Bhaigh (*Lat. $57^{\circ} 55' N.$, Long. $6^{\circ} 37' W.$*) is Eilean Glas na h Acarsaid Fhalaich, 18 feet ($5^{\text{m}}5$) high. Pender rock, the south-easternmost of three rocks extending about 4 cables south-eastward from Aird a Bhaigh, has a depth of one foot ($0^{\text{m}}3$) over it; the next rock inshore of Pender rock has a depth of 6 feet ($1^{\text{m}}8$) over it, and the inner one dries 10 feet ($3^{\text{m}}0$). 10

Chart 2475.

The southern extremity of Eilean Mòr a Bhaigh in line with Uiseval, the summit of Beinn a Chaolais, $2\frac{1}{4}$ miles west-south-westward, bearing 248° , leads close southward of Pender rock. The upper part of the cliff of Palla na Maighdeann, which is situated on the south-western side of the head of Loch Claidh and is 600 feet ($182^{\text{m}}9$) high, falling vertically part of the way to Loch Claidh, bearing 330° and open north-eastward of the point on the south-western side of Loch Claidh, 6 cables north-north-westward of Aird a Bhaigh, leads close eastward of Pender rock. 15

Iolla Mòr, about $2\frac{1}{2}$ cables southward of Ard Caol, the western entrance point of Loch Seaforth proper, is awash. Kenmore, bearing about 338° , and open north-eastward of the south-western side of Loch Seaforth, leads close eastward of this danger, but a vessel should not make use of these clearing marks until northward of Sgeir an Daimh. 25
See view facing page 435.

Sgeir Hal, about 4 cables south-westward of Rubha Bridog, is a small bare rock, 6 feet ($1^{\text{m}}8$) high. Bo Ruadh, lying close southward of Sgeir Hal, dries one foot ($0^{\text{m}}3$). Bo Bhridag, lying close off Rubha Bridog, dries 5 feet ($1^{\text{m}}5$); the south-eastern entrance point of Loch Maaruig, bearing 321° and just open south-westward of the north-eastern side of Loch Seaforth, leads close south-westward of this rock. 30

Both shores of Loch Seaforth proper are free from dangers as far as Seaforth island, except for one rock, which dries 7 feet ($2^{\text{m}}1$), about 3 cables northward of Glas sgeir, a green islet, about $1\frac{1}{4}$ miles north-north-westward of Ard Caol and about 80 yards ($73^{\text{m}}2$) from the south-western shore of the loch. 35

Seaforth island is 706 feet ($215^{\text{m}}2$) high; there is a clear channel about one cable in width on either side, that on the western side having a least depth of $3\frac{1}{2}$ fathoms ($6^{\text{m}}4$), and that on the eastern side of 7 fathoms ($12^{\text{m}}8$). 40

Anchorages.—Loch Maaruig is the first good anchorage in Loch Seaforth for a vessel of moderate size; the best berth, after having well shut in the entrance to Loch Seaforth, is about one cable from the southern shore of Loch Maaruig. 45

Maaruig island (*Lat. $57^{\circ} 57' N.$, Long. $6^{\circ} 44' W.$*), about 4 cables west-north-westward of the southern entrance point of Loch Maaruig and close off the western shore of Loch Seaforth, is 33 feet ($10^{\text{m}}1$) high; a rock lies half a cable south-eastward of Maaruig island.

Small vessels anchor southward of Maaruig island, in depths of 50 from 7 to 8 fathoms ($12^{\text{m}}8$ to $14^{\text{m}}6$).

Maaruig point is a black cliffy promontory on the northern side of Loch Maaruig, about 4 cables westward of the southern entrance point, and within it is a well-sheltered basin, with a depth of 4 fathoms

Chart 2475.

(7^m3), mud. In places the shore of this basin is so steep that a vessel can moor to it and lie afloat; a rock lies about a quarter of a cable off the northern shore of this basin.

- 5 Aline lodge and adjacent buildings, situated on the western shore of Loch Seaforth, about 3½ cables west-north-westward of the north-western point of Seaforth island, are visible from the entrance of the loch. A vessel can anchor one cable off this lodge, in depths of from 7 to 10 fathoms (12^m8 to 18^m3), mud, but there is a more sheltered 10 position half a mile farther north-eastward, in a depth of 4 fathoms (7^m3).

Directions.—The position of Loch Seaforth may be identified by Eilean Glas light-tower and the remarkable conical mountain Toddun (page 393), which lies on the south-western side of the entrance to the 15 loch proper.

A vessel approaching from south-westward should steer to pass about half a mile south-eastward of Eilean Glas light-tower, and thence steer towards Sgeir Hal, passing about 2½ cables eastward of Sgeir an Daimh, which is visible, except at very high tides with smooth water. In 20 entering she should pass westward of Sgeir Hal, taking care to avoid Bo Ruadh and Iolla Mòr.

A vessel proceeding through the loch should keep in about mid-channel.

Chart 1794.

- 25 **Loch Claidh.**—**Aspect.**—Loch Claidh is entered between Aird a Bhaigh and Rubha Valamas Beag, 1½ miles east-south-eastward. This loch is not recommended as an anchorage, except for small vessels, or in case of emergency.

At the entrance to Loch Claidh the land is of moderate height, but 30 towards the head of the loch it becomes mountainous, with a deep glen crossing the peninsula separating Loch Claidh from Loch Seaforth; its shores have but few indentations, and are desolate in appearance.

Rubha Vlamas Beag (*Lat. 57° 54' N., Long. 6° 34' W.*), the eastern entrance point, is a long, low, irregular point, with a few hillocks 35 from 50 to 70 feet (15^m2 to 21^m3) high, terminating in a rock, 10 feet (3^m0) high.

The point on the south-western side of Loch Claidh, about 6 cables within the entrance, is steep, and shows well from just southward of the entrance to the loch. Palla na Maighdeann, on the south-western 40 side of the head of Loch Claidh, is described on page 441.

Tidal streams.—The tidal streams in Loch Claidh are imperceptible.

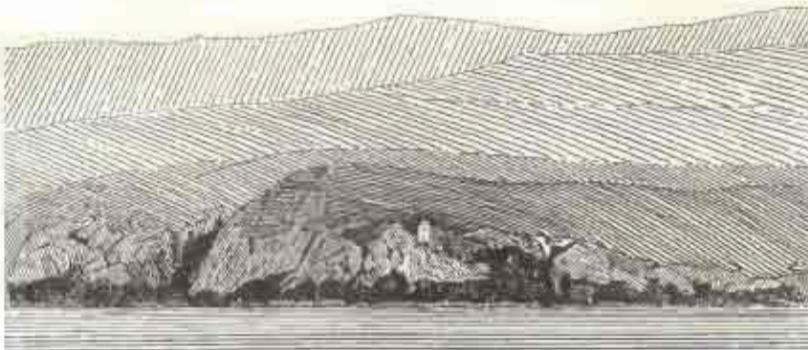
Islets and dangers.—For Pender rock, and the other two rocks, extending south-eastward from Aird a Bhaigh, on the south-western side of the entrance to Loch Claidh, (*see* page 441); the south-western 45 side of the loch is generally steep-to.

Rocks, which dry, extend about half a cable south-westward from Rubha Valamas Beag, just within the entrance to the loch. Sgeir Niogaig, situated close off the north-eastern shore, about 5 cables west-north-westward of Rubha Valamas Beag, is a bare rock, 16 feet 50 (4^m9) high, and is connected with the shore by a reef that dries. Half a cable westward of Sgeir Niogaig are two rocks, the southern of which dries 2 feet (0^m6), and the other 11 feet (3^m4).

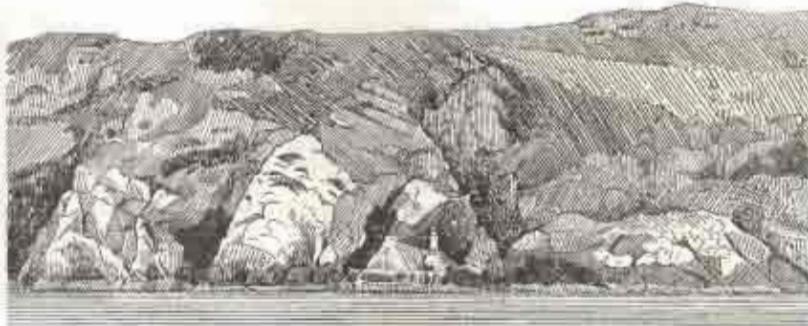
Eilcan Hingarstay, about 8 cables north-north-westward of Sgeir Niogaig and about one cable from the north-eastern shore, is a green



To face page 463.



Rubh' Uisneach lighthouse, bearing 323°.



Gob na Milaid lighthouse, bearing 302°.

(Originals dated 1933.)

Chart 1794.

islet rising at its northern end to a hillock, 76 feet ($23^{\text{m}}2$) high. The north-eastern shore of the loch, above Eilean Hingarstay, is generally steep-to.

Anchorages and inlets.—Camus Valamas Beag, a rocky creek with a gravel beach at its head, eastward of Sgeir Niogaig, has a depth ⁵ of 5 fathoms ($9^{\text{m}}1$).

A small vessel can obtain anchorage on the north-eastern side of Eilean Hingarstay, in depths of from 3 to 4 fathoms ($5^{\text{m}}5$ to $7^{\text{m}}3$), mud and sand, but the space is barely 130 yards ($118^{\text{m}}9$) wide. The entrance to this anchorage is westward and northward of Eilean ¹⁰ Hingarstay; there is a channel with a depth of 7 feet ($2^{\text{m}}1$), southward of Eilean Hingarstay, but it is dangerous, on account of rocks extending about one cable from the point south-south-eastward of this islet, the outer of which dries 7 feet ($2^{\text{m}}1$).

About $1\frac{1}{2}$ miles within the entrance, on the south-western side of the ¹⁵ loch, is an indentation with moderate depths, where a vessel might anchor in a south-westerly gale, but it is open south-eastward.

Tob Smuasavig, an inlet on the north-eastern side of the loch, about $1\frac{1}{2}$ miles above Eilean Hingarstay (*Lat.* $57^{\circ} 56' N.$, *Long.* $6^{\circ} 36' W.$), is the best anchorage in Loch Claidh, but only a vessel of ²⁰ moderate size could stand far enough in to shut in the outer point, and it is said that a considerable sea sets in with southerly gales. The entrance to this inlet is rather blind until it opens, but it may be identified by the sloping land on the south-eastern side. A vessel should anchor, in a depth of 7 fathoms ($12^{\text{m}}8$), in the middle of the ²⁵ inlet, with the outer point of the loch nearly shut in; the bottom is stiff clay, broken shells, and stones.

Directions.—A vessel entering Loch Claidh should keep Rubh' Uisenish, (*see below*), bearing 060° and open south-eastward of Rubh' a Bhaird, (*see below*), until Palla na Maighdeann bears 330° and is open ³⁰ north-eastward of the point on the south-western side of Loch Claidh 6 cables within the entrance to the loch, whence she can proceed into the loch, and steer for the desired anchorage.

Coast.—Light.—From Rubha Valamas Beag the coast trends about $3\frac{1}{2}$ miles east-north-eastward to Rubh' Uisenish. Between Rubha ³⁵ Valamas Beag and Rubh' a Bhaird, about one mile east-north-eastward, the coast is rocky and indented; Rubh' a Bhaird is sloping with very little cliff, and rocks dry out three-quarters of a cable off it. Rubha Brollum, one mile north-eastward of Rubh' a Bhaird, is a vertical cliff, 100 feet ($30^{\text{m}}5$) high; rocks, which dry, extend half a cable southward ⁴⁰ and westward from it, and outside them the water is deep.

Camus Homasero is entered between Rubha Brollum and Rubh' Uisenish, about $1\frac{1}{2}$ miles east-north-eastward; it is open southward, but is steep-to with no outlying shoals.

Rubh' Uisenish is a smooth sloping headland, terminating in a rocky ⁴⁵ but not cliffy point, and contrasts strongly with the rugged coast northward. A deep black fissure near the point shows from north-eastward. A light is exhibited, at an elevation of 72 feet ($21^{\text{m}}9$), from a white tower, 29 feet ($8^{\text{m}}8$) in height, situated on Rubh' Uisenish. *See view facing this page.*

50

Off-lying islands and dangers.—Shiant islands, situated about 4 miles south-eastward of Rubh' Uisenish, are a group of two islands and several islets and rocks of basaltic formation. The islands afford pasture to a number of sheep, but have no permanent inhabitants.

Chart 1794.

The bottom between these islands and Rubh' Uisenish is very uneven, the depths varying from 13 to 80 fathoms (23^m8 to 146^m3).

Eilean an Tighe, the southern part of the largest island of this group, is connected with Garbh eilean, the northern part, by a low, narrow, gravel neck; a shoal, with a depth of 4 fathoms (7^m3) over it, lies about 5 cables westward of the southern extremity of Eilean an Tighe. Garbh eilean is 521 feet (158^m8) high. Eilean an Tighe is lower than Garbh eilean, and has precipitous cliffs on its eastern side.

Eilean Mhuire (*Lat. 57° 54' N., Long. 6° 20' W.*) lies about 3 cables eastward of Garbh eilean; the south-eastern portion is a narrow low flat, terminating in an above-water rock. Rocks extend about one cable westward from the middle of the western side of Eilean Mhuire, and a shoal bank for half a cable farther, reducing the width of the 15 navigable channel between the two islands, the bottom of which is very uneven, to less than one cable. A rocky reef which dries, extends 1½ cables southward from the middle of the western side of Eilean Mhuire.

Shiant South rock, about 2½ miles south-westward of the southern extremity of Eilean an Tighe, has a depth of 22 feet (6^m0) over it, and is 20 steep-to; it is situated near the south-western end of a bank, with depths of from 6½ to 24 fathoms (11^m4 to 43^m9) over it, extending 3 miles south-westward from the southern extremity of Eilean an Tighe.

Kebock head (page 427), bearing 011° and open westward of Galta Mòr, (*see below*), leads 4 cables westward of Shiant South rock, and 25 the north-western extremity of Garbh eilean in line with Kebock head, bearing 005°, leads 6 cables eastward of this rock.

A chain of detached islets and rocks extends 1½ miles westward from the north-western extremity of Garbh eilean; all these rocks, with the exception of Damhag, which is situated at the western edge of 30 this chain, are above water.

Galta Mòr, the largest of this chain of islets, about 8 cables west-south-westward of the north-western extremity of Garbh eilean, is 185 feet (56^m4) high, and has a little grass on its summit; the others are bare rocks. Dainhag dries one foot (0^m3); the gravel neck between 35 Eilean an Tighe and Garbh eilean, bearing 103° and open northward of Galta Beag, an islet about 5 cables eastward of Galta Mòr, leads northward of Damhag.

The channels between Damhag and Galta Mòr and between Galta Mòr and Galta Beag should not be used, the bottom being uneven, but 40 the channel between Galta Beag and Garbh eilean is deep and free from dangers.

Shiant East bank extends for about 12 miles north-north-eastward from a position about 5 miles eastward of the south-eastern extremity of Eilean Mhuirc; it has depths of from 14 to 30 fathoms (25^m6 to 45 54^m9), and is a good fishing ground.

Anchorage.—Temporary anchorage can be obtained during summer, in the bay formed between Eilean an Tighe, Garbh eilean, and Eilean Mhuire (*Lat. 57° 54' N., Long. 6° 20' W.*), sheltered from westerly and north-westerly winds; the best berth is in a depth 50 of 9 fathoms (16^m5), hard sand, with the neck of gravel bearing 250°, distant 2½ cables; the holding ground is not good. This anchorage is open to south-easterly and south-westerly winds, and during gales from the latter quarter a heavy swell rolls in; a vessel caught at anchor in these circumstances can slip and run through the narrow channel to

Chart 1794.

the northward, keeping less than one cable from the eastern extremity of Garbh eilean.

In 1953, H.M.S. *Cook* anchored on the western side of Shiant islands in a depth of 15 fathoms (27^m4), rock, with Galta Mòr bearing 299°, 5 11 cables; it was found to be a fair anchorage in easterly winds.

Tidal streams.—Between Rubh' Uisenish and Shiant islands the north-east-going stream begins -0310 Stornoway (+0500 Dover), the south-west-going stream begins +0315 Stornoway (-0100 Dover); the spring rate in each direction is from 3 to 4 knots. There are 10 heavy overfalls, to the north-eastward of the banks with depths of 16 and 18 fathoms (29^m3 and 32^m9) over them in mid-channel, which are particularly dangerous to boats when there are strong north-easterly winds during the north-east-going stream; with such winds the south-west-going stream runs in a more southerly direction, towards Damhag 15 and the channel between Galta Mòr and the islands.

The streams are much affected by wind, especially at neaps. Shiant islands lie across the direction of the stream, and eddies, occur in their vicinity. Off the eastern side of the islands the stream runs southward between about +0300 and -0325 Stornoway (-0115 and +0445 20 Dover), and turns south-westward southward of them; the spring rate is about 2 knots; the north-east-going stream is uncertain, but appears to run between about -0325 and +0145 Stornoway (+0445 and -0230 Dover). Southward of the islands the streams run about east-north-eastward and west-south-westward; about one mile south-east- 25 ward of their southern extremity the spring rate in both directions is about 3 knots and there are heavy overfalls during the east-going stream.

Near Shiant South rock the stream is more or less rotatory clockwise; it is weak, running in a south-south-easterly direction, +0145 30 Stornoway (-0230 Dover), and changes direction gradually westward as the rate increases and runs strongly west-south-westward between about +0500 and -0525 Stornoway (+0045 and +0245 Dover); it then changes gradually through west and north and runs east-north-eastward between -0340 and +0145 Stornoway (+0430 and -0230 35 Dover). The spring rate in west-south-westerly and east-north-easterly directions is about 3 knots, but is more over the rock.

Directions.—A vessel bound from north-eastward should follow the track indicated by a pecked line on the chart through the Sound of Shiant. She should pass about 1½ miles south-eastward of Rubh' 40 Uisenish and Glas Eilean light-towers and 8 cables north-westward of Sgeir Inoe light-float.

A vessel approaching from south-westward should proceed as directed on page 515.

Loch Brollum.—Loch Brollum is entered between Rubh' a Bhaird 45 (Lat. 57° 55' N., Long. 6° 32' W.), and Rubha Brollum, about one mile north-eastward. This loch is not recommended as an anchorage.

Aird Dhubbh, 4 cables north-north westward of Rubha Brollum, is a grassy peninsula on the eastern shore of the loch, and attains an elevation at its northern end of about 50 feet (15^m2). Meall Mòr, 50 220 feet (67^m1) high, situated about 4 cables north-north-westward of Aird Dhubbh, is a remarkable hummock, rising abruptly from the eastern shore of the loch. Crionaig, about 2 miles north-north-westward of Meall Mòr, is a broad-topped mountain, 1,525 feet (464^m8) high.

Chart 1794.

The western shore of the loch is steep-to.

Bogha Dubh, situated one cable north-westward of the northern end of Aird Dhubh, dries one foot (0^m3), and a rock, with a depth of one foot (0^m3) over it, lies about half a cable north-north-westward of the same point, in the entrance to the basin on the north-eastern side of Aird Dhubh. Rubha Brollum, bearing about 147° and open south-westward of the south-western extremity of Aird Dhubh, leads about half a cable south-westward of Bogha Dubh.

10 Tidal streams.—The tidal streams in Loch Brollum are imperceptible.

Anchorages.—The anchorages, described below, though not recommended, can be used in case of necessity.

The basin on the north-eastern side of Aird Dhubh is well sheltered, but is difficult of access; it has depths of from 2 to $3\frac{1}{2}$ fathoms (3^m7 to 6^m4), good holding ground. A vessel entering this basin should keep 70 yards (64^m0) from the western and northern sides of Aird Dhubh, and when Rubh' a Bhaird (*Lat. $57^\circ 55' N.$, Long. $6^\circ 32' W.$*) is shut in by Aird Dhubh she will be eastward of the sunken rock in 20 the entrance, and can anchor as convenient.

There is anchorage in the northern part of the loch, northward of Meall Mòr, in depths of from 3 to 11 fathoms (5^m5 to 20^m1), clay; there are no rocks on either shore, but in this part the loch is one cable wide, and open southward.

25 Coast.—From Rubh' Uisenish (page 427) to Rubha Ailltenish, the southern entrance point of Loch Shell, about $3\frac{1}{2}$ miles northward, the coast consists of cliffs of from 100 to 300 feet (30^m5 to 91^m4) high with steep slopes from the sides of the bays; the most marked of these is Mol Chadha Gearraidb, 2 miles north-north-eastward of 30 Rubh' Uisenish, with its cottages, gravel beach, and deeply-marked watercourse. The bottom along this coast is very uneven, and there is a depth of 50 fathoms (91^m4) a quarter of a mile off Rubh' Uisenish.

Rubha Ailltenish, 40 feet (12^m2) high, is green in colour; Sgeir Ailltenish, close south-south-eastward of it, but nearly joined at low 35 water, is a low islet, which sometimes, though rarely, covers.

Loch Shell.—Loch Shell is entered between Rubha Ailltenish and Srianach head, 2 miles east-north-eastward; it contains one of the best and most convenient anchorages on the eastern side of Lewis.

40 Srianach head is bold, precipitous, and about 200 feet (61^m0) high; it shows a vertical face westward and is steep-to.

The land on the southern side of Loch Shell within Rubha Ailltenish is high and steep, but without high cliffs. The northern shore of the loch is much indented; between Srianach head and the eastern entrance 45 point of Tob Limervay, $1\frac{1}{2}$ miles west-north-westward, are two bights with gravel or stony beaches.

Limervay village stands on the shores of Tob Limervay and the hills in its vicinity are cultivated.

Tidal streams.—The in-going stream begins about +0605 Stornoway (+0150 Dover), and the out-going stream begins about -0010 Stornoway (-0425 Dover), but the streams are barely perceptible.

Islets and dangers.—Eilean Iuvard (*Lat. $58^\circ 00' N.$, Long. $6^\circ 26' W.$*), lying in the entrance between Rubha Ailltenish and Srianach head, is 240 feet (73^m1) high; its coasts are generally steep-to half a

Chart 1794.

cable offshore. Sgeir nan Caorach, close south-westward of the western extremity of Eilean Iuvard, is 3 feet (0^m9) high.

A rocky shoal, with a depth of 26 feet (7^m9) over it, lies on the south-western side of the entrance about one mile south-south-eastward of Sgeir nan Caorach and 3 cables offshore; within this point, along the southern side of the loch, there are no off-lying shoals. 5

Depths of $7\frac{1}{2}$ and $7\frac{1}{2}$ fathoms (13^m7 and 12^m6) lie about 3 cables south-south-westward and $2\frac{1}{2}$ cables south-westward, respectively, of Stac a Bhaigh, a small islet off the southern side of Eilean Iuvard. 10

Sgeir Phlathuig, about 9 cables north-westward of Srianach head and about one cable offshore, dries 2 feet (0^m6); its position is marked by a steep watercourse and ravine with large stones at its mouth, formed where the shore changes from precipitous cliffs to steepish braes. Rubha Buidhe, a promontory on the northern side of the 15 loch, 2 miles westward of Srianach head, in line with a deep hollow in the distant land, bearing 272° and just open northward of Sron Chrom, the north-eastern extremity of Eilean Iuvard, leads close southward, and the south-eastern extremity of Eilean Iuvard in line with the western extremity of Galta Mòr (page 444), bearing about 178° , leads 20 close westward, of Sgeir Phlathuig.

Sgeir Fhraoich, situated in Caolas a Tuath, the channel north-eastward and northward of Eilean Iuvard, about 4 cables westward of Sron Chrom, is 18 feet (5^m5) high, and is covered with heather. Sgeir Ghlas, lying close westward of Sgeir Fhraoich, is also 18 feet (5^m5) 25 high. Westward of these islets Caolas a Tuath becomes very narrow and is encumbered with rocks. Rubha Buidhe slopes down nearly to the water's edge.

Sgeirean Dubha, about $1\frac{1}{2}$ cables north-north-westward of Sgeir nan Caorach, are two rocks close together, which dry 10 feet (3^m0); Bogha 30 Ruadh, about 2 cables north-north-westward of Sgeirean Dubha and one cable from the western side of Rubha Buidhe, dries 13 feet (4^m0); a reef, some parts of which dry, extends one cable eastward and northward from Bogha Ruadh, but the southern side of Bogha Ruadh is steep-to. 35

Sgeir Fhraoich, bearing about 090° and open northward of Eilean Iuvard, leads northward of Sgeirean Dubha. The north-eastern extremity of Eilean Mhuire (page 444), bearing about 146° and its own breadth open south-westward of Sgeir nan Caorach, leads close south-westward of Sgeirean Dubha and of Bogha Ruadh. Sgeir Fhraoich, 40 bearing about 090° and open southward of Rubha Buidhe, leads close southward of Bogha Ruadh.

Sgeir Leum, about 4 cables west-north-westward of Rubha Buidhe and about 2 cables from the northern shore of the loch, is a small rock 7 feet (2^m1) high; close westward of it is a rock, with a depth of one 45 foot (0^m3) over it.

Anchorages and inlets.—Caolas a Tuath affords excellent anchorage.

A small vessel could anchor in the bight on the northern side of this channel, in mid-channel, about $1\frac{1}{2}$ miles north-westward of Srianach head (*Lat. $58^\circ 00' N.$, Long. $6^\circ 23' W.$*), in a depth of 6 fathoms 50 (11^m0), where there is swinging room of about one cable.

A vessel of moderate size should anchor close eastward of Sgeir Fhraoich, in a depth of 11 fathoms (20^m1); in this position the holding ground is stiff mud, and the entrance is well shut in.

Chart 1794.

In westerly gales very violent squalls are experienced at the outer anchorage, and the bight described above then affords much better shelter.

- 5 Tob Limervay has a rock, which dries, extending half a cable from its eastern entrance point, and a vessel entering this inlet should be careful to avoid this rock; the shores on both sides of the inlet are foul for about half a cable offshore, and within 2 cables of its head are three rocks, which dry.
- 10 The best berth in Loch Shell for a vessel of moderate size is with Eishken lodge situated at the head of Tob Eishken, about $2\frac{1}{2}$ miles west-north-westward of Rubha Buidhe, bearing 337° , distant 8 cables, in a depth of 18 fathoms (32^m9); the holding ground in this position is stiff mud and a vessel can ride out the strongest gales in safety.
- 15 Eishken lodge has farm offices and enclosures for sheep adjacent to it; it opens when bearing 323° .

In 1953, H.M.S. *Cook* obtained excellent anchorage in all winds, with Eishken lodge bearing 337° , 10 cables, in a depth of 18 fathoms (32^m9), good holding ground of thick mud.

- 20 Tob Eishken is an inlet about $2\frac{1}{2}$ cables wide at its entrance, and narrowing towards its head. A rock awash lies about half a cable from the western shore and 2 cables from Eishken lodge; the shore bank does not dry out more than a quarter of a cable, except at the head of the inlet.
- 25 Westward of Tob Eishken the loch is about $3\frac{1}{2}$ cables wide, and it narrows gradually towards its head; the depth also decreases from 16 to 5 fathoms (29^m3 to 9^m1) at half a mile from the head, where a vessel could anchor.

Directions.—The entrance to Caolas a Tuath is difficult to identify 30 from southward, as Eilean Iuvard does not appear to be detached, but a high cavern in the highest cliff of Srianach head, half a mile from the point, and the irregular outline and fall in the middle of Eilean Iuvard, assist in identifying it.

A vessel should steer to pass about midway between Srianach head 35 and the eastern extremity of Eilean Iuvard, and thence in mid-channel until Sgeir Fhraoich opens northward of Eilean Iuvard, when she can steer westward and anchor, in a depth of 11 fathoms (20^m1), as described above.

A vessel approaching Loch Shell at night should bear in mind that 40 Eilean Glas light is obscured by Rubh' Uisenish.

Coast.—Danger.—Light.—The coast between Srianach head and Gob na Milaid, the southern extremity of Kebock head, $1\frac{1}{2}$ miles north-north-eastward, is cliffty. It is indented by two small bays, between which, about 6 cables north-north-eastward of Srianach head 45 (*Lat. $58^{\circ} 00' N.$, Long. $6^{\circ} 23' W.$*), is Stac a Chomhraig, 100 feet (30^m5) high, and close to Gob na Milaid is a waterfall, with a large square stone on the brink of the cliff, visible from a short distance.

A light is exhibited, at an elevation of 47 feet (14^m3), from a white tower, 24 feet (7^m3) in height, situated on Gob na Milaid. See view 50 facing page 443

Kebock head is a bold headland, attaining an elevation, about half a mile inland, of 540 feet (164^m6), with vertical cliffs of from 350 to 400 feet (106^m7 to 121^m9) high; its coast, bold and steep, extends northward about three-quarters of a mile to Creag Mòr point,

Chart 1794.

the southern entrance point of Loch Ouirn. A rock, which dries, lies a short distance from the northern part of Kebock head, abreast of a remarkable yellow quartz vein.

Charts 1154, 1794.

Between the northern entrance point of Loch Ouirn and a salient point, $2\frac{1}{2}$ miles northward, close north-eastward of which is Torray island, the coast is rugged and broken, but is generally steep-to. The land is from about 200 to 300 feet (61^m0 to 91^m4) high.

Chart 1154.

Several islands and islets lie close offshore between the salient point, mentioned above, and Rubha Stangray, $1\frac{1}{4}$ miles north-north-westward, and inside them are some anchorages affording good shelter to small craft.

Rubha Stangray, the southern entrance point of Loch Erisort, 15 terminates in a clifftop hillock, 68 feet (20^m7) high; the land within rises gradually to a double-topped hill, 233 feet (71^m0) high. Stangray, a steep-to islet, 18 feet (5^m5) high, with a patch of grass on its summit, lies close northward of Rubha Stangray (*Lat. $58^{\circ} 07' N.$, Long. $6^{\circ} 24' W.$*), to which it is joined by a drying reef.

Chart 1794.

Tidal streams.—Between Kebock head and Eye peninsula the streams run about north-north-eastward and south-south-westward between the head and the eastern side of the peninsula; there is very little stream along the coast northward of the head, in the approach 25 to Stornoway harbour, and in Branahuie bay (page 454). Off Kebock head the north-north-east-going stream begins -0410 Stornoway (+0400 Dover), the south-south-west-going stream begins $+0215$ Stornoway (-0200 Dover); the spring rate in each direction is from one to 1·5 knots, decreasing to the northward.

In Loch Erisort the in-going stream begins about $+0610$ Stornoway (+0155 Dover), and the out-going stream begins about -0005 Stornoway (-0420 Dover); the streams are barely perceptible except in the narrower channels.

In Stornoway harbour the in-going stream begins about -0610 35 Stornoway (+0200 Dover), and the out-going stream begins about H.W. Stornoway (-0415 Dover), but the streams are barely perceptible.

The streams are imperceptible in the smaller lochs between Kebock head and Stornoway, and in Branahuie bay.

Charts 1154, 1794.

Islands and dangers.—Torray island, the southernmost of the group in this vicinity, is 143 feet (43^m6) high, and protects the snug harbour of Loch Mariveg, which is entered $3\frac{1}{2}$ cables west-north-westward of the southern extremity of Torray island. The best approach to Loch Mariveg is southward and westward of Torray 45 island, but a rock, which dries, lies in the narrows, about $2\frac{1}{2}$ cables north-westward of the southern extremity of Torray island and about a quarter of a cable from its south-western side.

Dubh sgeir, the easternmost of the group, about $5\frac{1}{2}$ cables north-north-eastward of the southern extremity of Torray island, is a grey 50 islet, 18 feet (5^m5) high, with a few patches of grass on its summit; it is steep-to seaward, but a rock lies close off its western side.

Rosay island, the middle island of the group, attains an elevation of 168 feet (51^m2) near its eastern end in a vertical cliff facing north-east-

Charts 1154, 1794.

ward. Owen shoal, about $3\frac{1}{2}$ cables east-north-eastward of Rosay island, has a least depth of 4 fathoms ($7^{\text{m}}3$) over it. Kebock head, bearing 180° and open eastward of Dubh sgeir, leads eastward of this 5 shoal.

Southward of Rosay island Caolas-nah-Agarsaid, a narrow channel, leads into a landlocked basin; narrow and intricate channels connect this basin with Loch Mariveg, southward, and with Camus Orinsay, northward; the latter channel, leading from the north-western end of 10 this basin, dries.

Orinsay island, the northernmost of the group, is 143 feet ($43^{\text{m}}6$) high; foul ground extends about half a cable eastward from its south-eastern end, and its south-western end is connected with the mainland of Lewis by a reef that dries.

Chart 1794.

Anchorages and inlets.—Loch Ouirn, immediately northward of Kebock head, is comparatively deep; the loch can only be identified from the north-eastward by the sudden turn of the land on the northern side of Kebock head (*Lat. $58^{\circ} 01' N.$, Long. $6^{\circ} 22' W.$*).

20 The land on both sides of the loch is steep until near the head, where it slopes gradually, and is well cultivated, with a number of straggling cottages.

The loch is practically free from dangers, and its shores are moderately bold; a rock, with a depth of 4 fathoms ($7^{\text{m}}3$) over it, lies 2 cables 25 from the point on the southern shore where the loch suddenly begins to narrow.

In 1953, H.M.S. *Cook* obtained good anchorage in the middle, in a depth of 13 fathoms ($23^{\text{m}}8$), with good holding ground of thick mud.

Small vessels anchor about 2 cables above this rock, abreast a con-30 spicuous ravine or watercourse on the southern shore, in depths of from 3 to 5 fathoms ($5^{\text{m}}5$ to $9^{\text{m}}1$); the bottom is good, and, though the loch is straight, no sea reaches home with any wind, but in south-westerly gales heavy squalls come down from the land on the southern side.

There is a post and telegraph office at Graver, a village on the 35 northern side of the head of Loch Ouirn. Small quantities of provisions can be obtained at Graver.

Chart 1154.

Camus Orinsay, on the western side of Orinsay island, has depths of from $3\frac{1}{2}$ to 7 fathoms ($6^{\text{m}}9$ to $12^{\text{m}}8$).

40 **LOCH ERISORT.**—Loch Erisort is entered between Stangray and Stac, a flat-topped islet, 43 feet ($13^{\text{m}}1$) high, $1\frac{1}{2}$ miles north-eastward. It has several anchorages, one of which, Cromore, on the southern side of the loch, about three-quarters of a mile south-westward of Stangray, is suitable for large vessels.

45 Above the anchorage of Cromore the shores of the loch are much broken by bays and inlets, and there are many rocks and islets, but the central channel is good until near the head, where the shores close in and the depths decrease.

Loch Leurbost is entered on the northern side of Loch Erisort, about 50 $1\frac{1}{2}$ miles westward of Stac; it is a branch of Loch Erisort.

All the rocks in Loch Erisort except Bones rock are visible at low water.

Islets and dangers.—Tavay Mòr (*Lat. $58^{\circ} 07' N.$, Long. $6^{\circ} 23' W.$*),

Chart 1154.

an island situated in the centre of the entrance to Loch Erisort, about $6\frac{1}{2}$ cables east-north-eastward of Stangray, is 118 feet (36 m 0) high; from southward it shows an irregular outline, with sloping grassy braes terminating in low cliffs. The northern, eastern, and south-western coasts of Tavay Mòr are steep-to. Stack Tavay, three-quarters of a cable southward of the southern extremity of Tavay Mòr, is a rock about 50 feet (15 m 2) high, and is steep-to half a cable offshore; there is a boat channel between Stack Tavay and Tavay Mòr. Tavay Beag, an island close westward of Tavay Mòr, from which it is separated by a narrow channel, with a depth of $4\frac{1}{2}$ fathoms (7 m 8) in it, is 43 feet (13 m 1) high; Tavay Beag is steep-to on its northern side.

The channel between Stack Tavay and the north-eastern point of Orinsay island is about 5 cables wide, and the channel northward of Tavay Mòr and Tavay Beag is about $4\frac{1}{2}$ cables wide; both these channels are deep and free from dangers.

Barkin isles, lying on the northern side of Loch Erisort, in the entrance to Loch Leurbost, consist of a number of islands and islets; only those bordering the channel through Loch Erisort, and into Loch Leurbost, are described.

Seumas Cleite, the south-easternmost islet of this group, is 18 feet (5 m 5) high, and consists of grey granite, which, having been quarried, gives a castellated appearance to its outline; a rock, which dries 5 feet (1 m 5), lies close northward of its north-eastern extremity; with the exception of this rock Seumas Cleite is steep-to.

Tannray, an island about $2\frac{1}{2}$ cables westward of Seumas Cleite, is 118 feet (36 m 0) high, and from south-eastward shows a double heath-covered summit; the eastern and western sides of this island are steep-to. Sgeirean Dubha Tannray, about three-quarters of a cable south-westward of the southern extremity of Tannray, consist of two rocks, the highest of which is 6 feet (1 m 8) high.

Bones rock, about $4\frac{1}{2}$ cables west-south-westward of the south-western extremity of Tavay Beag and about 3 cables from Stangray, has a least depth of $2\frac{1}{2}$ fathoms (4 m 6) over it.

Charts 1154, 1794.

The north-western extremity of Tavay Beag in line with Rubhia na Strianaich (page 460), bearing about 054° , leads close south-eastward, and the south-western side of Tannray in line with Crossbost Free church, $9\frac{1}{2}$ cables north-westward, bearing 312° , leads close south-westward of Bones rock.

Chart 1154.

The Brothers, about three-quarters of a cable westward of Stangray (*Lat. 58° 07' N., Long. 6° 24' W.*), dries 9 feet (2 m 7). When this rock is covered it is an indication that there is sufficient depth for a small vessel to pass through the channel at the southern end of Camus Orinsay (page 450).

Sgeir Bhuidhe, about $2\frac{1}{2}$ cables westward of Stangray and about a quarter of a cable offshore, is an above-water rock. Sgeir an t Sil, about $2\frac{1}{2}$ cables west-south-westward of Sgeir Bhuidhe, on the south-eastern side of the entrance to Cromore anchorage, is 11 feet (3 m 4) high. There are several islets on the north-western side of the entrance to Cromore anchorage; Eilean Glas, the north-easternmost of them, about $2\frac{1}{2}$ cables north-westward of Sgeir an t Sil, is 18 feet (5 m 5) high, and steep-to on its northern and eastern sides. Sgeir Phraoich, at the head

Chart 1154.

of Cromore anchorage, about $3\frac{1}{2}$ cables south-south-westward of Eilean Glas, is an above-water rock.

Eilean Chaluim Chille, the north-eastern extremity of which is situated about 3 cables south-south-westward of Eilean Glas, is 118 feet (36 m 0) high; Eilean Chaluim Chille is joined to the mainland south-eastward by a reef, which dries 2 feet (0 m 6). Sgeir an Lus, about $1\frac{1}{2}$ cables northward of the northern extremity of Eilean Chaluim Chille, is 6 feet (1 m 8) high, and steep-to. Plaideag, a reef about $2\frac{1}{2}$ cables west-south-westward of Sgeir an Lus, dries 8 feet (2 m 4).

Braigh an Stac (page 454), bearing 059° and just open south-eastward of Sgeir an Lus, leads through the fairway south-eastward of Plaideag.

Eilean a Bhlaire, about $5\frac{1}{2}$ cables west-south-westward of Sgeir an Lus, is a grassy islet, 16 feet (4 m 9) high. Foul ground, which dries, extends about one cable north-eastward from Eilean a Bhlaire, and a bank, with depths of less than 5 fathoms (9 m 1) over it, extends half a cable farther in the same direction; a rock, with a depth of 3 feet (0 m 9) over it, lies about a quarter of a cable southward of this islet. Sgeir an Lus in line with the summit of Braigh an Stac, bearing 059°, leads south-eastward of this rock.

Sgeir nan Each, situated in the entrance to Loch Hurista, about $6\frac{1}{2}$ cables south-south-westward of Eilean a Bhlaire (*Lat. 58° 07' N., Long. 6° 27' W.*), dries from 6 to 12 feet (1 m 8 to 3 m 7). Growing rock, about three-quarters of a cable from the south-western extremity of Eilean Chaluim Chille, dries 4 feet (1 m 2); eastward of Growing rock, in Loch Hurista, are several islets and rocks. Sgeir an Lus, bearing 050° and open north-westward of the north-western extremity of Eilean Chaluim Chille, leads north-westward of Sgeir nan Each.

From a point on the southern shore of Loch Erisort, about 9 cables south-westward of Eilean a Bhlaire, foul ground, which dries 2 feet (0 m 6), extends about half a cable offshore.

Keose island, the eastern extremity of which lies about 7 cables south-westward of Eilean a Bhlaire, lies on the northern side of the fairway, and is 18 feet (5 m 5) high. Garbh eilean, close westward of Keose island, to which it is joined by a reef which dries, is 43 feet (13 m 1) high.

Anchorage.—Poll Skut is entered about three-quarters of a mile westward of Stac, on the northern side of Loch Erisort; it affords anchorage during northerly winds, in a depth of 11 fathoms (20 m 1), mud.

Loch Leurbost (page 450) affords good but limited anchorage, and, with the exception of Jackal rock, is free from dangers in the fairway. Jackal rock, about $1\frac{1}{2}$ miles west-north-westward of the northern extremity of Tannray, and half a cable from the southern shore of Loch Leurbost, has a least depth of $1\frac{1}{2}$ fathoms (2 m 3) over it.

Aird Feiltanish, about $1\frac{1}{2}$ miles westward of Stac, is a low point on the northern shore of Loch Leurbost. Crossbost Free church and school-house, stone buildings with slated roofs, are situated on the coast, $3\frac{1}{2}$ cables west-north-westward of Aird Feiltanish; there is a post and telegraph office at Crossbost.

The best anchorage in Loch Leurbost is abreast the Free church (*Lat. 58° 08' N., Long. 6° 26' W.*), where the loch is about $1\frac{1}{2}$ cables wide, in a depth of 7 fathoms (12 m 8), mud. A vessel proceeding

Chart 1154.

through the narrows above this should be careful to avoid Jackal rock.

Cromore anchorage has depths of from 7 to 9 fathoms (12^m8 to 16^m5), mud.

Tob Cromore, a basin on the south-eastern side of the head of 5 Cromore anchorage, is an excellent little harbour for small vessels, with depths of from three-quarters of a fathom to 2½ fathoms (1^m4 to 4^m6); the bottom is clay, but foul ground extends a short distance from the shores of this basin. Rocks, which dry, extend about half a cable north-eastward from, and a rock, which dries, is situated about 10 three-quarters of a cable south-south-westward of the south-western entrance point of Tob Cromore. A stone curing-house stands on the south-western entrance point; Cromore village is on rising ground on the south-eastern side of the basin.

There is a post office at Cromore.

15

For 3 miles above Eilean Chaluim Chille there is excellent anchorage, in depths of from 7 to 10 fathoms (12^m8 to 18^m3).

Submarine and overhead cables.—**Beacons.**—Vessels are warned not to anchor in an area in Poll Skut and its approach, the limits of which are indicated by pecked lines on the chart, on account of 20 submarine cables. The landing place is marked by a beacon. See page 7.

A submarine power cable crosses the loch about 2 miles westward of the western extremity of Eilean Chaluim Chille; the landing places of the cable are marked by a cable beacon.

25

An overhead cable crosses the head of the loch, at a height of 30 feet (9^m1) above high water, between the eastern ends of Eilean Tulach and Eilean Torais, situated about 5½ miles westward of Eilean Chaluim Chille, and the shores of the loch on either side.

An overhead cable crosses the channel, at a height of 45 feet (13^m7) 30 above high water, between the head of Loch Grimshader (page 454) and Loch Beag.

Charts 1154, 1794.

Directions.—A vessel approaching from southward should keep Kebock head bearing 180° and open eastward of Dubh sgeir until 35 Stangray bears 286°, when she will be northward of Owen shoal, and can steer to pass between Stangray and Bones rock. When abreast Bones rock she can steer into Cromore anchorage, taking care to avoid the dangers on the southern side of the approach.

Chart 1154.

40

If bound into Loch Leurbost the vessel should pass south-westward and westward of Sgeirean Dubha Tannray and westward of Tannray, and proceed to the anchorage in the centre of the loch abreast the Free church.

A vessel approaching from north-eastward should keep on the 45 northern side of Loch Erisort, and steer to pass about one cable southward of Seumas Cleite, and about 2 cables southward of Tannray (*Lat. 58° 07' N., Long. 6° 25' W.*); when Crossbost Free church bears 312° and is just open south-westward of the south-western side of Tannray she can steer for Cromore anchorage.

50

APPROACH TO STORNOWAY.—Coast.—Dangers.—Beacon.—Raerinish point, on the southern side of the entrance to Loch Erisort, is a broad headland and the eastern termination of the peninsula of

Chart 1154.

Aird Raerinish. Braigh an Stac, the north-eastern extremity of this peninsula, is a vertical cliff and mound, 143 feet (43^m6) high, with the islet of Stac close southward of it.

- 5 Between Braigh an Stac and the southern entrance point of Loch Grimshader, 6 $\frac{1}{2}$ cables northward, the eastern coast of Aird Raerinish is broken, cavernous, cliffty and steep-to. Beinn Mòr, 2 $\frac{1}{2}$ cables north-westward of Braigh an Stac, is 334 feet (101^m8) high, and shows well from the south-eastward as a knoll with a surface of bare rocks and 10 patches of heather.

Charts 1154, 512.

- From the northern entrance point of Loch Grimshader to Rubha Hurnavay, about 5 cables north-north-eastward, and thence to Arnish point, about 2 $\frac{1}{2}$ miles farther northward, the coast is precipitous and 15 steep-to.

About 2 $\frac{1}{2}$ cables westward of Rubha Hurnavay is Druim Dubh, a hill, 336 feet (102^m4) high, and 3 cables farther north-north-westward is a hill, 318 feet (97^m0) high.

Chart 512.

- 20 A white beacon (*Lat. 58° 11' N., Long. 6° 23' W.*), about 25 feet (7^m6) in height, stands on a hill, 106 feet (32^m3) high, and close to the coast, about 5 $\frac{1}{2}$ cables south-westward of Arnish point.

Eye peninsula, the south-western extremity of which is Chicken head, is situated about 4 miles east-north-eastward of Rubha Hurnavay, on 25 the north-eastern side of the approach to Stornoway; its south-eastern side is rocky, cliffty, and indented by several small bays.

The isthmus, connecting its western part with the mainland of Lewis, is so low that although the peninsula is of no great elevation it has, from a distance either south-westward or north-eastward, the appearance of an island; the land rises to a hill, 204 feet (62^m2) high, 1 $\frac{1}{2}$ cables east-north-eastward of Chicken head.

Branahuie bay is entered between Chicken head, which is steep-to, and Holm point, the eastern entrance point of Stornoway harbour, 3 $\frac{1}{2}$ miles westward. The bay is open southward; its head is separated 35 from Broad bay (page 461) by a low gravel isthmus, half a cable wide, which connects Eye peninsula to the mainland of Lewis.

The depths in Branahuie bay are moderate, but the bottom is chiefly stony, and the bay is unsafe as an anchorage.

Chicken rock, about 2 $\frac{1}{2}$ cables south-westward of Chicken head 40 (*Lat. 58° 11' N., Long. 6° 15' W.*), dries 13 feet (4^m0), and is marked by a red iron pillar beacon, surmounted by a red ball, 18 feet (5^m5) in height. The lighthouse on Arnish point, bearing 288° and open southward of Holm island, 3 $\frac{1}{2}$ cables east-south-eastward of Holm point, leads 2 $\frac{1}{2}$ cables southward of this rock.

- 45 On the eastern side of Branahuie bay, for about 5 cables from its head, rocks, which dry, extend about three-quarters of a cable offshore. On the western side of the bay, for about 6 cables from its head, rocks, which dry, extend about 2 $\frac{1}{2}$ cables offshore. Eilean nan Uan, about one mile eastward of Holm point and about one cable southward of 50 a small peninsula on the western side of the bay, is 69 feet (21^m0) high. Holm island, which is 68 feet (20^m7) high, is connected with the shore by a reef which dries.

Chart 1794.

Tidal streams.—See pages 449, and 460.

Charts 1794, 2386, 2508, 2635.

Chart 1154.

Anchorages.—Loch Grimshader is narrow and has a least depth in the fairway of $1\frac{1}{2}$ fathoms ($3^{\text{m}}2$). The southern entrance point is a cliffy head, and on the southern side of the entrance, on the edge of the cliff, is a remarkable rock having the appearance of a lion's head. 5

Sgeir Linish, situated on the northern side of the entrance about $4\frac{1}{2}$ cables southward of Druim Dubb and a quarter of a cable offshore, is an above-water rock; foul ground and a bank, with depths of less than 5 fathoms ($9^{\text{m}}1$) over it, extend about half a cable southward from it. 10

Sgeir a Chaolais, lying in the fairway of the loch, about $5\frac{1}{2}$ cables west-south-westward of Sgeir Linish, dries about 11 feet ($3^{\text{m}}4$). 10

There is excellent anchorage about $2\frac{1}{2}$ cables from the head of Loch Grimsbader, with depths of from 6 to 7 fathoms ($11^{\text{m}}0$ to $12^{\text{m}}8$). 10

Chart 1919.

STORNOWAY HARBOUR.—Aspect.—Stornoway harbour is entered between Arnish point (*Lat. $58^{\circ} 11' N.$, Long $6^{\circ} 22' W.$*) and Holm point, $4\frac{1}{2}$ cables eastward. A bank, with depths of from 19 to 30 feet ($5^{\text{m}}8$ to $9^{\text{m}}1$) over it, crosses the harbour from the western entrance point of Glumaig harbour, situated $5\frac{1}{2}$ cables west-north-westward of Arnish point, to Inaclete point, $6\frac{1}{2}$ cables north-north-eastward. The harbour is convenient and safe for vessels of any size, but the holding ground is soft and indifferent. There is anchorage outside the harbour, available in northerly gales. 15

Stornoway is the most important harbour in the Hebrides; it is about 30 miles by sea from Butt of Lewis, and vessels frequently seek refuge there in westerly gales. 25

Arnish point is the north-eastern extremity of a peninsula, from 40 to 60 feet ($12^{\text{m}}2$ to $18^{\text{m}}3$) high, on the south-western side of the entrance to Stornoway harbour. The isthmus connecting this peninsula with the mainland of Lewis is low, and on it, 4 cables south-westward of Arnish point, is a conspicuous smearing house, and three-quarters of a cable north-north-eastward of the smearing house is Arnish house, painted white. Lews castle, at the head of the harbour, $1\frac{1}{2}$ miles north-north-westward of Arnish house, also some of the houses in Stornoway, are visible from southward over Arnish point. 30

Holm point is about 30 feet ($9^{\text{m}}1$) high, and rises to an elevation of 73 feet ($22^{\text{m}}2$) 2 cables north-eastward. A coastguard look-out station and flagstaff stand on high ground above Holm point. Stoney Field, situated $3\frac{1}{2}$ cables northward of Holm point, is a grey slated cottage with wings. 40

Prominent landmarks round Stornoway are the Coastguard station about one cable north-eastward of Inaclete point (*Lat. $58^{\circ} 12' N.$, Long. $6^{\circ} 22' W.$*); two brick chimneys and the square tower near the Gas works, about $2\frac{1}{2}$ cables north-north-eastward of Inaclete point; 45 the disused patent slip, $3\frac{1}{2}$ cables north-westward of the same point; the High Martins Memorial church, with its conspicuous spire, $1\frac{1}{2}$ cables north-westward of the disused patent slip; the Nicolson institution, with its tower, $1\frac{1}{2}$ cables north-eastward of the disused patent slip; the Free church, with a square belfry, half a cable northward of 50 the High Martins Memorial church; the Scottish Episcopal church, with its spire, three-quarters of a cable north-eastward of the Free church; Lews castle, at the head of the harbour, is a Gothic structure

Chart 1919.

with three towers, and being on rising ground, is visible over the houses in the town from seaward by a vessel approaching the harbour from southward; a white square memorial tower, standing on the summit of 5 Cnoc nan Uan, about $6\frac{1}{2}$ cables north-north-westward of Lews castle, which is conspicuous.

Regulations.—Bye-Laws made under the Stornoway Harbour Order, 1926, are in force; a copy should be obtained on arrival. The following is an extract from the Bye-Laws:—

- 10 All vessels coming into the harbour shall be subject to the control of the Harbour Master as to the place of mooring or anchoring; and no vessel shall moor or anchor so as to impede traffic to and from the wharves and Inner harbour; and no anchor shall be laid out without having a proper buoy attached thereto to mark its position; 15 and should the Master refuse, or delay, to shift such vessel as directed by the Harbour Master, the Harbour Master shall have power to cause such vessel to be shifted at the cost of the Master.

Tidal streams.—See pages 449, 460.

- Seiches.**—Seiches of 20 to 25 minutes period, and range up to 20 about $1\frac{1}{2}$ feet (0^m5), occur at Stornoway. These depend on meteorological conditions, and generally occur during unsettled weather when a depression is passing northward; they may also occur when a depression is passing southward, or even, exceptionally, during fine settled weather.

- 25 The effect of seiches during the rising tide is a very rapid rise for 10 to 12 minutes; the rise then ceases, or the tide may even fall, for a similar period, the rapid rise and cessation of rise, or even fall, alternating for as long as the seiches continue.

- During the falling tide the effect is reversed, there being 10 to 30 12 minutes of rapid fall alternating with a similar period of cessation of fall, or even rise. Near high and low water, the tide rises for 10 to 12 minutes, and falls for 10 to 12 minutes alternately.

- Lights.**—A light is exhibited, at an elevation of 56 feet (17^m1), from a white tower, 45 feet (13^m7) in height, situated on Arnish point. 35 For distress signals see page 6.

- A light is exhibited, at an elevation of 24 feet (7^m3), from a grey conical iron beacon, 32 feet (9^m8) in height, situated on Reef rock, about three-quarters of a cable north-north-eastward of Arnish Point lighthouse (*Lat. $58^{\circ} 11' N.$, Long. $6^{\circ} 22' W.$*).

- 40 A light is exhibited, at an elevation of 26 feet (7^m9), from a concrete column, 10 feet (3^m0) in height, on the south-western side of Eilean na Gothail on the north-eastern side of the harbour about three-quarters of a mile north-westward of Reef Rock light-beacon; a light is exhibited at an elevation of 14 feet (4^m3), from a concrete column, 8 feet (2^m4) 45 in height, on the north-western end of the patent slip extending from the north-western end of Eilean na Gothail.

- A light is exhibited, at an elevation of 22 feet (6^m7), from a column, 17 feet (5^m2) in height, situated on the south-western corner of the south-eastern end of No. 1 pier. A light is periodically exhibited, at 50 an elevation of 22 feet (6^m7), from the north-eastern side of the south-eastern end of No. 1 pier.

- A light is periodically exhibited, at an elevation of 22 feet (6^m7), from each corner of the head of No. 2 pier.

A light is exhibited from the top of Cnoc nan Uan tower.

Chart 1919.

A light for the use of aircraft is situated about 2 miles north-eastward of Arnish point.

Dangers.—Beacons.—Biastan holm, situated on the north-eastern side of the entrance to Stornoway harbour, about 2 cables east-south-eastward of Holm point and about three-quarters of a cable offshore, dries 6 feet (1^m8), and is steep-to; it is marked at its southern extremity by a red iron pillar beacon, 7 feet (2^m1) high. The chimney of the Gas works, bearing 334° and open south-westward of Holm point, leads south-westward of Biastan holm. 10

A reef, which dries, called Reef rock, extends about one cable north-eastward from Arnish Point lighthouse, and is marked near its northern end by a light-beacon. Seid rocks, which dry, extend about three-quarters of a cable northward from the northern extremity of Arnish peninsula, and are marked at their north-western end by a black iron framework beacon, surmounted by a barrel-shaped cage, 18 feet (5^m5) high. Foul ground and a shoal bank extend about three-quarters of a cable offshore south-westward of an imaginary line joining the extremities of Reef rock and Seid rocks. 15

A small area of foul ground, the position of which is approximate, lies about $2\frac{1}{2}$ cables north-westward of the beacon marking Seid rocks. 20

The outer building on No. 1 pier, bearing 318° and just open south-westward of Eilean na Gothail, 5 cables north-north-westward of Seid Rocks beacon, leads through the fairway north-eastward of Reef rock and Seid rocks. 25

From Inaclete point, a promontory on the north-eastern side of the harbour, about $9\frac{1}{2}$ cables north-north-westward of Holm point, foul ground extends about 2 cables offshore. The south-eastern part of this foul area, which is called Sgeir Mòr Inaclete, dries 9 feet (2^m7), and is marked near its south-eastern extremity by a red perch, 15 feet (4^m8) in height, surmounted by a cage. 30

From the western entrance point of Glumaig harbour foul ground extends about three-quarters of a cable east-north-eastward, and dries from 3 to 10 feet (0^m9 to 3^m0); a black perch beacon, surmounted by a barrel-shaped cage, stands on the easternmost of the rocks that dry. 35 The edge of this foul area, which is called Sgeir na Pacaid, is steep-to.

Between the western entrance point of Glumaig harbour and a salient point 2 cables north-north-westward, foul ground, which dries from one to 8 feet (0^m3 to 2^m4) in places, extends about three-quarters of a cable offshore. Foul ground and a bank, with depths of less than 3 fathoms (5^m5) over it, extend about three-quarters of a cable northward from this salient point (*Lat. $58^\circ 12' N.$, Long. $6^\circ 23' W.$*), and north-north-westward of this point the shore of the harbour is moderately bold, with a rocky indentation about 2 cables north-westward of the point, where River Greeta or Creed flows into the harbour. 45

Eilean na Gothail, on the north-eastern side of the harbour, about $1\frac{1}{2}$ cables offshore, is 26 feet (7^m9) high; it is joined to Inaclete point by a causeway to the shore northward by a gravel spit which dries 4 feet (1^m2). A reef extends three-quarters of a cable south-eastward from the eastern extremity, and about half a cable north-westward from the western extremity of Eilean na Gothail. A bank, with depths of from 3 to 19 feet (0^m9 to 5^m8) over it, extends about one cable south-

Chart 1919.

eastward, $1\frac{1}{2}$ cables southward, and about three-quarters of a cable westward from Eilean na Gothail.

The conical roof of the market on No. 1 pier in line with the southern extremity of Lewis castle and a flagstaff bearing 337° , leads about half a cable south-westward of this bank.

A jetty, with a patent slip close alongside north-eastward of it, extends north-westward for about 400 feet ($121^m 9$), from the north-western extremity of Eilean na Gothail.

- 10 Between the northern end of Eilean na Gothail and No. 1 pier a bank, with depths of less than 3 fathoms ($5^m 5$) over it, extends about one cable offshore from the north-eastern shore of the harbour. Red rocks, about $1\frac{1}{2}$ cables north-north-westward of the northern extremity of Eilean na Gothail and about half a cable offshore, are awash.
- 15 Sgeir Poll nam Portan, about a quarter of a cable northward of Aird a Chleirich, a projecting point, 15 feet ($4^m 6$) high, $3\frac{1}{2}$ cables north-north-westward of the northern entrance point of the River Greeta, consists of two rocky patches, the southern of which dries 3 feet ($0^m 9$), and the northern 5 feet ($1^m 5$). The southern rock is marked by a black beacon surmounted by a globe and cross, and the northern by a similar beacon without the cross.

Mooring buoys.—Several mooring buoys are situated north-north-westward of Eilean na Gothail light-structure.

Local magnetic anomaly.—Local magnetic anomaly was reported, 25 in 1933, to exist over a small area about $1\frac{1}{2}$ cables northward of Seid rocks beacon.

Chart 512.

Anchorages and inlets.—Directions.—Mol Sandwick Beag, which dries, is entered about 4 cables northward of Holm point.

- 30 Mol Sandwick is entered about 3 cables north-westward of Mol Sandwick Beag (*Lat. $58^{\circ} 12' N.$, Long. $6^{\circ} 21' W.$*); it is a shallow open bay, affording no anchorage. The eastern side of this bay is foul for about half a cable offshore, and the head of the bay dries out about one cable. About $1\frac{1}{2}$ cables north-north-eastward of the head of the 35 bay is Sandwick manse, surrounded by woods, and visible from the entrance.

Sgeir Mòr Inaclete, on the western side of the entrance to Mol Sandwick, is described on page 457.

Glumaig harbour, on the south-western side of Stornoway harbour, 40 has depths of over 30 feet ($9^m 1$), and is the best anchorage at Stornoway, but inconveniently distant from the town; it is used as the quarantine anchorage, and is also the principal coaling place. A vessel should anchor with the smearing house on Arnish isthmus, bearing about 172° , and the northern extremity of Arnish peninsula bearing 45 055° .

A large vessel should anchor about midway between Eilean na Gothail and the salient point on the south-western side of the harbour, $3\frac{1}{2}$ cables south-south-westward, with the conical roof of the market on No. 1 pier bearing 342° , and the coastguard flagstaff on Inaclete 50 point, bearing 063° .

Vessels should not anchor near the foul area about $2\frac{1}{2}$ cables north-westward of Seid rocks beacon, nor above Eilean na Gothail except for a short stay, as the holding ground is indifferent, and the space is required for steamers and fishing boats approaching the piers.

Chart 512.

Piers.—There are two piers; No. 1 is about 610 feet (185^m9) long, and No. 2 is 344 feet (104^m8).

On No. 1 pier are the steamboat offices, Harbour Master's office, fish market, and a high white flagstaff. The fish market is an octagonal brick building with a high conical roof, painted red, cupola, and vane; it is conspicuous. 5

North Beach quay, northward of No. 1 pier, has depths of from 9 to 13 feet (2^m7 to 4^m0) alongside its western side, and depths of from 6 to 8 feet (1^m8 to 2^m4) alongside its northern side. 10

Charts 1919, 512.

Directions.—The land eastward of Stornoway harbour, and between it and Eye peninsula, is comparatively low, and nowhere attains an elevation of more than 100 feet (30^m5). In hazy weather Beinn Mholach, 6 miles north-westward of Reef Rock light-beacon, may be first identified, when a vessel should approach with it bearing about 314° until the entrance is distinguished. 15

A vessel approaching from eastward should keep about half a mile southward of Chicken head (page 454), and should not alter course north-westward until Arnish Point lighthouse (*Lat. 58° 11' N., Long. 20° 6' 22' W.*) bears 288° and is open southward of Holm island, so as to pass southward of Chicken rock; at night, a vessel should not alter course north-westward until Arnish Point light is in sight, between the bearings of 302° and 013°, so as to pass southward of Chicken rock, Holm island and Holm point. 25

Chart 1919.

The approach from southward is free from dangers. A vessel entering the harbour should pass about half a cable north-eastward of Reef Rock light-beacon, keeping the outer building on No. 1 pier bearing 318° and just open south-westward of the south-western side of Eilean na Gothail, until Scid Rocks beacon bears 250°, whence she can steer for the anchorage south-westward of Eilean na Gothail. 30

A vessel intending to anchor in Glumaig harbour should pass about one cable eastward and northward of Scid Rocks beacon, and enter this harbour with the smearing house on Arnish isthmus bearing about 172°, anchoring in a depth of 6½ fathoms (11^m9), as directed on page 458. 35

Stornoway.—Stornoway, the chief town of the Outer Hebrides, extends along the north-eastern shore of the harbour north-westward of Inaclete point. There is a sailors' home near the quay, and Lewis cottage hospital, 6½ cables north-eastward of No. 1 pier, is available for seamen in case of need. 40

The population of Stornoway in 1951 was 4,954.

Communications.—There is frequent communication by sea with Mallaig, Kyle of Lochalsh, and Portree. There is also regular communication with Glasgow, Oban, Belfast, Aberdeen, Dundee, Leith, Liverpool and Manchester. 45

There is a post and telegraph office here, which is connected with the general telephone system.

Coastguard. — **Life-saving.** — **Storm signals.** — There is a coastguard station on Inaclete point (*Lat. 58° 12' N., Long. 6° 22' W.*); and a coastguard look-out station and flagstaff above Holm point; see page 10. 50

A motor life-boat is stationed and a line-throwing apparatus is

Chart 1919.

maintained at Stornoway; (*see page 9*). Distress signals are made from the coastguard look-out station. *See page 6.*

5 Storm signals are displayed at the coastguard look-out station; *see page 6.*

Port facilities.—Provisions of all kinds are obtainable. A stock of coal is maintained. A coal hulk is moored north-westward of Seid Rocks beacon; it rolls heavily in southerly winds and coaling becomes difficult. Two other coal hulls are moored in Glumaig harbour.

10 Water is laid on to the pier. Repairs can be executed.

Trade.—The principal imports are coal, tar, stone, wood, cement, lime, staves, flour, meal and salt. The chief exports are fish, cattle, and Harris tweed.

Climatic table.—*See page 38.*

15 *Charts 512, 1794.*

Coast.—Light.—The coast between Chicken head (page 454) and Rubha na Strianaich, about $1\frac{1}{2}$ miles east-north-eastward, is fairly steep-to, rocky and cliffy, and indented by several small bays. Bayble bay is entered between Rubha na Strianaich and Eilean a Chaise, 20 about three-quarters of a mile north-north-eastward.

Chart 1794.

The coast between Eilean a Chaise and Rubha na Greine, about $1\frac{1}{2}$ miles north-eastward, and thence to Tiumpan head, about $2\frac{1}{2}$ miles farther north-north-eastward, is much indented, but there are no 25 off-lying dangers.

Tiumpan head, the north-eastern extremity of Eye peninsula, rises to a hill, about 200 feet (61^m0) high, which is visible from southward or south-westward before the adjacent land, but it is difficult to distinguish from eastward, as the higher land which forms the central 30 portion of the peninsula shows above it. The head is steep-to, there being a depth of 20 fathoms (36^m6) half a mile from it.

A light is exhibited, at an elevation of 176 feet (53^m6), from a white tower, 69 feet (21^m0) in height, situated on Tiumpan head (*Lat. $58^{\circ} 16' N.$, Long. $6^{\circ} 08' W.$*); *see view facing this page.*

35 A prominent framework mast, 100 feet (30^m5) high, stands about $2\frac{1}{2}$ miles south-westward of Tiumpan head.

Coastguard station.—There is a coastguard station at Portnaguran. (Port Naguiran), about one mile westward of Tiumpan head. *See page 10.*
Chart 512.

40 **Dangers.**—Eilean a Chrotaich, situated $8\frac{1}{2}$ cables castward of Chicken head and about $1\frac{1}{2}$ cables offshore, is small, bare, and about 84 feet (25^m6) high; there is a channel, with a depth of 6 fathoms (11^m0) between it and the coast. Eilean Mòr Bayble, about $9\frac{1}{2}$ cables north-eastward of Eilean a Chrotaich and three-quarters of a cable 45 offshore, are two rocks close together, 68 feet (20^m7) high; these rocks are steep-to, and there is a channel, with a least depth of $4\frac{1}{2}$ fathoms (7^m8) in the fairway, westward of them.

Chart 1794.

Tidal streams.—Off the eastern side of Eye peninsula the streams 50 are weak, spring rate not more than from 0.5 to 0.8 knot, and much affected by wind, and must be considered variable along the whole of the coast from Chicken head to Tiumpan head. *See also Table of tidal streams for station K01 in Tidal Streams European Waters, Part II. 1948.*



Tiupan Head lighthouse from eastward.
(Original dated prior to 1871.)



Edan Stone.

Castle
Tiupan.

Oronsay.

Fargubar's
point, holding
025°, 2½ miles.

Entrance to Loch Moidart.
(Original dated 1861.)

6

Chart 512.

Bayble bay.—Bayble bay is somewhat protected from south-westerly winds by Rubha Strianaich and Eilean Mòr Bayble. A small vessel can get far enough in to obtain shelter from south-south-westerly winds. There is a considerable fishing industry here.

There is a concrete pier at the head of this bay, about $5\frac{1}{2}$ cables northward of Rubha Strianaich, with a depth of 12 feet (3^m7) at high water alongside its outer end.

Charts 512, 1794, 2386.

Broad bay.—Broad bay or Loch a Tuath is entered between Tiumpan head (*Lat.* $58^{\circ} 16' N.$, *Long.* $6^{\circ} 08' W.$) and Tolsta head, $4\frac{1}{2}$ miles northward.

Tolsta head is a prominent headland, about 218 feet (66^m4) high and steep-to, which presents a vertical cliff eastward. Creag Fhraoch, $3\frac{1}{2}$ miles south-westward of Tolsta head, is a cliff, 168 feet (51^m2) high.

Banks, with depths of less than 5 fathoms (9^m1) over them, extend about three-quarters of a mile from the heads of the bights on the north-western shore of Broad bay, but only from about one to 3 cables from the entrance points of these bights. There are no dangers beyond $1\frac{1}{2}$ cables from the south-eastern shore of Broad bay, for 3 miles from Tiumpan head. Towards the head of the bay a bank, with depths of less than 3 fathoms (5^m5) over it, on which lie some rocky reefs which dry out $3\frac{1}{2}$ cables, extends as much as $5\frac{1}{2}$ cables offshore.

Chart 2386.

25

Sgeir Leathann, about 7 cables south-westward of Creag Fhraoch and 4 cables offshore, is a few feet high; Lada sgeir lies close southward of it.

Charts 1794, 2386.

McIver rock, about $3\frac{1}{4}$ miles south-south-westward of Creag Fhraoch and $1\frac{1}{2}$ miles from the south-eastern shore of the bay, dries, and is steep-to. Kebock head (page 448), bearing 192° and just open westward of Ramadale point, 6 miles south-westward of Tiumpan head, leads close westward of this rock.

A vessel can anchor in the entrance to Broad bay, in depths of from 13 to 16 fathoms (23^m8 to 29^m3), rock and sand, in fog, or during a westerly gale, but it is not advisable to go far in, for should the wind shift to the north-eastward or eastward, a heavy sea comes home.

Tidal streams.—In about the middle of Broad bay the in-going stream begins about —0600 Stornoway (+0210 Dover), and the out-going stream begins about H.W. Stornoway (-0415 Dover); these streams are very weak. During the south-going stream off Tolsta head the stream runs south-south-westward, at a rate which decreases gradually from Tolsta head, along the western shore of the bay, round its head, and for some little distance north-eastward along its eastern shore; during the north-going stream off Tolsta head there appears to be no stream along the eastern shore of the bay, but from the head of the bay the stream runs north-north-eastward along its western shore at a rate which increases gradually towards Tolsta head.

Chart 2386.

50

Coast.—Dangers.—Beacon.—Between Tolsta head and Rubh' an t Seileir, $4\frac{1}{2}$ miles northward, the coast forms an open bay, and on its south-western side is a large sand drift which is a good mark in thick weather. The northern part of this coast consists of sloping

Chart 2386.

braes and vertical cliffs, with a few caves and detached above-water rocks. There are no outlying shoals, but the depths are shoal for some distance offshore.

5 Chart 1954.

Cellar head is three-quarters of a mile northward of Rubh' an t Seileir; the southern portion of the head consists of vertical cliffs, but the northern part terminates in several sloping points, the land in the background attaining an elevation of about 400 feet

10 (121^m9).

The coast between Cellar head (*Lat. 58° 26' N., Long. 6° 10' W.*) and Rubha Geal, about 2½ miles northward, consists of gravel bays, separated by rocky points; the cliffs gradually decreasing in height.

15 Rubha Geal terminates northward in a rather peculiar peak which falls with a vertical cliff on its northern side, and slopes south-eastward to a point. A small beacon stands about 4 cables westward of Rubha Geal. Berie, the northern entrance point of Callicvol or Port of Ness, lies about 2 miles north-westward of Rubha Geal.

20 Braga rock, about 3 cables north-north-eastward of Rubha Geal and about 2 cables offshore, dries 11 feet (3^m4); there is a depth of 9 fathoms (16^m5) between it and the coast.

Charts 1954, 2386.

The eastern extremity of Tolsta head, bearing 179° and just open 25 eastward of Cellar head, leads eastward of Braga rock.

Chart 1954.

The coast between Berie and Butt of Lewis, about 2 miles north-westward, is rugged, and attains an elevation of about 140 feet (42^m7); there are no outlying shoals.

30 Butt of Lewis is described on page 424.

Dun Eistean, a rocky islet, 50 feet (15^m2) high, situated close offshore, about three-quarters of a mile north-westward of Berie, should be given a good berth in heavy weather, as a short, confused, and dangerous sea runs off it.

35 Charts 1954, 2386.

Tidal streams.—Between Tiumpan head and Tolsta head the streams become gradually more regular than off the eastern side of Eye peninsula (*see page 454*), and off the coast between Tolsta head and Rubha Geal the south-going stream begins —0540 Stornoway

40 (+0230 Dover), and the north-going stream begins +0045 Stornoway (-0330 Dover); spring rate in each direction off the salient point is about 2 knots, but there is little stream in the bays between the points.

For tidal streams off Butt of Lewis *see page 425.*

Chart 1954.

45 **Callicvol and Port Sto.**—Callicvol or Port of Ness is a small open bay, free from dangers; the bottom is sand, and the depths are moderate. There is a boat harbour, which dries, on the northern side of the bay, but only at and after half flood can large fishing boats enter, and not even then in stormy weather.

50 There is a fishing station here. The village chiefly consists of some black huts and a church (*Lat. 58° 30' N., Long. 6° 15' W.*).

Port Sto, about 5 cables south-eastward of Butt of Lewis, is a small indentation terminating in a sandy bay; the head of this bay dries out about half a cable. There is a fishing station here.

Charts 2508, 2635.

Charts 2386, 2475.

THE MINCH.—The Minch is described as far northward as Rubha na h Aiseig, at the northern end of Skye, on page 374.

North Minch is that part of Minch channel north-eastward of Little Minch, and between Lewis and the coast of Scotland; it has a least width of about 20 miles.

Chart 1794.

Directions.—There are several channels through the chain of islets and rocks extending across the Minch from the northern end of Skye towards Scalpay (page 432) off Harris; of these, that between Eilean Glas (page 432) and Sgeir Inoe (page 427) is about 2½ miles wide. There is a channel between Rubha Hunish (page 513) and Eilean Trodday (page 514), and the islets and dangers north-westward of them, which is about 2½ miles wide. The other channels are subject to whirlpools and overfalls, with a broken and dangerous sea. 15

A vessel passing through the Minch should follow the tracks recommended, northward and southward, which are indicated by pecked lines on the chart.

Currents.—See page 377.

Charts 2508, 2635.

CHAPTER IX

POINT OF ARDNAMURCHAN TO MALLAIG HARBOUR— SMALL ISLES—WESTERN AND NORTHERN COASTS OF SKYE

Chart 2507.

COAST.—The coast between Point of Ardnamurchan (page 287) and Sanna point, about 2 miles north-eastward, is rocky and rugged, and forms two bays, the north-eastern of which is called Sanna bay; both bays are open north-westward.

Sanna point (*Lat. 56° 45' N., Long. 6° 11' W.*) has an irregular outline forming several summits, over the hollows between which the top of Ardnamurchan lighthouse is occasionally visible from north-eastward.

10 White Sand bay, entered between Sanna point and Rubha Carrach, $1\frac{1}{2}$ miles east-north-eastward, shows well from northward and eastward. Rubha Carrach is an overhanging cliff, about 200 feet (61^m0) high, with bright orange-coloured lichens showing in patches over the black rock. From Rubha Carrach the coast for about 2 miles eastward 15 to the entrance to Faskadale bay, is more or less cliffty and indented, with rugged hills in the background. The cliffs end suddenly at the western entrance point of Faskadale bay, where they are about 300 feet (91^m4) high, with a fissure reaching from top to bottom. Faskadale house, on the coast, about $4\frac{1}{2}$ cables south-eastward of the western 20 entrance point of Faskadale bay, is a slated cottage facing northward.

Between the eastern entrance point of Faskadale bay and Ru Ardtoe, $1\frac{1}{2}$ miles eastward, the coast forms a bay.

From Ru Ardtoe the coast for about $1\frac{1}{2}$ miles east-north-eastward to Ockle point, and thence $1\frac{1}{2}$ miles east-north-eastward to Rubha Aird 25 Druimnich is indented by several small bights, all of which are open and fringed in many places by rocks. Ockle point is a salient point, presenting columnar basaltic cliffs north-eastward, and grassy slopes south-westward. Rubha Aird Druimnich shows a decided summit a little inside the point on easterly or westerly bearings.

30 **Aspect.**—The land attains a considerable elevation within $1\frac{1}{2}$ miles of this part of the coast. Meall nan Con, situated about $1\frac{1}{2}$ miles southward of Faskadale house, is 1,424 feet (434^m0) high. Beinn an Leathaid, three-quarters of a mile east-south-eastward of Meall nan Con, is 1,310 feet (399^m3) high. Beinn Bhreac, 2 miles south-south-eastward of Rubha Aird Druimnich, attains an elevation of 1,161 feet (353^m9).

Dangers.—Light-buoy.—Bo Kora Ben, about 6 cables north-north-eastward of Ardnamurchan lighthouse and about 2 cables offshore, has a depth of less than 6 feet (1^m8) over it. Several above-

Chart 2507.

water and sunken rocks extend about $4\frac{1}{2}$ cables south-south-westward from Sanna point and about $3\frac{1}{2}$ cables from the eastern side of Sanna bay.

Bo ha na Crag, about $2\frac{1}{2}$ cables westward of Rubha Carrach, dries 5 about 5 feet ($1^m 5$); rocks, which dry, extend about $1\frac{1}{2}$ cables westward from Rubha Carrach. Rubha Aird Druimnich, bearing about 083° and well open northward of the northern coast of Ardnamurchan, leads about $6\frac{1}{2}$ cables northward of Bo ha na Crag.

A bank, with a least depth of 9 fathoms ($16^m 5$) over it, rock, lies 10 about $1\frac{1}{2}$ miles north-westward; and a bank with a depth of 8 fathoms ($14^m 6$) over it, rock, lies about $1\frac{1}{2}$ miles north-westward of Rubha Carrach.

Elizabeth rock (*Lat. $56^\circ 47' N.$, Long. $6^\circ 06' W.$*), about $1\frac{1}{2}$ miles northward of the western entrance point of Faskadale bay, has a depth 15 of 4 feet ($1^m 2$) over it; Bo Faskadale, about 2 miles northward of the same point, has two detached heads, the southern, with a least depth of 4 feet ($1^m 2$) over it, and the northern one awash. These rocks lie on the western part of a bank, which extends about $2\frac{1}{2}$ miles north-eastward and south-westward, and has depths of from 5 to 20 19 fathoms ($9^m 1$ to $34^m 7$) over it.

A conical light-buoy, painted black, and exhibiting a *white group flashing light*, showing *three flashes every eighteen seconds*, is moored on the north-western side of Bo Faskadale.

White Sand bay, bearing 240° and just open north-westward of 25 Rubha Carrach, leads about half a mile south-eastward of Elizabeth rock. Ardnamurchan lighthouse, bearing 217° and just open north-westward of Sanna point, leads about 8 cables north-westward of Bo Faskadale. The eastern extremity of Eilean Chathastail (page 479), in line with the manse on Eigg, about $1\frac{1}{2}$ miles farther north-north- 30 westward, bearing 339° , leads about 7 cables eastward of Bo Faskadale. It should be noted that Ardnamurchan light is obscured when bearing more than 217° , consequently the light in sight at night leads north-westward of Bo Faskadale.

Sgeir Charrach, about 3 cables north-eastward of Rubha Aird 35 Druimnich, dries 8 feet ($2^m 4$); two shoals, with a depth of 3 fathoms ($5^m 5$) over them, lie close north-eastward and eastward of Sgeir Charrach. Bo Ruadh, about 5 cables eastward of Rubha Aird Druimnich and about $1\frac{1}{2}$ cables offshore, has a least depth of 2 feet ($0^m 6$) over it. The bottom in the vicinity of Rubha Aird Druimnich is 40 very uneven.

Farquhar's point (*see below*), in line with Dorlin house, bearing 098° , leads northward of the dangers in the vicinity of Rubha Aird Druimnich. *See view facing page 460.*

Tidal streams.—Off Point of Ardnamurchan and in mid-channel 45 between Eigg and the mainland, the north-east-going stream begins + 0545 Stornoway (+ 0130 Dover) the south-west-going stream begins — 0015 Stornoway (— 0430 Dover); the spring rate in each direction is about 1.5 knots off the point and about one knot in mid-channel eastward of Eigg. The streams are very weak in the bay 50 south-eastward of a line joining Sanna point and Ruhh' Arisaig.

Loch Ceann Traigh.—Dangers.—Loch Ceann Traigh, entered between Rubha Aird Druimnich and Farquhar's point, about $2\frac{1}{2}$ miles eastward, is open northward and north-westward and has moderate

Chart 2507.

depths, with a sandy bottom. This loch cannot be recommended as an anchorage, and it is dangerous with onshore winds.

A narrow channel, which is entered about $1\frac{1}{2}$ miles southward of Farquhar's point, leads south-eastward to Kentra bay. There are depths of from 12 to 16 fect (3^m7 to 4^m9) at the entrance to this channel, where it is 200 feet (61^m0) wide, but the greater part of the channel, and the whole of Kentra bay dry.

Sgeir an Egidh, about 9 cables south-south-westward of Farquhar's point, and about $2\frac{1}{2}$ cables from the eastern shore of the loch, is a bare islet, 36 feet (11^m0) high; it is moderately bold on its western side, but a shoal bank extends about one cable northward and southward from it, and between it and the eastern shore the channel is foul. Between Sgeir an Egidh and the entrance to the channel leading to Kentra bay are some rocks and shoals. Dubh sgeir, about 7 cables southward of Sgeir an Egidh and about 3 cables from the eastern shore of the loch, is 3 feet (0^m9) high; between it and Sgeir an Egidh are some shoals, with depths of from 2 to 3 fathoms (3^m7 to 5^m5) over them.

20 There is anchorage about $4\frac{1}{2}$ cables from the head of the loch, in depths of from 7 to 10 fathoms (12^m8 to 18^m3), sand.

Tidal streams.—The streams are very weak in Loch Ceann Traigh but run strongly in the narrow channel to Kentra bay where the in-going stream begins about + 0525 Stornoway (+ 0110 Dover), and the 25 out-going stream begins about - 0055 Stornoway (- 0510 Dover).

Loch Moldart.—Eilean Shona (*Lat. $56^{\circ} 48' N.$, Long. $5^{\circ} 51' W.$*) lies in an opening of the coast between Farquhar's point, which rises to a decided hill, 392 feet (119^m5) high and appears like an island from a distance, and Rubha nan Clach Dearga, $1\frac{1}{4}$ miles north-north-eastward, leaving a narrow and tortuous channel on each side of it. The channel southward of this island is known as South channel, and that on the northern side as North channel. Neither channel should be attempted without local knowledge. Loch Moidart extends eastward from southward of Shona Beag the eastern part of Eilean 35 Shona.

Aspect.—Eilean Shona has a rocky rugged appearance, especially on its western and northern sides. It attains an elevation in Beinn a' Bhàillidh, about $8\frac{1}{2}$ cables south-eastward of its north-western point, of 855 feet (260^m6), but has also several hills of lesser elevations.

40 Dorlin house, $1\frac{1}{2}$ miles south-eastward of Beinn a' Bhàillidh, is a large four-storied house, and about $1\frac{1}{2}$ cables south-eastward of it the hills attain an elevation of about 667 feet (203^m3). The old ruined castle of Tioram stands on an islet $2\frac{1}{2}$ cables north-north-westward of Dorlin house, but it is not noticeable from seaward.

45 **Tidal streams.**—The streams run fairly strongly in the channels northward and southward of Eilean Shona, where they begin about as in the channel to Kentra bay (see above); the streams are weak in the loch.

Channels.—**Anchorages.**—**Submarine cables.**—South channel 50 has depths of from 36 to 48 feet (11^m0 to 14^m6) in its entrance, decreasing to from 20 to 30 feet (6^m1 to 9^m1) in a basin, about 7 cables within the entrance, where there is anchorage with sandy bottom.

Submarine cables cross South channel about $1\frac{1}{2}$ and $2\frac{1}{2}$ miles eastward of Farquhar's point; see page 7.

Chart 2507.

North channel is very narrow, and the entrance is encumbered with above-water and sunken rocks. There are depths of from 12 to 18 feet (3^m7 to 5^m5) in the channel until the bar is reached, about 6 cables within the entrance; here Eilean Shona and the mainland are only 60 yards (54^m9) apart, and the depth on the bar connecting them is 6 feet (1^m8). Above the bar the channel opens out into a basin, with depths of from 8 to 17 fathoms (14^m6 to 31^m1), mud. Above this North channel quickly shoals, and the narrow channel northward of Shona Beag dries. There is no shelter in North channel until a vessel 10 is above the bar.

Though the greater part of Loch Moidart dries there are many places suitable for anchorage, and at high water springs the loch is accessible to vessels of from 14 to 15 feet (4^m3 to 4^m6) draught for about $2\frac{1}{2}$ miles from the entrances of South and North channels. 15

Dangers.—Beacons.—Bogha Mòr, situated in the entrance to South channel, about 2 cables northward of Farquhar's point (*Lat. $56^{\circ} 47' N.$, Long. $5^{\circ} 53' W.$*), dries one foot (0^m3), and is marked by a small black perch. A shoal bank connects Bogha Mòr and the south-western extremity of Eilean Shona. A shoal bank extends a short distance southward from Bogha Mòr, and there are depths of 7 fathoms (12^m8) in the fairway between it and Eilean Raonuill, close northward of Farquhar's point.

The summit of Eilean Raonuill in line with Dorlin house, bearing 101° , leads close southward of the shoal bank southward from Bogha Mòr.

Eilean Raonuill is small, 36 feet (11^m0) high at its western end, with a black cliffy face towards the sea, and prominent. The southern side of this islet is steep-to, but rocks extend about three-quarters of a cable eastward from it, and a red perch marks a rock half a cable north-north-eastward of the islet. Two red perches, about one cable apart, mark the northern edge of the rocks extending off the southern shore of the loch, 2 cables eastward of Eilean Raonuill; these perches are liable to be washed away.

Howorth rock, about one mile north-north-westward of Farquhar's point and about $6\frac{1}{2}$ cables from the western side of Eilean Shona, has a depth of about 6 feet (1^m8) over it, and close south-westward of it is a shoal, with a depth of 3 fathoms (5^m5) over it. Several rocks, some of which dry, lie between Howorth rock and Eilean Shona.

The south-western extremity of an islet $6\frac{1}{2}$ cables north-westward of Rubha nan Clach Dearga in line with Rubh' a' Phuill Bhig (see below), bearing about 044° , leads close north-westward of Howorth rock.

A shoal, with a depth of 5 fathoms (9^m1) over it, lies about $1\frac{1}{4}$ miles west-south-westward of Rubha nan Clach Dearga, and a shoal, with a depth of 4 fathoms (7^m3) over it, lies about one mile westward of the same point.

Charts 2496, 2507.

Coast.—Dangers.—From Rubha nan Clach Dearga the coast trends $1\frac{1}{4}$ miles north-north-eastward to Rubh' a' Phuill Bhig, the southern entrance point of the Sound of Arisaig. Rubh' a' Phuill Bhig is 83 feet (25^m3) high; the land within rises gradually but irregularly, to elevations of over 700 feet (213^m4) about $1\frac{1}{2}$ miles south-south-eastward.

Charts 2496, 2507.

A group of islets, about $4\frac{1}{2}$ cables northward of Rubha nan Clach Dearga, lies from about $1\frac{1}{2}$ to $4\frac{1}{2}$ cables offshore; its western side is moderately steep-to. An Glas eilean (*Lat. 56° 49' N., Long. 5° 53' W.*), the westernmost of this group, is 17 feet ($5^{\text{m}}2$) high. The Red Cow, about $3\frac{1}{2}$ cables north-north-eastward of Eilean Coille, the easternmost islet of the group, and about $1\frac{1}{2}$ cables offshore, dries one foot ($0^{\text{m}}3$).

Chart 2496.

- 10 Am Boc, about $7\frac{1}{2}$ cables north-north-eastward of Eilean Coille and about three-quarters of a cable offshore, dries about 7 feet ($2^{\text{m}}1$). Rocks, which dry, extend about three-quarters of a cable westward from Rubh' a' Phuill Bhig.

SOUND OF ARISAIG.—The sound of Arisaig is entered between 15 Rubh' a' Phuill Bhig and the southern extremity of Arisaig promontory, $2\frac{1}{2}$ miles north-north-westward. Its southern shore is generally steep-to, but many rocks and islets lie within one mile of its northern shore. There is always a heavy sea on the southern shore with onshore winds.

- 20 Ardnish peninsula, at the eastern end of the sound, dividing Lochs Ailort and nan Uamh, is generally hilly, but with many valleys and several lochs. The neck connecting the peninsula with the mainland is low, about one mile wide, and a large part of it is occupied by a loch.

- 25 **Tidal streams.**—The streams are barely perceptible. The in-going stream begins about + 0525 Stornoway (+ 0110 Dover), and the out-going stream begins about — 0055 Stornoway (— 0510 Dover).

Islets and dangers.—Eilean a' Ghail, situated about 3 cables west-south-westward of the southern extremity of Arisaig promontory 30 and 2 cables from the northern side of the entrance, has a square cliffy top, 68 feet ($20^{\text{m}}7$) high, sloping westward, and appearing like a ruin from north-westward. Black rocks extend from about $2\frac{1}{2}$ cables westward to $5\frac{1}{2}$ cables north-westward from Eilean a' Ghail, and lie in the southern approach to Port a' Bhathaich; the southern 35 rock of this group is about 10 feet ($3^{\text{m}}0$) high, and of a black appearance.

A rocky patch, with a depth of 8 fathoms ($14^{\text{m}}6$) over it, lies about $1\frac{1}{2}$ miles westward of Eilean a' Ghail, and several patches, with depths of from 7 to 9 fathoms ($12^{\text{m}}8$ to $16^{\text{m}}5$) over them, lie within $1\frac{1}{2}$ miles south-westward of the same islet; these patches have not been 40 examined, and less depths may exist.

Eilean an t-Snidhe, about half a mile southward of Eilean a' Ghail, is a group of three islets. A basaltic pillar forms the highest part of the eastern islet, which is 33 feet ($10^{\text{m}}1$) high. A small peaked rock, about half a cable westward of this group, dries about 13 feet 45 ($4^{\text{m}}0$). The Bellows, about $1\frac{1}{2}$ cables southward of this group, has a depth of 4 feet ($1^{\text{m}}2$) over it, and the sea is said to break over it except in a calm sea. Harpy rock, about $3\frac{1}{2}$ cables north-north-eastward of Eilean an t-Snidhe, dries, and is covered with long brown seaweed.

The south-easternmost of Black rocks, bearing 296° and open 50 south-westward of Eilean a' Ghail (*Lat. 56° 52' N., Long. 5° 54' W.*), leads south-westward of Harpy rock.

Gulhare rock, about $1\frac{1}{2}$ miles eastward of Eilean an t-Snidhe, has a depth of 10 feet ($3^{\text{m}}0$) over it.

Chart 2496.

The summit of Muck (page 476), bearing about 264° and open southward of Eilean an t-Snidhe, leads southward of Gulnare rock.

Samalaman island, about 6 cables eastward of Rubh' a' Phuill Bhig and close off the southern shore, to which it is joined by a reef that dries, is 53 feet ($16^{m}2$) high. Glenug house, $2\frac{1}{2}$ cables southward of the southern extremity of Samalaman island, is two-storied and slated. Rubh' a' Chàirn Mhoir, lying $8\frac{1}{2}$ cables eastward of Samalaman island, is connected with the shore by a reef that dries.

Borrodale islands extend about $1\frac{1}{4}$ miles north-eastward from a position about $1\frac{1}{2}$ miles eastward of the southern extremity of Arisaig promontory, along the north-western side of the entrance to Loch nan Uamh. The islets of this group, bordering the channel, named in order from the south-westward, are An Glas eilean, 49 feet ($14^{m}9$) high, Eilean an Sgùrra, 57 feet ($17^{m}4$) high, and Eilean nan Cabar, 46 feet ($14^{m}0$) high. A rock on the summit of Eilean an Sgùrra has the appearance of a castle. Sgeir Dubh, about 2 cables eastward of An Glas eilean, is 12 feet ($3^{m}7$) high, and is steep-to on its southern side. Astly rock, about $1\frac{1}{2}$ cables south-westward of An Glas eilean, has a depth of 4 feet ($1^{m}2$) over it, and 2 cables southward of the same islet is a shoal, with a depth of $2\frac{1}{2}$ fathoms ($4^{m}6$) over it.

Charts 2496, 2507.

An Sgùrr (page 478), bearing 275° and open southward of this islet, leads about $2\frac{1}{2}$ cables southward of this $2\frac{1}{2}$ -fathom ($4^{m}0$) shoal.

Chart 2496.

25

A shoal, with a depth of $6\frac{1}{2}$ fathoms ($11^{m}9$) over it, lies about 9 cables north-north-westward of Rubh' a' Chàirn Mhoir; it has not been examined, and less depths may exist. Priest rock, about 8 cables north-north-eastward of the same point, dries $3\frac{1}{2}$ feet ($1^{m}1$); there are depths of 4 fathoms ($7^{m}3$) close northward of Priest rock.

30

Sithean Mòr, 1,963 feet ($598^{m}3$) high, 3 miles north-eastward of Eilean nan Cabar, bearing 081° and open north-westward of Rubha Chaolais, the northern entrance point of Loch Ailort, leads north-westward of Priest rock.

Sgeir Ghlas, about $7\frac{1}{2}$ cables north-eastward of Rubh' a' Chàirn Mhoir (*Lat. $56^{\circ} 50' N.$, Long. $5^{\circ} 48' W.$*), is a round rocky islet, 42 feet ($12^{m}8$) high; a rock, which dries, lies close westward and a rock, awash, lies one cable eastward of this islet. The channel between Sgeir Ghlas and Eilean nan Gobhar, 2 cables east-north-eastward, is foul.

40

The south-western part of Eilean nan Gobhar is connected with the north-eastern part by a rough stony beach, which nearly covers at high water; the south-western part is 132 feet ($40^{m}2$) high, showing a rocky face westward, and on its summit are the remains of a vitrified fort. There is a rock, with a depth of one foot ($0^{m}3$) over it, situated close south-eastward of the southern extremity of Eilean nan Gobhar, and a reef, which dries, extends half a cable from the eastern side of this islet. A rock, with a depth of 6 feet ($1^{m}8$) over it, lies close northward of the northern extremity of Eilean nan Gobhar.

Eilean a' Chaolais, 2 cables north-north-westward of Eilean nan Gobhar, is 69 feet ($21^{m}0$) high; close off its south-eastern extremity is a rock awash.

The channel between Eilean a' Chaolais and Eilean nan Gobhar is free from dangers, with the exception of the rock, with a depth of

Chart 2496.

6 feet ($1^m 8$) over it, close northward of Eilean nan Gobhar. A narrow channel, with a depth of 2 fathoms ($3^m 7$), separates Eilean a' Chaolais from Rubha Chaolais; there is a dangerous sea in this channel with 5 the west-going tidal stream and a strong westerly wind.

Anchorages and inlets.—Port Doire na Drise, on the northern side of the Sound of Arisaig, is a small inlet, which is partially sheltered by Eilean a' Ghail. Camas Drollaman, entered about 4 cables east-north-eastward of Eilean a' Ghail, is a snug boat harbour, the head of 10 which dries out about $1\frac{1}{2}$ cables. Camas Leathann, entered about 6 cables north-eastward of the eastern entrance point of Camas Drollaman, is an open bay with a long gravel beach, a similar beach lies close eastward, but is not so remarkable.

Glenuig bay is entered about 5 cables east-south-eastward of Samalaman island, on the southern side of the Sound of Arisaig; it only affords good shelter for boats during offshore winds. The head of this bay dries out about $1\frac{1}{2}$ cables, and there are some rocks in the centre of the bay, which dry. The Roman Catholic chapel on the western side of the head of Glenuig bay, is visible from north-north-eastward.

20 There is a jetty on the south-eastern side of Glenuig bay.

Loch Ailort.—Loch Ailort is entered between Rubha Chaolais and Goirtean na Caorach (*Lat. $56^{\circ} 51' N.$, Long. $5^{\circ} 46' W.$*), one mile south-south-eastward; it is an excellent harbour for moderate-sized vessels in case of emergency, and is well sheltered by the islets across 25 its entrance.

Rois-bheinn, $2\frac{1}{2}$ miles eastward of Goirtean na Caorach, has a rounded summit, 2,869 feet ($874^m 4$) high, and An Stac, one mile north-eastward of it, has a peaked summit. Heavy squalls come down from these mountains during south-easterly and easterly gales; higher up the 30 loch, with these winds, the squalls are violent, and boats should never carry sail.

Lochailort railway station is situated about half a mile inland from the head of the loch. There is a jetty on the southern side of the bay at the head of the loch.

35 **Tidal streams.**—The streams run fairly strongly in the entrance channels between Eilean a' Chaolais, Eilean nan Gobhar, and the shore on either side. The in-going stream begins about + 0525 Stornoway (+ 0110 Dover), and the out-going stream begins about - 0055 Stornoway (- 0510 Dover). With westerly gales the sea breaks across 40 the channels with the out-going stream. The streams in the loch are weak.

Dangers.—Anchorages.—The islets and dangers in the entrance to Loch Ailort are described on page 468.

The southern shore of the entrance to Loch Ailort is moderately 45 bold, but two rocks, a few feet high, lie close off Goirtean na Caorach.

About one mile within Eilean nan Gobhar there is a rocky bar with many rocky heads, which dry, and depths of one fathom ($1^m 8$) in the channels between them; above this bar the loch narrows, and is intricate and shoal in places.

50 At the head of the loch is a basin, with depths of from one to 19 fathoms ($1^m 8$ to $34^m 7$).

Charts 2496, 2507.

The best anchorage is about one cable eastward of Eilean nan Gobhar, with An Sgùrr bearing about 280° and showing over the

Charts 2496, 2507.

neck of Eilean nan Gobhar (*Lat. 56° 51' N., Long. 5° 47' W.*), in depths of from 3 to 4 fathoms (5^m5 to 7^m3), clay and sand; this position is well sheltered from the swell and the holding ground is good.

Chart 2496.

There are greater depths farther southward, and plenty of room north-eastward, in depths of from about 3 to 3½ fathoms (5^m5 to 6^m4).

Loch nan Uamh.—Loch nan Uamh, on the north-western side of Ardnish peninsula, being open south-westward, does not afford good anchorage for large vessels. Small vessels can obtain sheltered anchorage at the head of the loch, and also in places on the northern shore northward of Borrodale islands.

Beasdale railway station is situated on the northern side of the loch, about 1½ miles east-north-eastward of Eilean nan Cabar.

Tidal streams.—The streams are very weak. The in-going stream begins about + 0525 Stornoway (+ 0110 Dover), and the out-going stream begins about — 0555 Stornoway (— 0510 Dover).

Islets and dangers.—The islets and dangers on the northern side of the Sound of Arisaig, in the western approach to Loch nan Uamh, are described on page 468, and Borrodale islands, on the north-western side of the entrance to the loch, on page 469.

A shoal, with a depth of 6 fathoms (11^m0) over it, lying about 8½ cables north-north-westward of Rubha Chaolais, has not been examined, and less depths may exist. Sgeir nan Eilid, about one mile east-north-eastward of Eilean nan Cabar and 1½ cables from the northern shore, is an above-water rock; Bogha Sgeir nan Eilid, with a depth of 3 feet (0^m9) over it, lies about 2 cables south-south-westward of it. There are several shoals in this vicinity, with depths of from 5 to 9 fathoms (9^m1 to 16^m5) over them; these shoals have not been examined, and less depths may exist. Eilean Gobhlach, about 7 cables eastward of Sgeir nan Eilid and one cable from the northern shore, is a heath-covered islet with two summits.

Anchorages.—Buoy.—Saideal Druim an Daraich, an inlet close northward of Eilean nan Cabar, is suitable for small vessels up to 150 feet (45^m7) in length; the best approach to this inlet is eastward and northward of Eilean nan Cabar, but the channel northward of this islet is narrowed by two rocks to a width of less than one cable.

Rafter's reef, one of these rocks, about half a cable north-eastward of Eilean nan Cabar (*Lat. 56° 53' N., Long. 5° 48' W.*), dries one foot (0^m3), and is marked by a red can buoy. The other rock, 65 yards (59^m4) eastward of Rubh' Ard Mhòir, the promontory 1½ cables northward of Eilean nan Cabar, has a depth of 2 feet (0^m6) over it.

There are other entrances to Saideal Druim an Daraich, but local knowledge is necessary.

The best anchorage in this vicinity is about one cable west-south-westward of Rafter's Reef buoy, in a depth of about 8 fathoms (11^m0); no swell is felt here, and the holding ground is good.

Borrodale bay is entered between Rubh' Ard Mhòir and Rubh' Ard Ghamhsgail, 4½ cables eastward; it may be identified by its broad shingly beach, and it affords anchorage during the summer, in a depth of 14 fathoms (25^m6), but the holding ground is not very good.

Arisaig house, 5½ cables northward of Rubh' Ard Ghamhsgail,

Chart 2496.

situated on a commanding height, with some fine trees, and a cultivated valley eastward, shows well from southward.

Charts 2496, 2507.

5 Directions.—A vessel approaching from southward, and bound for either Loch Moidart, Loch Aillort, or Loch nan Uamh, after rounding Ardnamurchan lighthouse should pass north-westward of Bo ha na Crag, and southward of Elizabeth rock.

10 Rubha Aird Druimnich should be given a berth of about one mile, because the bottom off it is very uneven.

Chart 2496.

COAST.—Rhu Arisaig or Arisaig promontory is a rugged peninsula with several hills; it divides the Sound of Arisaig from Loch nan Ceall (Arisaig harbour); the western coast of this peninsula is indented *15* and rocky.

From abreast Eilean Ighe, an island 61 feet ($18^{\text{m}}6$) high, situated on the northern side of the entrance to Loch nan Ceall, about 2 miles north-north-eastward of Rubh' Arisaig, the north-western extremity of the promontory, and Rubha Dà Chuain, about 2 miles north-north-*20* eastward, the coast consists of a succession of sandy bays and rocky points. Back of Keppoch, a village of white cottages, extends about $1\frac{1}{2}$ miles eastward from the coast abreast Eilean Ighe. From Rubha Dà Chuain (*Lat.* $56^{\circ} 57' N.$, *Long.* $5^{\circ} 51' W.$) to the entrance to River Morar, about 7 cables north-north-eastward, the coast is generally *25* rocky, with sandy beaches, and rises to an elevation of about 300 feet ($91^{\text{m}}4$) from 2 to 5 cables inland. Thence to Rubha na h-Acairseid, $2\frac{1}{2}$ miles north-north-eastward, the coast is rocky, with hills attaining elevations of from 127 to 382 feet ($38^{\text{m}}7$ to $116^{\text{m}}4$) about a quarter of a mile inland.

30 Dangers.—Beacon.—Eilean Port nam Murrach, situated close offshore, about $8\frac{1}{2}$ cables west-north-westward of Eilean a' Ghail (page 468), is a prominent, peaked, rocky islet, 40 feet ($12^{\text{m}}2$) high.

Meallan Odhar is a chain of rocks extending about $3\frac{1}{2}$ cables north-north-eastward from a position about $4\frac{1}{2}$ cables west-north-westward *35* of Eilean Port nam Murrach; the southern part of these rocks is about 4 feet ($1^{\text{m}}2$) high, and the north-eastern part dries about 6 feet ($1^{\text{m}}8$).

Between Meallan Odhar and Rubh' Arisaig there are several rocks with narrow channels between them.

40 Luinga Mhòr, about $5\frac{1}{2}$ cables northward of Rubh' Arisaig, lies at the south-western end of the bank which fronts the entrance to Loch nan Ceall, and on the northern side of the entrance to South channel; it is the largest and highest islet on this bank, and attains an elevation of 48 feet ($14^{\text{m}}6$). The bank, on which there are many islets *45* and rocks, extends about 6 cables east-south-eastward from the southern side of Luinga Mhòr; the southernmost of these rocks, about 5 cables south-eastward of the eastern extremity of Luinga Mhòr, dries 5 feet ($1^{\text{m}}5$), and is marked by a small iron perch.

Luinga Bheag, at the north-western end of the bank fronting the *50* entrance to Loch nan Ceall, about 5 cables north-north-eastward of Luinga Mhòr, is 30 feet ($9^{\text{m}}1$) high. Bogha Ighe, about $2\frac{1}{2}$ cables northward of Luinga Bheag, dries 7 feet ($2^{\text{m}}1$). Bogha Leathan, about $7\frac{1}{2}$ cables north-north-eastward of the north-eastern extremity of

Chart 2496.

Luinga Bheag and 2 cables from the north-western side of Eilean Ighe, dries 3 feet (0^m9).

An Cuilean, about $4\frac{1}{2}$ cables northward of the northern extremity of Eilean Ighe, dry 9 feet (2^m7). Beannachd Chreag, about $6\frac{1}{2}$ cables north-north-westward of the same point, dries 12 feet (3^m7); a bank, with depths of less than 5 fathoms (9^m1) over it, extends half a cable westward from this rock, and it should not be approached within a depth of 25 fathoms (45^m7).

There are several islets, above-water and sunken rocks lying between An Cuilean and the coast; no vessel should attempt to pass eastward of An Cuilean and Beannachd Chreag.

An Glas eilean, about $1\frac{1}{2}$ miles north-north-eastward of the northern extremity of Eilean Ighe and half a mile offshore, is a group of islets about 12 feet (3^m7) high. Eilean Dà Chuain, about $1\frac{1}{2}$ cables north-¹⁵ ward of An Glas eilean and 4 cables offshore, is 14 feet (4^m3) high; these islets are partially covered with lichens or grass. Bo Mòr, about 2 cables west-south-westward of Eilean Dà Chuain, dries about one foot (0^m3); a bank, with depths of less than 5 fathoms (9^m1) over it, extends nearly one cable westward from the rock, which ²⁰ should not be approached to a depth of less than 25 fathoms (45^m7). A bank, with a depth of 9 fathoms (16^m5) over it, is situated about $5\frac{1}{2}$ cables west-north-westward from Eilean Dà Chuain, but it has not been examined, and less depths may exist.

The channel eastward of An Glas eilean and Eilean Dà Chuain is ²⁵ shoal and foul, and should not be attempted.

River Morar flows into the sea over a sandy flat; the entrance is indicated by the sandy coast and the opening between the hills.

A rocky bank, with a depth of 10 fathoms (18^m3) over it, lies about ³⁰ $2\frac{1}{2}$ miles northward of Eilean Dà Chuain and one mile offshore; it has not been examined and less depths may exist. A bank, with depths of less than 5 fathoms (9^m1) over it, extends about 3 cables offshore, $1\frac{1}{2}$ miles northward of the entrance to River Morar.

Eilean na h-Acairseid, about 3 miles north-north-eastward of Rubha Dà Chuain and one cable offshore, is 13 feet (4^m0) high. A rock, with ³⁵ a depth of less than 6 feet (1^m8) over it, lies close offshore, about $1\frac{1}{2}$ cables southward of Eilean na h-Acairseid (*Lat. 57° 00' N., Long. 5° 50' W.*); for about $4\frac{1}{2}$ cables southward of this rock, a bank, with depths of less than 5 fathoms (9^m1) over it, extends as much as 2 cables offshore. ⁴⁰

Tidal streams.—Between Rubh' Arisaig and Ruhha na h-Acairseid the streams are weak near the coast, but there appear to be eddies. About one mile westward of Luinga Bheag the north-going stream begins + 0515 Stornoway (+ 0100 Dover) and runs for about $7\frac{1}{2}$ hours; the south-going stream begins + 0015 Stornoway (- 0440 Dover) and ⁴⁵ runs for 5 hours. About 2 miles westward of Eilean na h-Acairseid, the north-going stream begins + 0530 Stornoway (+ 0115 Dover) and runs till - 0030 Stornoway (- 0445 Dover); there is no perceptible south-going stream.

Port nam Murrach.—Port nam Murrach, close eastward of ⁵⁰ Eilean Port nam Murrach, is a small inlet, with depths of from 6 to 12 feet (1^m8 to 3^m7), where boats can obtain shelter from northerly winds.

Loch nan Ceall.—A large sandbank, which dries, fronts the en-

Chart 2496.

trance to Loch nan Ceall; on this bank are numerous islets and rocks, but very few of the latter are above water. Luinga Mhòr and Luinga Bheag, the principal islets, are described on page 472, and the entrance to the loch is southward or northward of these two islets; these two channels are called South channel and North channel, respectively.

The village of Arisaig, at the head of the loch, has a railway station.

Tidal streams.—The in-going stream begins about + 0540 Stornoway (+ 0125 Dover), the outgoing stream begins about - 0055 Stornoway (- 0510 Dover). When the sandbank which fronts the entrance to the loch is dry the streams run very strongly through the channels southward and northward of it, but when the bank is covered the streams spread out across it and are weak in the channels. The in-going stream therefore runs strongly during about its first half, but is weak during its second half; the out-going stream is weak during about its first half, but runs strongly during its second half.

South channel.—Dangers.—Beacons.—Buoys.—South channel is entered between Rubh' Arisaig and the sandbank fronting the entrance to the loch; its navigable width varies from half a cable to one cable. This tortuous channel, being encumbered by rocks, is dangerous to enter, and as the islets in the vicinity are low and inconspicuous they are of no assistance in fixing the position of a vessel.

The only noticeable object within the entrance of South channel is a large stone cottage, or waiting-room, one mile east-north-eastward of Rubh' Arisaig. This cottage is situated on the shore of a bight where the coast takes a sudden bend northward, and behind it is a hollow or valley formed by the southern fall of Tòrr Mòr, a hill, 261 feet (79^m5) high, 1½ miles east-north-eastward of Rubh' Arisaig (*Lat.* 56° 54' *N.*, *Long.* 5° 55' *W.*).

Two rocks, with depths of 18 and 13 feet (5^m5 and 4^m0) over them, are situated 1½ cables northward and north-north-eastward, respectively, of Rubh' Arisaig. A shoal, with a depth of 18 feet (5^m5) over it, lies in the fairway of South channel, about 4½ cables east-north-eastward; a rock, with a depth of 6 feet (1^m8) over it, lies about 5½ cables east-north-eastward; and Cave rock, which dries, lies close offshore about 5½ cables east-north-eastward of the Rubh' Arisaig.

North-eastward of Cave rock are many rocks; those bordering the channel are marked by beacons, but these beacons cannot be depended on.

At the head of the loch the rocks are marked either by iron perches or red buoys.

The least depth in the fairway of South channel is 7 feet (2^m1).

North chaunel.—North channel, entered between Luinga Bheag and Bogha Ighe, is encumbered by rocks and sandbanks and is seldom used, even by those with local knowledge.

Anchorage.—The best anchorage in South channel is 1½ cables offshore, just above Cave rock, in depths of from 27 to 30 feet (8^m2 to 9^m1), where there is no swell. It is not safe for a vessel without local knowledge to proceed farther up.

Directions.—Should it be necessary for a vessel, notwithstanding the danger of so doing, to run for this harbour without local knowledge, in approaching from northward, especially at high water, she should

Chart 2496.

be careful not to mistake Luinga Mhòr for Rubh' Arisaig; this islet extends farther westward than the point, and is comparatively low and flat.

The vessel should steer east-south-eastward for Rubh' Arisaig until 5 the waiting-room, or stone cottage, is nearly in line with the hollow on the southern side of Tòrr Mòr, bearing 080° , when she should keep on this alignment until Rubh' Arisaig bears 205° , whence she should steer for the stone cottage in line with the middle of the hollow, passing a little more than half a cable southward of the iron perch 10 marking the rock, which dries 5 feet (1^m5); (see page 474); thence she should steer for the stone cottage, bearing 080° , and when the small rock one foot (0^m3) high, $2\frac{1}{2}$ cables 060° from the iron perch, bears about 340° , she should steer for the western extremity of the promontory on which is Tòrr Mòr, bearing 034° and anchor as previously 15 directed.

Mallaig harbour.—Islet and dangers.—Lights.—Beacons.—Mallaig harbour, a small bight on the eastern side of Rubha na h-Acairseid, affords shelter to small vessels in westerly gales. It is much frequented by small fishing craft for landing their catches. The 20 land at the back of Mallaig (*Lat. $57^\circ 00' N.$, Long. $5^\circ 50' W.$*) is about 300 feet (91^m4) high, and the town, which is situated on the low land westward, and on the side of hills southward and eastward, respectively, of the harbour, shows up from seaward. Sgeir Dhearg, a rocky ridge about $1\frac{1}{2}$ cables long, the highest part of which dries 14 feet (4^m3), 25 lies about 2 cables north-north-eastward of Rubha na h-Acairseid, and partially protects the harbour.

A light is exhibited, at an elevation of 20 feet (6^m1), from a grey beacon, 25 feet (7^m6) in height, situated on the highest part of Sgeir Dhearg. 30

A shoal, with a least depth of 13 feet (4^m0) over it, lies about $1\frac{1}{2}$ cables northward of Sgeir Dhearg light-beacon.

There is a channel on either side of Sgeir Dhearg. The eastern, or main, channel has a least depth of 3 fathoms (5^m5) in it; the southwestern channel has depths of from 10 to 12 feet (3^m0 to 3^m7) in it, 35 but should not be attempted without local knowledge.

Anchorage is restricted to the head of the harbour, where there are depths of from 3 to $4\frac{1}{2}$ fathoms (5^m5 to 7^m8), as it is necessary to keep the approach to the railway pier clear; the anchorage is very confined and is only suitable for small vessels. 40

Eilean na h-Acairseid, a small rocky islet, 14 feet (4^m3) high, lies 2 cables west-south-westward of Rubha na h-Acairseid; there is a channel for small boats between this islet and the mainland, but local knowledge is essential for its use.

A light is exhibited, at an elevation of 25 feet (7^m6), from a white 45 post, 10 feet (3^m0) in height, on Courteachan point, situated at the north-eastern corner of the harbour.

Leading lights are exhibited, the front light at an elevation of 23 feet (7^m0), from a white post, 16 feet (4^m9) in height; situated on the railway pier; and the rear light, at an elevation of 31 feet (9^m4), 50 from a white post, 23 feet (7^m0) in height, situated 34 yards (31^m1) from the front light-post. These lights in line indicate the channel south-eastward of Sgeir Dhearg.

A white post, surmounted by a triangle, stands on the hillside,

Chart 2496.

south-eastward of the light-post on Courteachan point; these posts in line, bearing 132° , lead from north-westward to the line of the leading lights on the railway pier.

- 5 **Regulations.**—Special by-laws are in force with respect to the conveyance, loading and unloading of explosives at Mallaig harbour; also, with regard to the landing of petroleum and carbide of calcium.

Communications.—Mallaig is connected with the general railway system.

- 10 There is regular communication by sea with Glasgow, Oban, the Hebrides, and small ports on the western coast of Scotland. There is also regular communication with Portree and Stornoway, *via* Kyle of Lochalsh.

15 There is a post and telegraph office which is connected with the general telephone system.

Coastguard.—Life-saving.—An auxiliary watch is kept at Mallaig. See page 10. A motor lifeboat is stationed and line-throwing apparatus is maintained at Mallaig (*Lat.* $57^{\circ} 00' N.$, *Long.* $5^{\circ} 50' W.$). See page 9.

Piers.—Railway pier, a concrete pier, to the head of which the 20 railway extends, is situated on the western side of the bay. A vessel, 250 feet (66^m2) in length, can be berthed alongside the pier. The depth alongside is from 5 to 15 feet (1^m5 to 4^m6); vessels can lie alongside the southern side of this pier in any weather. In fine weather small vessels can lie alongside the northern side of the pier.

- 25 Jay's wharf, at the root of Railway pier, has depths alongside of from 0 to 4 feet (0^m0 to 1^m2).

Fish wharf, at which vessels can lie in any weather, has depths of from 2 to 11 feet (0^m6 to 3^m4). The Armadale ferry service operates from this pier.

- 30 **Port facilities.**—Small stocks of coal and fuel oil are maintained. Water is laid on to the railway pier and Fish wharf. Small quantities of provisions can be obtained.

Mobile cranes are available on Railway pier on application to British Railways.

- 35 There are two small slipways for boats, and minor repairs can be undertaken.

Chart 2507.

THE SMALL ISLES.—The Small Isles, a group in the bight between Ardnamurchan peninsula (page 286) and the south-western 40 coast of the Isle of Skye, 22 miles northward, consist of Muck, Eigg, Rhum, Canna, and Oigh sgeir.

Vessels from Mallaig call regularly at Eigg, Rhum, and Canna, and there are post and telegraph offices on these three islands.

The population of the Small Isles was 215 in 1951.

- 45 **Muck.**—Muck, about $5\frac{1}{2}$ miles northward of Ardnamurchan lighthouse (page 287), attains an elevation near its western end of 444 feet (135^m3). It has generally a smooth surface and a rocky coast, but near the western end are cliffs, from 50 to 60 feet (15^m2 to 18^m3) high. There are some springs of good water, and in comparison with the 50 neighbouring islands, it is very fertile. There is no safe anchorage at this island.

Dangers.—Bogha na Fionn-ard extends about $1\frac{1}{2}$ cables southward from the southern extremity of Muck, and dries 6 feet (1^m8).

Chart 2507.

Bo-heir, about $2\frac{1}{2}$ cables northward of Rubh' Leam na Larraich (Rudh' an Inbhire), the western extremity of Muck, and about 2 cables offshore, dries, and the sea breaks heavily on it. Eilean nan Each, about one mile northward of Rubh' Leam na Larraich and $5\frac{1}{2}$ half a mile from the north-western side of Muck, with which it is connected by a reef that dries, is 171 feet ($52^{\text{m}} 1$) high, and is fringed by a reef except on its south-eastern side.

Gòdag, about one mile cast-north-eastward of Eilean nan Each and $6\frac{1}{2}$ cables from the northern side of Muck, is an above-water and sunken $10\frac{1}{2}$ reef; the highest part of this reef is 6 feet ($1^{\text{m}} 8$) high, and the northern part of the reef dries 2 feet ($0^{\text{m}} 6$); a rock, with a depth of less than 6 feet ($1^{\text{m}} 8$) over it, lies 2 cables northward of the highest part of this reef.

Foul ground extends about 2 cables south-south-eastward from $15\frac{1}{2}$ Rubh' a' Chroisein (*Lat. $56^{\circ} 50' N.$, Long. $6^{\circ} 13' W.$*), the south-eastern extremity of Muck, and the north-eastern entrance point of Port Mòr; the southern part of this foul ground is known as Bogha Ruadh. Dubh sgeir, about 2 cables east-south-eastward of the south-western entrance point of Port Mòr, is a double rock, a few feet high. $20\frac{1}{2}$

Caution.—Southward of Port Mòr and Bogha na Fionn-ard, and off all the southern and western coasts of Muck, the sea breaks very heavily, and there may be unknown rocks farther out than those charted; it is therefore advisable to give a good berth to this island.

Off-lying shoal and banks.—A shoal, with depths of from $5\frac{1}{2}$ to 14 fathoms ($9^{\text{m}} 6$ to $25^{\text{m}} 6$) over it, lies about $5\frac{1}{2}$ miles westward of the western extremity of Muck; this shoal lies nearly in mid-channel between Muck and Hawes bank (page 259).

Banks, with depths of 13 fathoms ($23^{\text{m}} 8$) and from 13 to 18 fathoms ($23^{\text{m}} 8$ to $32^{\text{m}} 9$) over them, respectively, lie about $1\frac{1}{2}$ miles eastward, $30\frac{1}{2}$ and $3\frac{1}{2}$ miles westward, of the $5\frac{1}{2}$ -fathom ($9^{\text{m}} 6$) shoal mentioned above, and two more banks with depths of 12 fathoms ($21^{\text{m}} 9$) and from $6\frac{1}{2}$ fathoms to 16 fathoms ($11^{\text{m}} 9$ to $29^{\text{m}} 3$) over them, lie, respectively, $1\frac{1}{2}$ and $4\frac{1}{2}$ miles west-north-westward of the $5\frac{1}{2}$ -fathom ($9^{\text{m}} 6$) shoal described above, and about 8 miles south-westward of the south-western extremity of Rhum. $35\frac{1}{2}$

A bank, with depths of from 13 to 20 fathoms ($23^{\text{m}} 8$ to $36^{\text{m}} 6$) over it, lies about 4 miles south-south-westward of the western extremity of Muck, and about the same distance north-westward of Point of Ardnamurchan (page 287). $40\frac{1}{2}$

Local magnetic anomaly.—Local magnetic anomaly was reported in 1939 and 1950 to exist in a position from $1\frac{1}{2}$ to $2\frac{1}{2}$ miles east-south-eastward of Am Maol, the north-eastern extremity of Muck.

Tidal streams.—At a position about $5\frac{1}{2}$ miles westward of Muck the north-going stream begins in an easterly direction — 0600 Stornoway (+0210 Dover), but changes quickly northward and after about 0415 Stornoway (+0325 Dover) runs in directions between about 010° and 020° ; the south-going stream begins H.W. Stornoway (—0415 Dover) and runs in directions which vary between about 190° and 120° ; the spring rate of the stream in both northerly and southerly directions is 0.8 knot. $45\frac{1}{2}$

The streams round and between the isles are rather uncertain in direction, but, in very general terms, the north-going stream, which begins (except off Canna) + 0545 Stornoway (+0130 Dover), runs

Chart 2507.

northward on both sides of Muck and the eastern side of Eigg, north-westward between Muck and Eigg and off the northern end of Eigg, north-eastward between Eigg and Rhum, north-westward off the south-western and north-eastern coasts of Rhum, north-eastward between Rhum and Canna, northward at Óigh sgeir. Westward of Canna the north-going stream sets in a north-north-westerly direction and begins + 0000 Stornoway (+ 0145 Dover). The south-going stream runs round and between the isles in the opposite directions and begins H.W. Stornoway (- 0415 Dover) westward of Canna, and - 0015 Stornoway (- 0430 Dover) elsewhere. The directions of the streams southward and northward of Canna are not known; an eddy possibly runs south-westward off the Bay of Laig, on the western side of Eigg, during the north-going stream.

15 The rates of the streams round and between the isles are subject to great variations according to locality; the spring rate in both directions off the eastern coasts of Muck and Eigg is 4 knots, and about 3 knots between Muck and Eigg and off the south-western coast of Rhum; in the channels between Eigg and Rhum and between Rhum and Canna, 20 the spring rate appears to be not more than about 1·5 knots. South-westward of Canna, between that island and Uinaolo, the spring rate in both directions is about 2·5 knots, and as much as 4 knots near Jemima and Belle rocks; the streams also run strongly past Óigh sgeir (*Lat. 56° 58' N., Long. 6° 41' W.*) and Mills rocks, and across 25 the bank extending south-westward; there are heavy overfalls over all the rocks and round Óigh sgeir, and the sea breaks heavily up to about 15 miles south-westward of Canna, especially in bad weather with the wind blowing against the stream.

See Table of Tidal streams for station K18 in Tidal Streams European Waters, Part II, 1948.

Anchorages.—Port Mòr, a creek on the south-eastern side of Muck, affords some protection, being sheltered by Dubh sgeir and Bogha Ruadh from south-eastward and eastward; this anchorage is entered between Dubh sgeir and Bogha Ruadh.

35 Bâgh a Ghallanaich, a narrow indentation on the northern side of Muck, the south-western entrance point of which is situated 4 cables south-eastward of the eastern extremity of Eilean nan Each, affords shelter to small craft; it is protected from westward by Eilean nan Each. At high water, during northerly winds, this blight is very 40 unsafe.

Bohaund, a reef which dries, lies in the fairway of the entrance to Bâgh a Ghallanaicli; south-eastward of Bohaund there are depths of 2 fathoms (3^m7) for a short distance, with rocks and a shoal bank farther in.

45 **Eigg.**—Eigg, about 2½ miles north-eastward of Muck, has several bays and small inlets, but no harbour, and its coast in most places high and rocky. The bulk of the population inhabit a village on the north-western side of the island; the remainder live at the south-eastern end of the island, where there is a bay and some shelter for 50 small vessels. The population was 115 in 1951.

An Sgùrr, a peculiar basaltic hill near the southern coast of Eigg, is 1,282 feet (390^m7) high; the upper part is a vertical cliff. On south-westerly bearings it appears like a ruinous tower, and on another bearing as an irregular wall crowning the summit of a high hill. The

Chart 2507.

northern end of the island is a low point, but a quarter of a mile inland cliffs rise to an elevation of over 900 feet (27^m3) and nearly encircle the island.

Eilean Chathastail, 91 feet (27^m7) high, lies close off the south-eastern point of Eigg. Rocks, which dry, extend about one cable southward and westward from this islet, and foul ground extends about the same distance from its eastern side. 5

Pilots.—A fisherman will come off if the pilot signal is made within sight of the bay northward of Eilean Chathastail, but there are no *10* regular pilots.

Light.—A light is exhibited, at an elevation of 80 feet (24^m4), from a white beacon, 26 feet (7^m9) in height, situated on the south-eastern extremity of Eilean Chathastail (*Lat.* 56° 52' *N.*, *Long.* 6° 07' *W.*).

Dangers.—Maxwell bank, about 1½ miles south-south-eastward of *15* Eilean Chathastail lighthouse, has depths of from 8 to 10 fathoms (14^m6 to 18^m3) over it, and should be avoided in heavy weather, as, though sheltered by Muck and Eigg, the sea at such times occasionally breaks on it. A bank, with depths of from 10 to 19 fathoms (18^m3 to 34^m7) over it, lies between Maxwell bank and Muck. 20

There are no dangers off-lying the southern coast of Eigg, beyond the distance of one cable. 25

Dubh sgeir, situated about 2½ miles westward of Eilean Chathastail lighthouse and about 3½ cables offshore, is a bare rock, 10 feet (3^m0) high; a shoal bank extends 1½ cables eastward from this rock. Sgeir Eskernish, lying close offshore, about 4 cables north-westward of Dubh sgeir, is 3 feet (0^m9) high. Bogh a' Churaich, about 8 cables north-westward of Sgeir Eskernish and about 1½ cables offshore, dries 7 feet (2^m1); other rocks lie between Bogh a' Churaich and the coast eastward. The sea breaks very heavily on these rocks. There is a boat channel eastward of Bogh a' Churaich. A reef extends about 1½ cables, in places, from the western side of Eigg. Bogha na Brice-nis extends about 3 cables westward from the north-western extremity of Eigg, which is the northern entrance point of the Bay of Laig. The eastern extremity of Eilean nan Each (page 477), hearing 210° and open north-westward of the western side of Eigg, leads north-westward of Bogha na Brice-nis. 30

Eilean Thuilm, about 2 cables westward of the northern extremity of Eigg and about one cable offshore, is connected with the coast by a reef that dries. 35

The eastern coast of Eigg is free from dangers as far southward as Rubha na Crannaig, 3½ miles southward of the northern extremity of the island. Rubha na Crannaig is a low point, and on it stands Kildonnan (Kildonan) house, a two-storied building, and farther westward on the rising ground are the manse, kirk, and other buildings. 40

Flod sgeir, about 2½ cables south-south-westward of Rubha na Crannaig and 1½ cables offshore, is a double rock, which dries about 10 feet (3^m0); when this rock is awash boats can get to the pier, which is situated at the head of the bight westward of Flod sgeir. Garbh sgeir, about 4 cables southward of Rubha na Crannaig and 50 1½ cables from the north-eastern side of Eilean Chathastail, dries about 14 feet (4^m3). There is a channel, with a depth of 2 fathoms (3^m7), between Garbh sgeir and Eilean Chathastail, and between Eilean Chathastail and Flod sgeir. 45

Chart 2507.

Ardnamurchan lighthouse (page 287), bearing 203° and open south-eastward of Eilean Chatbastail (*Lat. $56^{\circ} 52' N.$, Long. $6^{\circ} 07' W.$*), leads south-eastward of Garbh sgeir.

- 5 Submarine cable.—Beacon.*—A submarine cable is landed at the Bay of Laig; the landing place is marked by a beacon. *See page 7.*

Anchorages and inlets.—South bay, between the south-eastern end of Eigg and the western side of Eilean Chathastail, affords anchorage, in depths of from 3 to 7 fathoms ($5^{\text{m}} 5$ to $12^{\text{m}} 8$), sand, but it is exposed to south-westerly winds. If it comes on to blow from south-westward a small vessel could proceed northward through the very narrow channel between Galmisdale point, the salient point abreast the northern end of Eidean Chathastail, and Eilean Chathastail, and anchor on the north-eastern side of this point, where there is a small pier.

A vessel entering South bay should steer for Galmisdale point, bearing about 021° and open westward of the northern extremity of Eilean Chathastail, and anchor in the centre of the bay, with the south-western extremity of that islet bearing 126° , in a depth of about 7 fathoms ($12^{\text{m}} 8$).

Between Rubha na Crannaig and Eilean Chathastail is a shallow bay, with several reefs in it; it is the only place in this island from which communication by sea with the mainland is maintained.

The best anchorage here is eastward of Flod sgeir, but about 3 cables eastward of this rock the depths increase suddenly to 30 fathoms ($54^{\text{m}} 9$). If Flod sgeir is above water a vessel should steer for it bearing about 250° , and anchor, in depths of from 5 to 8 fathoms ($9^{\text{m}} 1$ to $14^{\text{m}} 6$), taking care to avoid the foul ground extending about $1\frac{1}{2}$ cables south-south-eastward from Rubha na Crannaig.

30 Small craft generally run inside the inner pier at the head of the bight westward of the northern extremity of Eilean Chathastail during high water, and ground; or into Poll nam Partan, a muddy bight on the south-western side of Rubha na Crannaig.

The depths are sufficiently shallow for anchorage for about $2\frac{1}{2}$ cables from the eastern shore of Eigg, northward of Rubha na Crannaig; it is quite open, but vessels sometimes anchor here during westerly gales.

Rhum.—Rhum, about $3\frac{1}{2}$ miles north-westward of Eigg, is very mountainous, several of the peaks on the southern side of the island being over 2,000 feet ($609^{\text{m}} 6$) high. Ainshval, $1\frac{1}{2}$ miles north-north-eastward of the southern extremity of the island, is 2,545 feet ($775^{\text{m}} 7$) high. Askival, one mile north-eastward of Ainshval, attains an elevation of 2,652 feet ($808^{\text{m}} 3$), and is the highest mountain in the island; it terminates in a sharp, pointed, and nearly inaccessible peak, which, however, in common with the other summits of this island, is but seldom seen, the high land being almost constantly enveloped in cloud. Orval, about $3\frac{1}{2}$ miles north-westward of Ainshval, 1,862 feet ($567^{\text{m}} 5$) high, is the highest mountain within the western coast.

The coasts of Rhum are generally steep-to. As a general rule the bottom is rock off the southern and western sides, sand off the northern side, and mud off and near the eastern side of this island; the depths on the eastern side are very irregular.

The island is a Scottish Nature Reserve.

Dangers.—Banks.—The south-western coast of Rhum is rugged,

Chart 2507.

broken, and cliffy; no rocks lie more than 2 cables offshore, except about 5 cables north-westward of the southern extremity of the island, where there is foul ground, on which sea breaks in heavy weather, extending from 3 to 4 cables offshore. There are several shoals and rocks, some of which dry, extending $2\frac{1}{2}$ cables offshore, on the north-western side of the island. Patterson rock, about 3 cables eastward of Rubha Shamhan Insir, the northern extremity of Rhum, dries.

Seagull bank, about $1\frac{1}{2}$ miles east-north-eastward of Rubha Port na Caranean (*Lat. 57° 00' N., Long. 6° 14' W.*), the eastern extremity of Rhum, has a least depth of 10 fathoms (18^m3), rock, and a bank, with a similar depth and bottom, lies $1\frac{1}{2}$ miles farther east-north-eastward. A bank, with a least depth of 12 fathoms (21^m9) over it, lies about one mile northward of Seagull bank. A reef of shelving rocks and stones extends about 2 cables northward from Rubha Port na Caranean. Southward of Rubha Port na Caranean the eastern coast of Rhum is bold, with the exception of Sgeir a' Mhàim-ard, $2\frac{1}{2}$ miles southward of Rubha Port na Caranean and $1\frac{1}{2}$ cables offshore, which dries about 14 feet (4^m3).

Anchorages and Inlets.—Directions.—The south-western coast of Rhum has several small indentations, but none affording sufficient shelter for a landing to be effected with onshore winds.

Camas na h Átha, on the north-eastern side of A' Bhrideanach, the western extremity of the island, is a small sandy bay, with a rock off each entrance point.

25

Kilmory bay, the eastern entrance point of which is situated about half a mile west-south-westward of Rubha Shamhan Insir, has depths of from one to 3 fathoms (1^m8 to 5^m5), sand, but it is not recommended as an anchorage. There are several rocks on both sides of this bay.

Loch Scresort is entered between Rubha Port na Caranean and a point about 9 cables north-north-westward. It affords good anchorage to small vessels. The head of the loch dries out about 2 cables. The southern shore of this loch is moderately steep-to, with the exception of the reef, which extends 2 cables northward from Rubha Port na Caranean; the northern shore is bolder, especially at the entrance, where large above-water rocks mark the edge of the coastal reef.

Kinloch house, two-storied, stands near the head of the bay, partially protected by trees; northward of it are the farm buildings, and close south-westward of it stands a large, red stone castle, with tower and flagstaff. In the south-western corner of the bay is a pier, which dries, and a slip which has a least depth of about 2 feet (0^m6) at its outer end.

A good anchorage for a small vessel is with the pier bearing 250° , distant 2 cables, in a depth of 2 fathoms (3^m7), stiff mud. For a larger vessel a good berth is with Kinloch house (*Lat. 57° 01' N., Long. 6° 17' W.*) bearing 270° , and distant 4 to 5 cables from the pier, in a depth of $3\frac{1}{2}$ fathoms (6^m4).

A vessel entering Loch Scresort should keep the sandy Bay of Laig (page 479) bearing about 160° and well open eastward of Rubha Port na Caranean, until Kinloch house bears 270° , whence she can steer for the desired anchorage.

There is an indentation about one mile southward of the entrance to Loch Scresort, which might be mistaken for it at night, for, though

Chart 2507.

not so deep, the formation of the land, and especially the northern points of each, are very similar. Approaching from southward, if in doubt, a vessel should stand on one mile farther northward, when the 5 position should be easily ascertained.

Submarine cables.—Beacons.—A submarine cable is landed at Bagh na h-Uamha, on the eastern coast of Rhum, about 7 cables southward of Rubha Port na Caranean; and also at Kilmory bay. The landing places are marked by beacons. *See page 7.*

10 Canna.—Light.—Canna is the north-westernmost of the Small isles. When viewed from north-westward each end of Canna appears to terminate in a bluff, the middle of the island sinking down to a low neck. Carn a' Ghail, about one mile westward of the eastern extremity of the island, attains an elevation of 683 feet (208^m2); on the southern 15 coast of the island basaltic columns attain an elevation of about 20 feet (6^m1). The surface of Canna is covered with fine grass; on the summits of the hills there is a little heather; there is also a small quantity of peat.

Sanday, close southward of the south-eastern end of Canna, to 20 which it is joined by a reef which dries, is 124 feet (37^m8) high at its eastern end, which terminates in a cliff, and is steep-to.

There are some detached rocks of considerable elevation off the eastern end of Sanday; of these, Ceann an Eilein are the most remarkable; two of them are but a short distance from the cliff, and although 25 their elevations are not more than 100 feet (30^m5), they form striking combinations with the coast. The smaller resembles a steeple; the other appears like a large tower.

A light is exhibited, at an elevation of 105 feet (32^m0), from a white beacon, 35 feet (10^m7) in height, situated at the eastern end of Sanday. 30 *Charts 2507, 2475, 3674.*

Off-lying islets and dangers.—Banks, on which are several rocks and small islets, extend about 10½ miles south-south-westward from the south-western end of Canna. The bottom is very uneven in this area.

35 Chart 2507.

Oigh sgeir, a group of islets situated on the south-western bank, about 8½ miles south-westward of Sanday lighthouse, is 27 feet (8^m2) high; the south-western islets are low-lying. The surface of these islets is covered in summer with coarse grass and the sea pink; there 40 is no water on the islets.

The eastern coast of Oigh sgeir is steep-to; landing can generally be effected, in moderate weather, in some of the creeks on the north-western side of the group.

There is no anchorage near these islets.

45 Mills rocks, about 2½ miles south-westward of the lighthouse on Oigh sgeir, have two detached heads, with depths of 6 feet (1^m8) over them; a shoal, with a depth of 7 fathoms (12^m8) over it, lies about 3½ cables westward of the northern head.

The northern extremity of Eigg, bearing 085° and open southward of 50 the southern extremity of Rhum, leads about 1½ miles southward of Mills rocks (*Lat. 56° 57' N., Long. 6° 44' W.*).

The bottom is so uneven on the bank for about 3 miles south-westward of Mills rocks, that, although the least known depth is 14 fathoms (25^m6), the sea breaks heavily over it during gales.

Chart 2507.

A vessel should not approach Mills rocks to a depth of less than 30 fathoms ($54^{\text{m}}9$), in thick weather.

Light.—Fog signal.—Radiobeacon.—A light is exhibited, at an elevation of 136 feet ($41^{\text{m}}5$), from a white tower, 128 feet ($39^{\text{m}}0$) in height, situated on a rock about 4 cables south-south-westward of the northern extremity of Oigh sgeir. A fog signal is sounded from the northern end of Oigh sgeir. There is a radiobeacon and a radio telephone at the lighthouse.

Dangers.—Light-buoy.—Umaolo, about $2\frac{1}{2}$ miles north-eastward of Oigh sgeir, is a small bare rock, about 17 feet ($5^{\text{m}}2$) high, and is marked on its western side by a conical light-buoy, painted black fitted with a radar reflector, and exhibiting a *white group flashing* light showing *two flashes every ten seconds*. A rock, with a depth of less than 6 feet ($1^{\text{m}}8$) over it, lies close westward, and a shoal bank extends about half a cable northward from the northern end of Umaolo. It should be noted that Sanday Island light is obscured over Umaolo.

Belle rock, about $8\frac{1}{2}$ cables northward of Umaolo, has a depth of 10 feet ($3^{\text{m}}0$) over it; Jemima rock, about one mile north-north-eastward of Umaolo, has a depth of 5 feet ($1^{\text{m}}5$) over it; between these two rocks are other rocks, with depths of less than 6 feet ($1^{\text{m}}8$) over them.

Charts 2507, 2475, 3674.

Rubha nan Clach (page 492), bearing 019° and well open westward of Canna, leads westward of Belle rock.

25

Chart 2507.

An Steidh, situated about 9 cables south-eastward of Garrisdale point (*Lat. $57^{\circ} 03' N.$, Long. $6^{\circ} 37' W.$*), the western extremity of Canna, and about 2 cables offshore, is a flat-topped islet. Close southward of it are two small rocks a few feet high, with a boat channel northward of them. About 3 cables westward of An Steidh is a reef, which dries about 7 feet ($2^{\text{m}}1$).

Several rocks, which dry, lie about 2 cables offshore, between An Steidh and Garrisdale point. Foul ground extends about 3 cables west-north-westward from Garrisdale point; the outer part of this foul area dries about 10 feet ($3^{\text{m}}0$). There is a boat channel through this foul area.

The northern coast of Canna is bordered by rocks and a shoal bank extending in places about 3 cables offshore; the bottom is uneven off this coast for about 5 cables offshore. Bod an Stoil, situated close off the northern coast of Canna, about 2 miles north-westward of Sanday lighthouse, is a detached pyramid rock, 82 feet ($25^{\text{m}}0$) high.

Sgeir a' Phuirt, lying in the fairway of the entrance to Canna harbour, about $5\frac{1}{2}$ cables north-westward of Sanday lighthouse, dries about 14 feet ($4^{\text{m}}3$). Rocks, which dry, extend about half a cable from the north-eastern side of Sanday, from southward of Sgeir a' Phuirt as far as Rubha nam Feannag, the northern extremity of Sanday.

The eastern side of Sanday is steep-to, and rocks, which dry, extend about 2 cables from its southern side.

50

On the southern side of Canna is a broad bay, which is divided into two parts by a reef, which extends about $4\frac{1}{2}$ cables southward; the western part is called Tarbert bay. Sgeirean Dubha, situated on the eastern side of this broad bay, about $1\frac{1}{2}$ miles westward of Sanday

Chart 2507.

lighthouse, is 6 feet (1^m8) high. There are several other rocks in this bay.

Submarine cable.—Beacon.—A submarine cable is landed on the eastern coast of Canna about 4 cables northward of Rubha Carrinnis (see below); the landing place is marked by a beacon. See page 7.

Local magnetic anomaly.—The cliffs of Canna are highly magnetic, and on Compass hill, 452 feet (137^m8) high, at its eastern end, a compass becomes useless. The magnetic influence is limited to a few feet. A vessel, however, in the vicinity of such land may pass over magnetic ground in water sufficiently shoal to allow of the compasses being affected until a short distance from it.

Anchorages.—Tarbert bay, on the southern coast of Canna, affords anchorage in a depth of 9 fathoms (16^m5) during northerly winds, but this anchorage is not recommended.

Boat harbour (*Lt. $57^{\circ} 03' N.$, Long. $6^{\circ} 31' W.$*), situated at the north-eastern end of the bay on the southern side of Canna, is encumbered with rocks; there is a depth of 2 fathoms (3^m7), sand, northward of Sgeirean Dubha; in the south-eastern corner of this *blight* boats can be hauled up on the sandy beach. Sgeirean Dubha in line with Compass hill, bearing about 040° , leads into Boat harbour, clear of all dangers.

Canna harbour, between Sanday and Rubha Carrinnis, about one mile north-westward of Sanday lighthouse, is a secure harbour for small vessels during south-westerly gales; but should only be used by vessels with local knowledge. Rubha Carrinnis, the north-eastern entrance point, is a black, steep-to, vertical cliff, 102 feet (31^m1) high. Sgeir a' Phuirt gives considerable protection to the harbour from easterly winds; there is a channel, with a depth of 3 fathoms (5^m5), southward of the reef, but the better entrance is northward of it.

About one cable west-north-westward of Rubha Carrinnis and about 60 or 70 yards (64^m9 or 64^m0) from the north-eastern shore is a rock, which dries. A muddy flat, which dries, extends from Rubha nam Feannag across Canna harbour and up to its head.

The anchorage in Canna harbour is close north-westward of the rock, situated one cable west-north-westward of Rubha Carrinnis, in a depth of 2 fathoms (3^m7), mud.

Charts 2507, 2475, 3674.

ISLE OF SKYE.—The Isle of Skye is separated from the mainland by the Sound of Sleat, Kyle Rhea, Loch Alsh, Kyle Akin, Inner sound, and the Sound of Raasay.

Skye is mountainous, with moorland; the rocks are mainly volcanic, belonging to the Tertiary age. The principal mountains are the Cuillin hills, between Loch Scavaig and Loch Brittle, about 13 miles north-north-westward of Point of Sleat, the southern extremity of Skye. Gars-bheinn (Gars ben), the south-easternmost peak, situated $11\frac{1}{2}$ miles north-north-westward of Point of Sleat, has a very narrow summit, about 2,928 feet (892^m4) high. Sgùrr Dearg, $1\frac{1}{2}$ miles north-westward of Gars-bheinn, is 3,247 feet (989^m7) high, and the highest of the Cuillin range. Sgùrr na Banachdich, about 3,161 feet (963^m4) high, about half a mile north-north-westward of Sgùrr Dearg, with its smooth shoulder Sgùrr nan Gobhar, three-quarters of a mile westward, are the northern peaks of this range.

Charts 2507, 2475, 3674.

This rugged region is subject to sudden and violent storms.

With northerly winds, which come on suddenly, gusts descend the steep sides of Gars-bheinn in most violent squalls, driving clouds of foam before them, and almost before there is time for a gust to drive a vessel to the extent of her cable, it has passed, and is succeeded for a few moments by a calm.

Meall nan Suircamach (Sgurr More), a mountain (*Lat. 57° 39' N., Long. 6° 17' W.*), 1,772 feet (540^m1) high, is situated 4 miles south-south-eastward of the northern end of the island. 10

Portree, on the eastern coast, about 18 miles south-south-eastward of the northern extremity of the island, is the only town in Skye, and it possesses an excellent anchorage. Communication by sea is maintained with the mainland through Mallaig and Kyle of Lochalsh. Vessels call regularly at Armadale on the eastern side of Skye 15 (page 517).

Tidal streams between the Small isles and the south-western coast of Skye.—In mid-channel between the northern end of Canna and Point of Sleat the stream is very weak and quite irregular.

In about mid-channel northward of Rhuin, at a position 3·4 miles 20 northward of Rubha Shamnan Insir, the stream is weak and irregular.

Chart 2507.

SOUTH-WESTERN COAST OF ISLE OF SKYE.—**Approaches to Lochs Eishort and Slapin.**—**Light.**—Point of Sleat, the southern extremity of the Isle of Skye and of the Sleat peninsula, on the 25 south-eastern side of the approach to Lochs Eishort and Slapin, is low, rugged and uncultivated, and has overcrops of rock protruding on its western side; the land rises gradually north-eastward.

Chart 2496.

A light is exhibited, at an elevation of 67 feet (20^m4), from a white 30 tower, 22 feet (6^m7) in height, on Point of Sleat.

Chart 2507.

The western coast of the Sleat peninsula between Point of Sleat and the salient point abreast Eilean Ruairidh, 7½ miles northward, is indented by several small bays, but as it is exposed to the prevailing 35 south-westerly to north-westerly winds there are no safe anchorages.

Strathaird promontory, on the western side of the approach to Lochs Eishort and Slapin, is formed by a spur extending southward from Blà bheinn (Blaven), a rugged mountain, 3,036 feet (925^m3) high, 3½ miles east-north-eastward of Gars-bheinn (page 484); this 40 promontory is, in several places, from 400 to about 1,120 feet (121^m9 to 341^m4) high.

From Rubha na h-Easgainne, the southern extremity of Strathaird promontory, the eastern coast of this promontory trends about 3 miles north-north-eastward to Kilmarie bay, on the western side of the 45 entrance to Loch Slapin.

Charts 2496, 2507.

Dangers.—Some sunken rocks extend about three-quarters of a cable eastward from Point of Sleat (*Lat. 57° 01' N., Long. 6° 01' W.*), and some above-water rocks extend westward from it; Sgeir Dhubb, 50 the westernmost of these rocks, situated about 1½ cables westward of the point, is about one foot (0^m3) high. Two islets, known as Eilean Sgorach, lie about 1½ cables north-westward of Point of Sleat.

Chart 2507.

Northward of Sgeir Dhubh, to within about half a mile southward of the southern entrance point of Tarskavaig bay, about $5\frac{1}{2}$ miles northward of Point of Sleat, there are no dangers beyond $1\frac{1}{2}$ cables offshore.

A group of rocks, situated on the southern side of the entrance to Tarskavaig bay, from about $1\frac{1}{2}$ to 5 cables offshore, dries about 9 feet (2^m7); the three largest of these rocks, named in order from the southward, are Sgeir Biodaig, Sgeir Fhada, and Sgeir Mhòr. Rocks, which dry, lie about $1\frac{1}{2}$ cables south-westward of the northern entrance point of Tarskavaig bay. Bogha Darrach lies about 5 cables north-north-westward of the northern entrance point of Tarskavaig bay and about 2 cables offshore.

Eilean na h Airde, about $2\frac{1}{2}$ cables west-south-westward of Rubha 15 na h-Easgainne, with which it is nearly connected at low water, is 70 feet (21^m3) high; it is fringed by a reef, which extends about $1\frac{1}{2}$ cables south-eastward and north-westward from it. A reef, which dries, extends about $1\frac{1}{2}$ cables southward from Rubha na h-Easgainne.

20 Suidhe nan Eun (page 487) in line with Sgùrr na Stri, 1,617 feet (492^m9) high, $3\frac{3}{4}$ miles north-north-westward, bearing about 344° , leads westward of the foul ground westward of Eilean na h Airde. Sgùrr na Stri, the southern peak of a range, is a rugged, bare, dark, rocky, and almost inaccessible cone; the western face is mostly a cliff; 25 the eastern is not so steep; a gully or split in the rock extends from the summit to the base of the south-eastern part of the mountain, dividing the summit into two peaks, and the split is open on north-westerly hearings.

A bank, with a least depth of $5\frac{1}{2}$ fathoms (9^m6) over it extends 30 about 4 cables northward from Eilean Ruairidh which lies about $1\frac{1}{2}$ cables offshore.

Bogha Ailean, about $2\frac{1}{2}$ cables north-north-eastward of Rubha na h-Easgainne and 2 cables from the western side of the entrance to Loch Slapin, has a depth of one fathom (1^m8) over it; a shoal, with a depth 35 of 5 fathoms (9^m1) over it, lies about half a mile farther northward and 4 cables offshore. The south-eastern extremity of Rhum (page 480), bearing 212° , and well open south-eastward of Strathaird promontory, leads south-eastward of these dangers.

Anchorages and inlets.—There are no safe anchorages in the 40 small bays on the western side of the Sleat peninsula. Tarskavaig bay has depths of from 2 to 4 fathoms (3^m7 to 7^m3).

Ob Gauscavaig (*Lat. $57^\circ 08' N.$, Long. $5^\circ 59' W.$*) which is entered about $1\frac{1}{4}$ miles north-eastward of Tarskavaig bay, is a small bay on the south-eastern side of the entrance to Loch Eishort; Dun Scaich, 45 on its northern entrance point, is an old ruin with a drawbridge.

Kilmarie bay (page 485), the head of which dries out about 3 cables, has a few cottages on its south-western side.

Lochs Eishort and Slapin.—Submarine cable.—Beacon.—Loch Eishort, which is entered between Eilean Ruairidh and Rubha Suisnish, 50 2 miles north-north-westward, is so intricate in its navigation that, although there is good anchorage and shelter in the upper part of the loch, in depths of from 4 to 6 fathoms (7^m3 to 11^m0), no vessel without local knowledge should attempt to enter it under any circumstances.

Rubha Suisnish is the south-western termination of Carn Dearg, a

Chart 2507.

steep hill 630 feet (192^m0) high; rocks, which dry, extend about $1\frac{1}{2}$ cables southward from this point.

Loch Slapin is entered between Rubha Suisnish and the coast about $1\frac{1}{2}$ miles westward; the head of the loch dries out about 5 cables. 5

A shoal, with a depth of 5 fathoms (9^m1) over it, lies in the fairway of Loch Slapin, about $1\frac{1}{2}$ miles north-north-westward of Ruhha Suisnish, and a rock, with a depth of $1\frac{1}{2}$ fathoms (2^m3) over it, lies 2 cables farther north-north-westward and about $3\frac{1}{2}$ cables from the western shore of the loch; northward of this position there are rocks 10 on both sides of the loch.

A beacon, which marks the landing of a submarine cable, is situated on the eastern side of the loch, about half a mile north-eastward of the $1\frac{1}{2}$ -fathom rock mentioned above.

The anchorage northward of the narrows of Loch Slapin has depths 15 of from $1\frac{1}{2}$ to 7 fathoms (2^m7 to 12^m8), mud, but it is seldom used.

Torrin, on the eastern side of Loch Slapin, about $1\frac{1}{2}$ miles from its head, is connected with the general telephone system.

Tidal streams.—In these lochs the in-going streams begin about + 0530 Stornoway (+ 0115 Dover), and the out-going streams begin 20 about - 0030 Stornoway (- 0445 Dover); the streams are weak everywhere.

Approaches to Loch Scavaig.—Dangers.—Suidhe nan Eun, about one mile north-westward of Rubha na h-Easgainne, terminates in an overhanging cliff, 100 feet (30^m5) high; about 3 miles farther 25 northward is Camas Fhionnairidh.

Bogha Carrach, situated in the fairway of the southern approach to Loch Scavaig, about $1\frac{1}{2}$ miles north-westward of Suidhe nan Eun, has a depth of 2 fathoms (3^m7) over it; a shoal, with a depth of 5 fathoms (9^m1) over it, lies about 2 cables south-south-westward of 30 Bogha Carrach; these shoals lie on a rocky bank, with depths of from 6 to 17 fathoms (11^m0 to 31^m1) over it.

Ruhh' an Dùnain, about 8 miles west-north-westward of Rubha na h-Easgainne (*Lat. $57^{\circ} 08' N.$, Long. $6^{\circ} 05' W.$*), is the south-western extremity of the promontory on the north-western side of the approach 35 to Loch Scavaig; on northerly or easterly bearings the promontory appears comparatively low and flat, with a double table-topped hill near its extremity; inland the ground is flat and lower, but farther in it again rises to the Cuillin range (page 484). About 5 miles east-north-eastward of Rubh' an Dùnain is Rubh' a' Gheodha Bhuidhe, the 40 western entrance point of Loch Scavaig.

Charts 2507, 1795.

Soay sound.—Dangers.—Soay, the southern extremity of which island is situated about $4\frac{1}{2}$ miles westward of Rubha na h-Easgainne, lies in the fairway of the approach to Loch Scavaig. The island is 45 nearly divided in the middle, the two parts being connected by a low isthmus; on the south-eastern side of this isthmus is Camas nan Gall, and on its north-western side Soay harbour. The south-western part of this island is 301 feet (91^m7) high, and the north-eastern part 449 feet (136^m9). The channel northward of Soay is known as Soay sound. 50

Na Gamhnaichean are a group of rocks lying 4 cables within the south-western side of Soay; the highest of these rocks is about 6 feet (1^m8) high. An Coileach and A' Chearc, the southernmost of these rocks, are awash; about 4 cables eastward of A' Chearc and about

Charts 2507, 1795.

1 $\frac{1}{2}$ cables from the southern end of Soay is a shoal, with a depth of 2 fathoms (3 m 7) over it. Rubha Dubh, the northernmost of Na Gamhnaichean, dries about 12 feet (3 m 7). There is a boat channel 5 eastward of Na Gamhnaichean.

There are no dangers on the western side of Soay, northward of Rubha Dubh beyond 1 $\frac{1}{2}$ cables offshore. The north-western side of Soay is fringed by a reef, which dries and extends about half a cable offshore. The eastern side of Soay is fringed by a reef, which dries 10 and extends about 1 $\frac{1}{2}$ cables offshore.

Sgeir Mhòr, situated close off the northern shore of Soay sound, about 4 cables east-south-eastward of Rubh' an Dùnain, is a bare flat islet, 10 feet (3 m 0) high, and is joined to the coast by a reef which dries; close west-south-westward of this islet is a large rock, which 15 dries 6 feet (1 m 8), and close eastward of the islet are two rocks awash; about one cable east-north-eastward of this islet, on a rock on the coastal reef, stand the remains of an old fort.

On the northern shore of the sound, about 2 $\frac{1}{4}$ miles east-north-eastward of Rubh' an Dùnain, rocks, which dry, extend about one 20 cable offshore.

Tidal streams.—In the Sound of Soay the stream appears to run continuously westward.

Anchorage.—Camas nan Gall (*Lat. 57° 09' N., Long. 6° 12' W.*), is open south-eastward, and a heavy sea sets in with southerly or 25 south-easterly gales. A cliff, 36 feet (11 m 0) high, is situated about the middle of the north-eastern side of Camas nan Gall. At the head of this bay are two gravel beaches, between which is a low clifffy head with a stone wall along its summit; near this latter cliff a burn flows into the bay.

30 The south-western shore of Camas nan Gall is fringed by a reef; about 3 $\frac{1}{2}$ cables within the entrance a shoal bank extends about 1 $\frac{1}{4}$ cables from the south-western shore.

About 1 $\frac{1}{2}$ cables eastward of the north-eastern entrance point of Camas nan Gall and about one cable offshore are two small black 35 rocks, the southern of which is 6 feet (1 m 8) high; a reef, which dries, extends a short distance southward from this rock and a similar reef extends about one cable southward from the north-eastern entrance point.

A rock, which dries, lies close off the north-eastern shore of Camas 40 nan Gall, about 3 $\frac{1}{2}$ cables within the entrance; a similar rock lies in mid-channel, about one cable from the head of the bay, and is an obstruction to small vessels seeking an inshore berth.

The best anchorage in Camas nan Gall is with its south-western entrance point in line with the eastern extremity of Eigg, bearing about 45 167°, in a depth of 15 fathoms (27 m 4). Pilots can be obtained from any of the ports on the south-western coast of Skye.

A vessel approaching Camas nan Gall from westward should keep the south-eastern extremity of Sanday (page 482) bearing 239° and well open south-eastward of Soay, until Sgùrr na Stri (page 486) bears 50 024° and is open south-eastward of Soay. When the bay is well open course can be shaped for the anchorage.

Soay harbour is a narrow creek; a shingle bar, which dries 2 feet (0 m 6), crosses the entrance of this harbour, but there are depths of 2 fathoms (3 m 7) inside it. Temporary anchorage could be obtained,

Charts 2507, 1795.

during southerly winds, off the entrance to the harbour, but care should be taken to avoid a reef, which dries, extending about one cable west-north-westward from the north-eastern entrance point.

An Dubh chamas, a bight on the northern side of Soay, about 5 cables east-north-eastward of the north-eastern entrance point of Soay harbour, is open northward, but the holding ground is good.

Camas Fhionnairidh is an open bay on the south-eastern side of Sgùrr na Stri (*Lat. 57° 12' N., Long. 6° 08' W.*). Two small rivers 10 flow into the head of this bay, leaving a deposit of sand and gravel, which dries out about 1½ cables. There is a solitary farm, a short distance inland from the head of the bay, with a few acres of arable land about it.

From the south-eastern entrance point of the bay, 2½ miles north- 15 ward of Suidhe nan Eun (page 487), a reef, which dries, extends about 1½ cables north-westward.

Anchorage can be obtained anywhere in Camas Fhionnairidh, in depths of from one to 5 fathoms (1^m8 to 9^m1), but it is too open to be recommended, even with an offshore wind; it often blows hard here, 20 and a sudden shift of wind raises a considerable sea.

Charts 2507, 2475, 3674.

Loch Scavaig.—Loch Scavaig is entered between Rubh' a' Gheodha Bhuidhe (page 487) and Rubha Bàn, 1½ miles east-north-eastward. From southward the Cuillin range (page 484) with the lower but sharp 25 cone of Sgùrr na Stri in the gap between it and Blà bheinn (page 485), serve to identify Loch Scavaig. This loch has moderate depths, but it is encumbered with rocks, which dry, and the space available for anchorage is very limited. It is often visited by yachts, as it affords access to Loch Coruisk, the southern end of which is only about 30 200 yards (182^m9) within the head of Loch Scavaig.

Chart 2507.

The eastern shore of the loch is formed by the western side of Sgùrr na Stri, and the western side of the loch by the eastern side of Cars-bheinn; the rocky, precipitous sides of this latter mountain rise from 35 the shore in black, bold, and irregular cliffs.

Tidal streams.—The in-going stream begins about + 0530 Stornoway (+ 0115 Dover), and the out-going stream begins about - 0030 Stornoway (- 0445 Dover); the streams are weak.

Islets and dangers.—Bo Maigh, situated in the fairway of Loch 40 Scavaig, about 8 cables west-north-westward of Rubha Bàn, is awash.

Eilean Reamhar, a rocky islet lying close off the western shore of the loch, about 8 cables northward of Rubh' a' Gheodha Bhuidhe, is moderately steep-to. Sgeir Dorcha, about 1½ cables eastward of Eilean Reamhar, is awash. Between Sgeir Dorcha and Bo Maigh is a 45 rock awash, and there are two small above-water rocks, lying about one cable east-north-eastward of Sgeir Dorcha; there are other rocks, close off the eastern shore of the loch. Sgeir Doighich, about 1½ cables northward of Eilean Reamhar and one cable offshore, is a small bare islet, with a boat channel westward of it.

50

Eilean Glas (*Lat. 57° 12' N., Long. 6° 10' W.*) is situated at the head of the loch, and close off its eastern shore; the superfluous water from Loch Coruisk flows over a smooth rock with a fall of a few feet into a little bight on the eastern side of Eilean Glas. A

Chart 2507.

rock, which dries, lies about one cable south-south-eastward, and a similar rock lies about half a cable westward of Eilean Glas.

Anchorages.—Between Eilean Reamhar and Sgeir Doighich is a partially sheltered area.

Perhaps the best anchorage in Loch Scavaig is about midway between Sgeir Doighich and Eilean Glas, where there is a depth of 3 fathoms ($5^m 5$); this is, however, a rough anchorage. With southerly or south-easterly winds, a short but heavy swell rolls in, and with 10 northerly winds the gusts and flurries come down the mountain sides; even with westerly gales, squalls from various directions drive the vessel round her anchor. The advantage of being inside Eilean Glas is that the surrounding sides of rock shelter the cove, and the squalls pass overhead.

15 There is a restricted, but safe, anchorage close north-westward of Eilean Glas, where there is a depth of 2 fathoms ($3^m 7$), but there is a small rock, close westward of Eilean Glas, and this anchorage should not be entered without local knowledge.

Charts 2507, 2475, 3674.

20 **Directions.**—When Loch Scavaig is well open a vessel should steer to pass about 3 cables eastward of Rubh' a' Ghodha Bhuidhe, and thence about half a cable eastward of Eilean Reamhar; thence she should keep the western extremity of Eilean Glas in line with Meall na Cuilce, a barren rocky hill, at the head of Loch Scavaig, which 25 rises precipitously to an elevation of over 500 feet ($152^m 4$), bearing about 337° , and anchor, in a depth of 3 fathoms ($5^m 5$), when the eastern extremity of Sgeir Doighich is in line with the north-western extremity of Eilean Reamhar.

If proceeding to the head of the loch the vessel should keep the western 30 extremity of Eilean Glas (*Lat. $57^\circ 12' N.$, Long. $6^\circ 10' W.$*) in line with Meall na Cuilce, bearing 337° , until northward of Sgeir Doighich, when she should keep the eastern extremities of Sgeir Doighich and Eilean Reamhar in line astern, which leads westward of the rock half a cable westward of Eilean Glas. She should round this latter rock and pass 35 about 50 yards ($45^m 7$) off the northern side of Eilean Glas, and anchor with Eilean Glas in line with Eilean Reamhar, in the centre of the basin, in depths of from 2 to $2\frac{1}{2}$ fathoms ($3^m 7$ to $4^m 6$) mud; she should secure her stern with a hawser to Eilean Glas. Local knowledge is essential for a vessel entering the inner part of Loch Scavaig.

40 *Chart 2507.*

If coming from westward the vessel can pass through Soay sound, which is deep and free from dangers, with the exception of the rocks which extend one cable from the northern shore $2\frac{1}{2}$ miles east-north-eastward of Rubh' an Dùnain. She should round Rubh' a' Ghodha Bhuidhe at a distance of about 3 cables, and proceed as directed above.

Charts 2507, 1795.

Loch Brittle.—Loch Brittle is entered between Rubh' an Dùnain and Geodha Daraich, $1\frac{1}{2}$ miles north-north-westward. The loch affords no shelter from southerly or south-westerly winds, which cause much 50 swell, and even with westerly winds anchorage in it is not safe.

An Cròcan, the bluff on the north-western side of the loch, about three-quarters of a mile within its entrance, has a rocky sea front rising vertically to an elevation of 500 feet ($152^m 4$), and is intersected from top to bottom by a large chasm.

Charts 2508, 2635.

Charts 2507, 1795.

Glenbrittle house, about half a mile northward of the head of the loch, is large, but not conspicuous from seaward; a burn flows past it into the loch.

Charts 2507, 1795, 2475, 3674.

From about one mile southward of Soay, Rubh' an Dùnain, the high cliffs on the north-western side of Loch Brittle, the pinnacle rock close offshore, $1\frac{1}{2}$ miles north-westward of Geodha Daraich, and Stac a' Mheadais, about $4\frac{1}{2}$ miles north-westward of Geodha Daraich, a rock about 70 to 80 feet (21^m3 to 24^m4) high, resembling a martello tower, 10 are prominent.

Charts 2507, 1795.

The shores of Loch Brittle are generally sloping, except at An Cròcan.

A rock, with a depth of less than 6 feet (1^m8), lies close offshore, 15 about $1\frac{1}{2}$ cables north-westward of Rubh' an Dùnain. A shoal, with a depth of 5 fathoms (9^m1) over it, lies about 5 cables north-north-westward of Rubh' an Dùnain (*Lat. $57^{\circ} 10' N.$, Long. $6^{\circ} 19' W.$*). With the exception of these two rocks there are no dangers in Loch Brittle.

Tidal streams.—The in-going stream begins about $+ 0530$ Stornoway ($+ 0115$ Dover), and the out-going stream begins about $- 0030$ Stornoway ($- 0445$ Dover); the streams are weak.

Charts 2551, 2507.

Coast.—Dangers.—A large burn breaks through the cliffs about 25 one mile north-westward of Geodha Daraich, and there is a pinnacle rock close offshore, about three-quarters of a mile farther north-westward.

An Dubh sgeir, about $2\frac{3}{4}$ miles north-westward of Geodha Daraich and half a mile offshore, is a bare rock, 16 feet (4^m9) high; a shoal, 30 with a depth of 5 fathoms (9^m1) over it, lies 2 cables east-north-eastward of its northern end.

Charts 2551, 1795.

Loch Eynort.—Anchorage.—Directions.—Loch Eynort, situated about $2\frac{3}{4}$ miles north-westward of Geodha Daraich, is about 5 cables 35 wide at its entrance; the head of the loch dries out about 6 cables. Frequent squalls are experienced here, and a heavy sea comes in with westerly gales.

The only secure anchorage in Loch Eynort is in a small area, within the bend of the loch and rather near the eastern shore, in depths of 40 from 2 to 3 fathoms (3^m7 to 5^m5).

To enter Loch Eynort a vessel should pass northward of An Dubh sgeir, and proceed in, sounding, for about $1\frac{1}{2}$ miles, until abreast the bend on the northern shore, when she should anchor, in depths of from 4 to 6 fathoms (7^m3 to 11^m0), mud; small craft can proceed 45 a little farther up to the anchorage described above.

Coast.—Dangers.—Preshal Beag, about half a mile inland, 2 miles north-north-westward of the northern entrance point of Loch Eynort, is 1,110 feet (338^m3) high, and has a basaltic summit. Preshal Mòr, $1\frac{1}{2}$ miles northward of Preshal Beag, is a remarkable mountain with a 50 basaltic crown, 1,038 feet (316^m4) high.

The cliffs of the coast between the northern entrance point of Loch Eynort and Talisker point, the southern entrance point of Talisker bay, $3\frac{1}{2}$ miles north-north-westward, rise nearly vertically in places to an

Charts 2551, 1795.

elevation of 930 feet (283^m5), and are pierced with caves; in other places sloping braes, formed by debris, extend from half-way down the cliff to the fore-shore. Waterfalls break over the black cliffs in 5 places.

Talisker bay is open to south-westerly winds, with bad holding ground and difficult landing; at the head of the bay is a broad shingle beach, fringed with sand at low water. Talisker house is situated about three-quarters of a mile eastward of Talisker point 10 (*Lat. 57° 17' N., Long. 6° 28' W.*), and a wide belt of trees extends northward from it. Rubha Cruinn, the northern entrance point of Talisker bay, is a vertical cliff with a considerable waterfall flowing over it from an elevation of 300 feet (91^m4). About one cable westward of Talisker point is a large rock, with a smaller one eastward of it.

15 Charts 2551, 1795, 2475, 3674.

Sgeir nan Eun, situated about one cable south-westward of Rubha Cruinn, shows at low water as two or three rocks. The southernmost of these rocks is the highest, and dries about 13 feet (4^m0), but, unless the water is very smooth, it always shows. The south-western 20 summit of Rubh' an Dùnain (page 487), bearing about 144° and open south-westward of Stac a' Mheadais, leads close south-westward of Sgeir nan Eun.

Charts 2551, 1795.

From Rubha Cruinn to Rubha nan Clach, about 1½ miles northward, 25 the coast consists of broken and uneven cliffs about 20 feet (6^m1) high, a short distance within which steep braes and cliffs rise in irregular slopes to the summit, half a mile inland, which is about 820 feet (249^m9) high.

Charts 2507, 2551, 1795.

30 **Tidal streams.**—Between Geodha Daraich and the entrance to Loch Bracadale, the streams run generally in the direction of the coast; the north-west stream begins + 0530 Stornoway (+ 0115 Dover), the south-east-going stream begins — 0030 Stonoway (— 0445 Dover); the streams are not strong and the spring rate is probably not more 35 than about one knot in either direction.

Charts 2551, 1795.

LOCH BRACADALE.—Loch Bracadale, which is entered between Rubha nan Clach and Idrigill point, 3½ miles west-north-westward, is the principal inlet on the south-western coast of Skye. Within 40 Loch Bracadale are several inlets or lochs, and several islands, but only two good anchorages, for it is too open to the prevailing winds to afford good shelter generally.

Rubha nan Clach is a steep cliff, 423 feet (128^m9) high, slightly overhanging its base, with a waterfall flowing over its northern face. 45 Along the foot of the cliff large boulders and rocks lie close offshore. See view facing this page.

Idrigill point consists of exceedingly rugged vertical cliffs of from 200 to 600 feet (61^m0 to 182^m9) high.

Communications.—There is communication by sea with the 50 mainland, *via* Mallaig. There is also regular communication with the Hebrides.

There is a post office at Port nan Long, a village about 2½ miles east-north-eastward of Rubha nan Clach, and Struan, a village 3½ miles

Charts 2508, 2635.

To face page 402.



Hill.

Crinan.

Hills near
Loch.

Southern part of entrance to Loch Bracadale from south-westward.
(Original date 1830.)



Neist Point lighthouse from southward.
(Original date 1913.)



Charts 2551, 1795.

north-eastward of Rubha nan Clach, is connected with the general telephone system. There is also a post and telegraph office connected with the general telephone system at Carbost, a village on the south-western shore of Loch Harport, about 4 miles eastward of Rubha nan Clach. 5

Tidal streams.—The streams are weak in the loch generally, but in the entrance to Loch Harport, where the in-going stream begins about + 0530 Stornoway (+ 0115 Dover), and the out-going stream begins about — 0030 Stornoway (— 0445 Dover), the spring rate in 10 both directions from 0·5 to 0·8 knot.

Islands and dangers.—Wiay, the southern extremity of which is situated about 1½ miles north-north-westward of Rubha nan Clach, is 194 feet (59^m1) high, and prominent, and is the largest and outer island in Loch Bracadale. The coasts of this island are vertical cliffs, 15 and landing can only be effected in two places, one being in the small bay on the north-western side. The southern bluff is a remarkable overhanging cliff, 183 feet (55^m8) high, marked with yellow lichens and by sea birds.

A reef, which dries, extends a short distance southward and south-eastward from the bluff just mentioned, and the northern part of Wiay is fringed by a reef which dries. A rock, with a depth of 3 feet (0^m9) over it, is situated 6 cables north-eastward of the southern extremity of Wiay and about one cable from the eastern side of this island. A shoal, with a depth of 4½ fathoms (7^m8) over it, lies about 2 cables 25 north-north-eastward of the northern extremity of Wiay.

Oronsay (*Lat. 57° 20' N., Long. 6° 28' W.*), about 6 cables eastward of Wiay, forms, with Ullinish point, to which the north-eastern end of this island is joined by a reef that dries, the north-western side of the entrance to Loch Harport. The south-western part of Oronsay is 30 high and flat, the remainder being low. The south-western extremity is a vertical cliff, 229 feet (69^m8) high, and terminates in a low rocky point, on which is the Castle, a remarkable pillar of rock; this rock from the north-westward is like a turreted castle, with an oval hole near the base; from south-westward, from which direction Oronsay 35 has a wedge shape, it appears as a pillar and is not easily distinguished.

Bogha Garbh or Bo Garve, about one cable southward of the Castle, has a depth of about 6 feet (1^m8) over it, and a rock, 5 feet (1^m5) high, lies half-way between. A reef extends about 2 cables south-south-eastward from the eastern extremity of Oronsay; a small islet, 17 feet 40 (5^m2) high, lies half a cable within the outer end of this reef, and, except in very fine weather, the extremity of this reef is marked by breakers. The southern extremity of Wiay, bearing about 262° and well open southward of the Castle, leads southward of it.

Tarner island, about 6½ cables northward of Wiay, is 211 feet (64^m3) 45 high; the western side of this island is faced by remarkable cliffs.

A reef, which dries, fringes Tarner island, extending about half a cable offshore.

A chain of rocks, which dries and of which the southernmost is situated 2 cables north-eastward of the northern extremity of Tarner 50 island, extends about 4 cables north-north-eastward. There is a channel, with a depth of 3 fathoms (5^m5), about 1½ cables wide between the northern end of Tarner island and the southernmost of these rocks.

Harlosh island, about 8 cables westward of Tarner island, is 161 feet

Charts 2551, 1795.

(49^m1) high, and is surrounded by vertical cliffs except in a little sandy bay at its north-eastern end; it is moderately steep-to.

There is only a boat channel between the northern extremity of Harlosh island and Harlosh point, 1 $\frac{1}{2}$ cables north-north-eastward.

Anchorage.—Fiskavaig bay is entered between Sgùrr nan Uan, about 9 cables south-eastward of the eastern extremity of Oronsay, and Ardtreck point, about three-quarters of a mile north-north-eastward. The bay has moderate depths, and is free from dangers, but 10 it is too open for safe anchorage. The head of the bay dries out about 1 $\frac{1}{2}$ cables. There is a boat slip on the south-western side of the bay, and near it is a scattered crofting settlement.

At the north-eastern end of Oronsay (*Lat. 57° 20' N., Long. 6° 28' W.*) is a bight, where boats can lie safely and find shelter, except from 15 northerly winds.

Anchorage can be obtained about three-quarters of a cable off the north-eastern side of Tarner island, with its south-eastern extremity in line with the western extremity of Oronsay, bearing about 159°, in a depth of 6 fathoms (11^m0), clay. South-easterly and southerly winds 20 are the worst winds at this anchorage, but with good ground tackle a vessel would probably be safe here in all weathers.

Loch Harport.—Lights.—Anchorage.—Loch Harport, entered between Ullinish point and Ardtreck point, 8 $\frac{1}{2}$ cables eastward, is available as a harbour of refuge; the head of Loch Harport dries out 25 about 8 cables. Anchorage with good holding ground can be obtained in any part of it when out of the swell, and there are no dangers in the fairway. No fisherman or pilot could come off in stormy weather, but in fine weather one might be obtained by stopping off Talisker bay (page 491).

30 Ardtreck point is long, low and rocky; one cable inland the rising ground is crowned by a basaltic cliff, 30 or 40 feet (9^m1 or 12^m2) high, which rises to a summit 115 feet (35^m0) high.

A reef, which dries, extends a short distance westward from Ardtreck point, but its northern and eastern sides are steep-to.

35 A light is exhibited, at an elevation of 55 feet (16^m8), from a small white tower, situated on Ardtreck point.

Port nan Long, on the north-eastern side of Ardtreck point, is a convenient and landlocked anchorage; the head of this inlet dries out about one cable. A vessel should anchor about midway between 40 Ardtreck point and Rubha Bàn, a low green point 5 $\frac{1}{2}$ cables east-south-eastward.

The pier at Port nan Long is a concrete structure, 76 feet (23^m2) long. A vessel, not exceeding 200 feet (61^m0) in length, and of a draught not exceeding 15 feet (4^m6), can lie alongside.

45 A light is exhibited, at an elevation of 8 feet (2^m4) from a black post, 9 feet (2^m7) in height, on the head of the pier at Port nan Long.

Two lights are, occasionally, exhibited, one from each corner of the pier-head at Port nan Long.

The south-western shore of Loch Harport is mostly steep-to, but 50 in places foul ground extends about half a cable offshore. The north-eastern shore of this loch is lined with high and steep grassy banks, sometimes nearly precipitous, and it is fringed by a reef, which extends about half a cable offshore.

Two lights are exhibited, at an elevation of 16 feet (4^m9), from

Charts 2551, 1795.

a steel column, 10 feet (3^m0) in height, from the northern and southern ends, respectively, of the pier at Carbost, situated on the south-western side of Loch Harport about $3\frac{1}{2}$ miles south-eastward of Ardtreck point.

Anchorage may be obtained, in depths of from 7 to 9 fathoms (12^m8 to 16^m5), off the pier at Carbost.

Loch Beag, which is entered about $1\frac{1}{2}$ miles east-north-eastward of Ullinish point (*Lat. $57^{\circ} 20' N.$, Long. $6^{\circ} 27' W.$*), has depths of from 2 to 4 fathoms (3^m7 to 7^m3), but it is not a good anchorage, as it is *10* rather open westward. The head of this inlet dries out about 8 cables.

The Free church, manse, and school stand on the high ground at Struan, on the western side of Loch Beag, but the manse only is visible when entering Loch Harport. The Established church is situated on the northern shore of Loch Beag, about three-quarters of a mile east-*15* north-eastward of the Free church.

Gesto bay is a small inlet on the southern side of the south-eastern entrance point of Loch Beag. Gesto house is situated among trees, close to the shore, at the head of the inlet, with farm buildings southward of it.

Cnoc Mhairtein, on the southern side of the entrance to this inlet, is a round hill, 167 feet (50^m9) high, surrounded at the summit by a low cliff. The southern entrance point of Gesto bay is steep-to.

Lochs Caroy and Vatten.—Loch Caroy, which is entered between Harlosh point and Colbost point, $1\frac{1}{2}$ miles eastward, is too open for *25* safe anchorage. Both shores of this loch are fringed with a reef, which extends one cable offshore in places.

The chain of rocks extending north-north-eastward from close north-eastward of Tarner island is described on page 493; Sgeir a' Chuain, lying in the fairway, about $8\frac{1}{2}$ cables northward of the northern *30* extremity of Tarner island, is 6 feet (1^m8) high; a reef, which dries, extends about one cable east-south-eastward from it. A shoal with a depth of $2\frac{1}{2}$ fathoms (5^m0) over it, lies close southward and a shoal, with a depth of $3\frac{1}{2}$ fathoms (5^m9) over it, lies close north-north-eastward of Sgeir a' Chuain.

Loch Vatten is entered between Harlosh point, the southern extremity of Harlosh promontory, and the coast about $1\frac{1}{2}$ miles westward. It is free from dangers in its outer part, with the exception of a rock, which dries, situated about 2 cables west-north-westward of Harlosh point, and a shoal, with a depth of 5 fathoms (9^m1) over it, which *40* lies about 2 cables north-north-eastward of this rock. Harlosh promontory is of moderate height, and, in places, facing the loch, is composed of cliffs.

Loch Vatten is unsuitable for anchorage, being open to the south-westerly swell; small vessels, however, anchor close inshore in a little *45* bay, about $1\frac{1}{2}$ miles north-westward of Harlosh point (*Lat. $57^{\circ} 22' N.$, Long. $6^{\circ} 31' W.$*).

Directions.—A vessel seeking anchorage in Loch Bracadale is recommended to anchor in Loch Harport. She should make Rubha nan Clach (page 492), and, if approaching from southward, give it a *50* berth of about half a mile, and then steer for the Free church manse on the western side of Loch Beag, with the Castle a little on the port bow; the south-eastern edge of the reef extending 2 cables south-south-eastward from the eastern extremity of Oronsay is usually

Charts 2551, 1795.

marked by breakers, but, if not, great care should be taken at night to avoid it.

If blowing hard from southward or south-westward a vessel is advised to anchor in Port nan Long. If anchoring off the entrance to Loch Beag she should anchor east-north-eastward of Ardtreck point, in a depth of about 15 fathoms (27^m4), as should it come on to blow from south-westward there is less swell here than nearer the entrance to Loch Beag.

- 10 A vessel wishing to anchor off the north-eastern side of Tarner island should, from half a mile westward of Rubha nan Clach, steer to pass between Wiay and Oronsay until the narrow channel between Oronsay and Ullinish point opens out, whence she can steer for the anchorage off Tarner island, taking care not to anchor too far northward on account of the rocks north-eastward of the northern end of Tarner island.

Chart 2551.

- A vessel approaching this latter anchorage from westward should pass between Wiay and Tarner island, avoiding the 4½-fathom (7^m8) shoal 2 cables north-north-eastward of the northern end of Wiay.

Coast.—Dangers.—Between Idrigill point (page 492) and Rubha Ruadh, the promontory northward of Mi-bogha Beag, about 3½ miles west-north-westward, the coast consists of vertical cliffs from 200 to 600 feet (61^m0 to 182^m9) high, broken into fantastic forms, and is fringed by a reef, which extends in places 1½ cables offshore; this stretch of coast is only accessible in one place.

Macleod's Maidens, about 4 cables westward of Idrigill point (*Lat. 57° 20' N., Long. 6° 34' W.*) are three remarkable rocks; the largest is 200 feet (61^m0) high and lies on the coastal reef about 100 feet (30^m5) offshore; the other two, which resemble the larger one in form, are not so high, and lie close westward of it.

From about 1½ cables southward of Rubha Ruadh a chain of rocks extends about 1½ miles southward. An Dubh sgeir, the southernmost of these rocks, is narrow, black, 16 feet (4^m9) high, and is steep-to on its southern side; rocks, which dry, extend about 3½ cables northward from An Dubh sgeir. Mi-hogha Mòr, about 6 cables northward of An Dubh sgeir, dries 9 feet (2^m7), and a shoal bank extends about one cable south-eastward from it. Mi-bogha Beag, the northernmost of these rocks, dries 3 feet (0^m9).

- 40 There is a least depth of 3 fathoms (5^m5) in the channel northward of An Dubh sgeir, which is sometimes used by small vessels at high water, but it is not so generally used as the channel northward of Mi-hogha Mòr, in which there is a least depth of 5 fathoms (9^m1).

From Rubha Ruadh to the entrance to Lorgill bay, about 1½ miles north-westward, the coast consists of vertical cliffs, pierced with caves. This stretch of coast is fringed by a reef which extends about one cable offshore.

Damsel rocks, on the north-western side of the entrance to Lorgill bay, extend about 1½ cables offshore, and have a depth of less than 6 feet (1^m8) over them.

From the north-western side of Lorgill bay, The Hoe, a headland, extends about 1½ miles north-westward to Hoe Rape; this headland has a vertical face of black rock, intersected at intervals of about 20 feet (6^m1) by horizontal reddish veins. At Gob na Hoe,

Chart 2551.

about 6 cables south-eastward of Hoe Rape, the cliffs attain an elevation of 662 feet (201^m8).

The south-western coast of The Hoe may be approached to half a cable. Rocks, with a depth of less than 6 feet (1^m8) over them, extend about half a cable westward; and a rock, with a depth of less than 6 feet (1^m8) over it, lies close offshore, about 2 cables north-eastward of Hoe Rape.

Moonen bay is entered between Hoe Rape and Neist point, 2½ miles north-westward. Waterstein head, 2 miles north-north-westward 10 of Hoe Rape, is a hill which rises precipitously from the sea to an elevation of 960 feet (292^m6), and is a good landmark.

Neist point, the western extremity of Skye, is low, the columns appearing as if they had been neatly cut off a few feet above the sea, but it rises at 3 cables north-north-eastward to a hill, 302 feet (92^m0) 15 high, terminating in a sharp point and showing a vertical face of basaltic columns northward.

Light.—Fog signal.—A light is exhibited, at an elevation of 140 feet (42^m7), from a white tower, 62 feet (18^m0) in height, situated on Neist point; *see* view facing page 492. 20

A fog signal is sounded from the lighthouse.

Coastguard.—An auxiliary watch is kept on Neist point; *see* page 10.

Local magnetic anomaly.—A local magnetic anomaly is reported to increase considerably the normal magnetic variation in the area between Neist point and Skerryvore (page 258). 25

Tidal streams.—Between Loch Bracadale and Neist point, the north-west-going stream begins + 0530 Stornoway (+ 0115 Dover), the south-east-going stream begins - 0030 Stornoway (- 0445 Dover); the streams run strongly, especially near An Dubh sgeir, Mi-bogha Mòr and Mi-bogha Beag. 30

Off Neist point the streams run north-westward and northward round the point between - 0410 and - 0030 Stornoway (+ 0400 and - 0445 Dover). They separate and run south-eastward and northward from the point between - 0030 and + 0215 Stornoway (- 0445 and - 0200 Dover). They run southward and south-eastward round the point between + 0215 and + 0530 Stornoway (- 0200 and + 0115 Dover), and they meet and run westward between + 0530 and - 0410 Stornoway (+ 0115 and + 0400 Dover). 35

Anchorages and inlets.—Lorgill bay is a small rocky bight, which affords no shelter. 40

Ramasaig bay, on the north-eastern side of Hoe Rape, is a small creek in the rocks; it is open westward and north-westward.

Camas nan Sithean, at the northern end of Moonen bay, between Waterstein head and Neist point, affords temporary anchorage in depths of from 8 to 11 fathoms (14^m6 to 20^m1). 45

WESTERN COAST OF ISLE OF SKYE.—From Neist point (*Lat.* 57° 25' N., *Long.* 6° 47' W.) to An Ceannach, about 2 miles northward, on the southern side of the entrance to Loch Pooltiel, the coast is cliffy and steep-to, except in a small bay just northward of Neist point. 50

An Ceannach rises in black basaltic columns to an elevation of about 600 feet (182^m0); the Merchant, a column about 50 feet (15^m2) high, is detached from the head.

Chart 2551.

Dunvegan head, the northern extremity of Dunvegan peninsula, lies about 3 miles northward of the north-eastern entrance point of Loch Pooltiel; the highest part of this promontory is about $1\frac{1}{2}$ miles south-westward of Dunvegan head, where its north-western side presents a nearly vertical cliff 1018 feet ($310^{\text{m}}2$) high; here a spur slopes down from half-way up the cliff and terminates in Biod an Athair. The head is fairly steep-to.

Tidal streams.—Between Neist point and Dunvegan head, the 10 north-going stream begins — 0410 Stornoway (+ 0400 Dover), the south-going stream begins + 0215 Stornoway (+0200 Dover); the spring rate in each direction is about 1.5 knots.

Anchorages.—There is a small cove about 2 cables north-north-eastward of Neist point, which affords good landing for boats in almost 15 any weather except south-westerly gales.

Loch Pooltiel, on the northern side of An Ceannaich, has good holding ground and moderate depths, but is exposed north-westward.

Glendale, at the head of the loch, is well cultivated, and numerous 20 cottages are dispersed over it. A schoolhouse of two stories with a slate roof lies half a mile up the river, and is visible from seaward.

There is regular communication by sea between Loch Pooltiel and other ports in the Isle of Skye, also with the Hebrides, and with the mainland, *via* Mallaig. There is a post and telegraph office at Glendale, which is connected with the general telephone system.

25 From the southern shore of Loch Pooltiel, about 9 cables eastward of An Ceannaich, rocks (*Lat.* $57^{\circ} 27' N.$, *Long.* $6^{\circ} 47' W.$), with depths of less than 6 feet ($1^{\text{m}}8$) over them, extend about one cable offshore, and about $1\frac{1}{2}$ miles east-south-eastward of the same point, rocks, with depths of less than 6 feet ($1^{\text{m}}8$) over them, extend about one 30 cable from the south-western shore of the loch. The north-eastern shore of Loch Pooltiel is steep-to.

The small Hamra river flows into the head of the loch; at its mouth is a hole with a depth of 10 feet ($3^{\text{m}}0$), where a small vessel may lie securely afloat at all times.

35 **Tidal streams.**—The tidal streams in Loch Pooltiel are weak, and eddies form.

Chart 3601.

LOCH DUNVEGAN.—Loch Dunvegan is entered between Dunvegan head and Ard Mòr, the western extremity of the Vaternish 40 peninsula, $2\frac{3}{4}$ miles north-eastward. Loch Dunvegan includes Loch Bay, which is entered on the south-western side of the head of Vaternish peninsula.

Communications.—There is regular communication by sea with the mainland, *via* Mallaig and Kyle of Lochalsh; with the various 45 ports of the Isle of Skye; and with the Hebrides.

There is a post and telegraph office at Dunvegan village, on the north-eastern side of the head of the loch, which is connected with the general telephone system.

There are roads to all parts of the island, and a daily motor service 50 to Kyleakin.

Aspect.—The south-western shore of Loch Dunvegan is generally bold as far as the northern entrance point of Leinish bay, $3\frac{1}{4}$ miles south-south-eastward of Dunvegan head. About one mile farther

Chart 3601.

south-eastward a chain of islands and islets extends south-eastward, encumbering the inner part of the loch, but among which are several small well-sheltered anchorages.

About $3\frac{1}{2}$ miles south-south-eastward of Dunvegan head, close to 5 the coast, is a post-office.

At Colbost, about one mile south-south-eastward of the northern entrance point of Leinish bay, close to the shore, is a farmhouse and a store.

Ard Mòr, a projecting peninsula, shows seaward, a cliffy face, 118 feet 10 (36^m0) high, and slopes on its eastern side to a low point, on which stands Ardmore house, which is occasionally visible from northward, connected with the western face of Ard Mòr is a remarkable perforated wall of rock, 50 feet (15^m2) high. Ard Beag, $5\frac{1}{2}$ cables northward of Ard Mòr, and connected with it and the mainland by a low 15 neck of land, is faced seaward by a dark cliff, 93 feet (28^m3) high.

Ardmore bay is entered eastward of Ardmore point, the southern extremity of Ard Mòr peninsula. Càrnach Mòr, a range of steep earth cliffs on the north-eastern shore of Ardmore bay, attains an elevation of 188 feet (57^m3) at its south-eastern end, whence the 20 elevation decreases to the mouth of Allt na Luinge, half a mile south-eastward. From this stream to Oans point, $1\frac{1}{2}$ miles south-eastward, the cliffs are not so steep.

Groban na Sgeire, about $2\frac{1}{2}$ miles southward of Ardmore point, is the north-western, and Rubha Maol, $1\frac{1}{2}$ miles east-north-eastward, 25 the north-eastern point of the promontory which divides the upper part of Loch Dunvegan from Loch Bay. The shore between Rubha Maol and Groban na Sgeire, mostly stones and low rocks, forms Lovaig bay; the hills rise steeply within the shore with earth cliffs in places, increasing in elevation to the head of the bay, and thence 30 rising in steep slopes to the foot of Sgùrr a Bhagh, an almost vertical, rocky cliff about 200 feet (61^m0) high, situated close southward of Rubha Maol (*Lat. 57° 31' N., Long. 6° 36' W.*), and extending along the south-western side of Loch Bay.

Cnoc More a Ghrobain, about one cable southward of Groban na 35 Sgeire, is a flat-topped mound 85 feet (25^m9) high. Claigan farmhouse, about 8 cables south-eastward of Cnoc More a Ghrobain, stands at an elevation of about 140 feet (42^m7) high.

Fiadhairt peninsula, the north-western extremity of which is Fiadhairt point, situated $1\frac{1}{2}$ miles southward of Claigan farmhouse; it is 40 connected with the shore by a low isthmus, over which Dunvegan castle is visible from north-westward. The coast of this peninsula is cliffy and 106 feet (32^m3) high near Fiadhairt point. Dunvegan castle, situated close to the shore about $1\frac{1}{2}$ miles south-eastward of 45 Fiadhairt point, is a massive building standing on a plateau of grey rock, with which its old lichen-covered walls appear nearly to blend. The boathouse is about three-quarters of a cable south-westward of the castle.

Uiginish point, about $4\frac{1}{2}$ cables southward of the southern extremity of the Fiadhairt peninsula, falls rather steeply from Uiginish Bonnet, 50 a hill, 166 feet (50^m6) high, $1\frac{1}{2}$ cables south-eastward of the point.

Charts 3601, 2551.

Tidal streams.—The streams in Loch Dunvegan and Loch Bay are very weak, but there may be continuous out-going flow in the

Charts 3601, 2551.

narrow channel at the head of Loch Dunvegan when the snow is melting in spring and during and after heavy rain.

Chart 3601.

- 5 **Lights.**—A light is exhibited, at an elevation of 45 feet ($13^{\text{m}}7$), from a white hut, 15 feet ($4^{\text{m}}6$) in height, situated on Uiginish point (*Lat. 57° 27' N., Long. 6° 36' W.*).

- 10 Lights are occasionally exhibited, at elevations of 12 feet ($3^{\text{m}}7$), from posts, situated on the corners of the wharf, about $4\frac{1}{2}$ cables southward of Dunvegan castle.

- Islands and dangers in the outer part of Loch Dunvegan.**—Ard Mòr peninsula, on the north-eastern side of the entrance to Loch Dunvegan, is fringed by a reef, which extends a short distance offshore; foul ground and a shoal bank extend about $1\frac{1}{2}$ cables southward from 15 Ardmore point.

- 20 Isay island, about one mile southward of the southern extremity of Ard Mòr peninsula, is 93 feet ($28^{\text{m}}3$) high, and covered with grass; its south-western extremity is a vertical bluff, 68 feet ($20^{\text{m}}7$) high, the rest of the coast being generally low. Reefs, which dry, extend about $2\frac{1}{2}$ cables northward from the northern end of Isay island, and a shoal bank extends about half a cable farther northward; Sgeir a' Chuain, the northernmost reef, dries 9 feet ($2^{\text{m}}7$). Foul ground and a bank which dries one foot ($0^{\text{m}}3$), extend about $2\frac{1}{2}$ cables east-south-eastward and thence about 2 cables southward from the south-eastern extremity 25 of Isay island; Sgeir na Caorach, near the southern end of this foul area, dries 5 feet ($1^{\text{m}}5$); a shoal, with a depth of 21 feet ($6^{\text{m}}4$) over it, lies about half a cable southward of Sgeir na Caorach. A shoal, with a depth of 5 fathoms ($9^{\text{m}}1$) over it, lies about $3\frac{1}{2}$ cables eastward of the south-eastern extremity of Isay island.

- 30 Mingay island is situated about $1\frac{1}{2}$ cables eastward of the northern part of Isay island; it is 93 feet ($28^{\text{m}}3$) high, and is fringed by a reef. The channel between these two islands is about a quarter of a cable wide at its narrowest part, and has depths of from 6 to 8 fathoms ($11^{\text{m}}0$ to $14^{\text{m}}6$) in the fairway.

- 35 Clett, an island about one cable north-eastward of the north-eastern side of Mingay island, is 81 feet ($24^{\text{m}}7$) high; its north-eastern coast is cliffty, whence it slopes south-westward. Foul ground extends about half a cable north-westward of the north-western end of Clett, and a reef, which dries, fringes its south-western side. There is a narrow 40 channel suitable for boats, between the islands of Mingay and Clett, with a least depth of 8 feet ($2^{\text{m}}4$) between the one-fathom ($1^{\text{m}}8$) lines either side.

- A spit, with a least depth of 10 feet ($3^{\text{m}}0$) over it, extends about $1\frac{1}{2}$ cables northward from Groban na Sgeire (page 499); there is a narrow 45 channel between the northern end of this spit and Sgeir na Caorach, with depths of from 21 to 47 feet ($6^{\text{m}}4$ to $14^{\text{m}}3$), in the fairway, but it should not be used by vessels of heavy draught.

- Sgeir nam Biast, about 6 cables west-north-westward of Rubha Maol (*Lat. 57° 31' N., Long. 6° 36' W.*), is 3 feet ($0^{\text{m}}9$) high; a shoal 50 bank extends about three-quarters of a cable westward and southward from it.

- Lampay islands, the northern extremity of which lies about 2 cables westward of Groban na Sgeire, consist of two islands lying from about one to $1\frac{1}{2}$ cables from the north-eastern shore of Loch Dunvegan.

Chart 3601.

These two islands are joined by a reef which dries, and a reef of sand and stones, which dries, connects the southern island with the mainland eastward. The northern island is 15 feet (4^m6) high, and flat; the southern island rises at its southern end to a mound, 33 feet (10^m1) 5 high. Foul ground and a shoal bank extend about $2\frac{1}{2}$ cables south-south-westward from the southern island.

The western extremity of Ard Mòr, bearing 000° and open westward of Isay island, leads westward of Lampay islands and the dangers in their vicinity. 10

The north-eastern shore of Loch Dunvegan for about $1\frac{1}{2}$ miles south-south-eastward of Groban na Sgeire, is fringed by a reef extending about $1\frac{1}{2}$ cables offshore in places.

Islands and dangers in inner part of Loch Dunvegan.—Buoy.—Red rock, about three-quarters of a cable southward of the northern entrance point of Leinish bay and about half a cable offshore, dries 13 feet (4^m0). Foul ground extends about one cable northward from the southern shore of Leinish bay. These dangers are covered by a red sector of Uiginish Point light, between the bearings of 038° and 126° . 15
20

A reef, which dries 15 feet (4^m6), extends about half a cable northward from Fiadhairt point. Uiginish Point light is obscured over this reef, when bearing more than 148° .

Leinish point, 110 feet (33^m5) high, about $6\frac{1}{2}$ cables south-eastward of the northern entrance point of Leinish bay, is the eastern extremity of the promontory on the southern side of that bay; foul ground and a shoal bank extend about half a cable offshore on the eastern side of that promontory. A rock, which just dries, lies $1\frac{1}{2}$ cables south-south-eastward of Leinish point and half a cable offshore. 25

About $3\frac{1}{2}$ cables south-eastward of Leinish point, and from half a cable to $2\frac{1}{2}$ cables offshore, is a group of four islets, the area within which is encumbered by reefs. Eilean Dubh Beag, the south-eastern-most and highest of this group, has an elevation of 31 feet (9^m4); foul ground extends about three-quarters of a cable east-south-eastward from the south-eastern end of Eilean Dubh Beag, and Clael a Charra, at the south-eastern end of this foul ground, dries 14 feet (4^m3). 30
35

Eilean Dubh (*Lat. $57^\circ 27' N.$, Long. $6^\circ 38' W.$*), the north-western extremity of which is situated about $1\frac{1}{2}$ cables south-eastward of Eilean Dubh Beag, is 39 feet (11^m9) high. Eilean Mòr, 60 feet (18^m3) 40 high, lies close eastward of Eilean Dubh, and Garay island, 27 feet (8^m2) high, close north-eastward of Eilean Mòr. These three islands are connected with each other by a reef which dries.

Eilean Grianal, lying in the fairway of Loch Dunvegan, about 2 cables northward of Garay island, consists of two islets, the north-western and largest of which is 23 feet (7^m0) high, with grass on its summit. Foul ground and a shoal bank extend about $1\frac{1}{2}$ cables north-westward from the north-western end of Eilean Grianal. Bo Mòr, about three-quarters of a cable west-north-westward of the north-western extremity of Eilean Grianal, dries 2 feet (0^m6), and about one cable northward and north-westward of this rock there are depths of over 50 fathoms (91^m4). Foul ground extends about three-quarters of a cable south-eastward from the south-eastern side of Eilean Grianal. Black rock, about $1\frac{1}{2}$ cables south-eastward of the south-eastern islet, dries 3 feet 50

Chart 3601.

(0^m9). Bo Channanich, about 3 cables south-eastward of the south-eastern islet, has a least depth of 3 feet (0^m9) over it.

All the dangers described above, on the south-western side of Loch Dunvegan, with the exception of the north-eastern edge of Bo Cbananich, are covered by the red sector of Uiginish Point light, between the bearings of 038° and 126°.

The extremity of the land 4 cables east-south-eastward of Uiginish Point lighthouse in line with the square tower of a church situated on the north-eastern side of the head of the loch, 6½ cables farther south-eastward (see view on chart 3601), bearing 128°, leads north-eastward of all the dangers on the south-western side of the loch. Dunvegan castle, bearing 088°, and just open southward of Gairbh eilein (see below), leads southward of Bo Channanich.

15 Sgeir Calvaig, about 1½ cables north-westward of the north-western point of Gairbh eilein and about three-quarters of a cable from the north-eastern side of the loch, is one foot (0^m3) high. Close offshore, about three-quarters of a cable north-westward of Sgeir Calvaig, is a large flat rock, which dries 2 feet (0^m6).

20 Gairbh eilein, on the north-eastern side of the fairway, is separated from the south-eastern end of Fiadhairt peninsula by a channel, about one cable wide, which is foul. Gairbh eilein is 56 feet (17^m1) high, its north-western and south-western points being cliffy; its western face is fairly steep-to, but a bank, with depths of less than 25 3 fathoms (5^m5) over it, extends about three-quarters of a cable south-eastward from the south-eastern end of the island. Several shoals and rocks lie off the north-eastern side of Gairbh eilein. Rocks which dry extend about three-quarters of a cable north-westward from the point situated three-quarters of a cable westward of Dun-

30 vegan castle. (*Lat. 57° 27' N., Long. 6° 35' W.*).

Bo na Famachd, lying in the fairway, about 1½ cables south-south-eastward of the south-eastern extremity of Gairbh eilein, has a depth of 5 feet (1^m5) over it, and is marked on its northern side by a red conical buoy.

35 The church tower on the north-eastern side of the head of the loch, bearing about 137° and open north-eastward of the post office, 2½ cables north-westward, leads north-eastward of Bo na Famachd, and bearing about 131° and open south-westward of the post office, leads south-westward of this rock. The channel on the south-western side of 40 Bo na Famachd is very narrow, with a depth of 3½ fathoms (6^m4) in the fairway, but it is convenient if proceeding to the wharf.

The head of the loch dries out about 6 cables.

Anchorages In outer part of Loch Dunvegan.—Ardmore bay affords shelter during northerly winds, but the holding ground is not 45 to be trusted, and the head of the bay is very shallow. The anchorage is with Ardmore house bearing about 278°, in a depth of about 6 fathoms (11^m0); Dunvegan head should be kept bearing not less than 231° and open southward of Ardmore point.

Vessels can anchor anywhere eastward of the Isay group, where 50 the holding ground is good. There is an excellent anchorage between Sgeir nam Biast and Isay and Mingay islands, in a position 4½ cables 285° from Sgeir nam Biast, in a depth of 14 fathoms (25^m6). The holding ground is very good, consisting of stiff mud under a thin layer of coarse sand and shell.

Chart 3601.

This anchorage, as well as any other selected eastward of the Isay group, is well sheltered from all winds from westward of north and south, but winds from eastward raise an unpleasant sea, especially winds from south-east, which increase their normal force by katabatic effect from the high land round Beinn Breac. A small vessel can obtain anchorage in the southern part of the channel between Isay and Mingay island. 5

Lovaig bay affords anchorage, in depths of from 7 to 11 fathoms (12^m8 to 20^m1), good holding ground. 10

Anchorages in inner part of Loch Dunvegan.—Camalaig bay, on the northern side of Fiadhairt peninsula, is encumbered with rocks, and is unsuitable for anchorage.

Leinish bay, on the south-western side of the loch, affords anchorage, in a depth of about 7 fathoms (12^m8), but it is small, and open northward. A vessel entering this bay should steer for its head, bearing about 200° . 15

Loch Mòr, between the northern part of Eilean Dubh and the western shore of Loch Dunvegan, affords good anchorage to small vessels with the north-western extremity of Eilean Dubh (*Lat. $57^\circ 27' N.$, Long. $6^\circ 38' W.$*), bearing 086° , distant about $1\frac{1}{2}$ cables, in a depth of 4 fathoms (7^m3). 20

The entrance to Loch Mòr, between Eilean Dubh Beg and Eilean Dubh, is obstructed by a bar with a depth of 13 feet (4^m0) over it. There are numerous dangers southward of this anchorage. 25

Loch Erghallan, on the south-western side of the inner part of Loch Dunvegan, is entered between Uiginish point and Bo Channanich, and affords anchorage to small vessels, in depths of from 5 to 7 fathoms (9^m1 to 12^m8), mud.

There is well-sheltered anchorage for small vessels between the point three-quarters of a cable westward of Dunvegan castle and the south-eastern extremity of Gairbh eilein, with the wharf (*see below*) in line with the manse at the head of the loch, $9\frac{1}{2}$ cables south-south-eastward, bearing 160° , in a depth of $4\frac{1}{2}$ fathoms (7^m8), but the holding ground is rocky and not to be trusted. 30

There is anchorage for small vessels in mid-channel, with the flag-staff of Dunvegan castle bearing about 030° , in a depth of about $4\frac{1}{2}$ fathoms (8^m7), good holding ground. 35

Wharf.—The wharf, situated $4\frac{1}{2}$ cables southward of Dunvegan castle, is constructed of stone with wooden outer piles and is 68 feet (20^m7) long; it has depths of from 10 to 11 feet (3^m0 to 3^m4) alongside. 40

Life-saving.—A life-saving apparatus is maintained at Dunvegan. *See page 9.*

Trade.—The principal exports are wool, sheep, cattle, fish, timber and eggs. 45

Loch Bay.—Loch Bay, the principal approach to which is between Ardmore point and the Isay group, can also be approached southward of Isay island. Loch Bay is entered between Rubha Maol and Oans point, about 6 cables north-eastward. 50

Rubha Maol is a round, steep point rising $1\frac{1}{2}$ miles south-south-eastward to the northern summit of Beinn Blreac, 1,067 feet (325^m2) high.

Oans point is 105 feet (32^m0) high, rising steeply from the loch.

Chart 3601.

Waternish house, among trees and cultivated land, is about $3\frac{1}{2}$ cables north-eastward of Oans point.

A bank, with depths of less than 10 fathoms (18^m3) over it, lies in a 5 north-westerly and south-easterly direction, about 2 cables north-eastward of Rubha Maol. The least depth on this bank is 16 feet (4^m0), which lies 2 cables east-north-eastward of this point, while another small patch, with a depth of 26 feet (7^m9) over it, lies about $2\frac{1}{2}$ cables north-north-eastward of Rubha Maol.

10 Camas Lusta is situated on the eastern side of Loch Bay, about three-quarters of a mile south-eastward of Oans point (*Lat. 57° 31' N., Long. 6° 35' W.*); at Clach Bhuidhe, on its southern side, the cliffs rise almost vertically to an elevation of 200 feet (61^m0).

Stein.—Stein village, about 4 cables east-south-eastward of Oans point, has road communication with Portree and all parts of the island. There is a post and telegraph office at Stein, which is connected with the general telephone system.

Small quantities of provisions can be obtained here.

Charts 3601, 2551, 1795.

20 Directions for Lochs Dunvegan and Bay.—The entrance to Loch Dunvegan may be identified by Dunvegan head, and by Healaival Mòr, a mountain situated 7 miles south-south-eastward of Dunvegan head; this mountain is 1,530 feet (466^m3) high with a table top, and is visible from seaward when the loch is well open.

Chart 3601.

Loch Bay is a good anchorage for shelter, and is a safe place for large vessels, provided the winds are not too strong, but the holding ground is not so good as in the area eastward of the Isay group, consisting as it does of soft mud.

30 In entering Loch Bay a vessel should be careful to avoid Sgeir a' Chuain and the foul ground extending north-westward from the north-western extremity of Clett.

A vessel proceeding up Loch Dunvegan should be careful, in thick weather, not to mistake Camalaig bay for the channel through the 35 loch. When nearing Fiadhairt point she should steer for the extremity of the land 4 cables east-south-eastward of Uiginish Point lighthouse in line with the church tower on the north-eastern side of the head of the loch (*see* view on chart 3601), bearing about 128°, until the boathouse three-quarters of a cable south-westward of 40 Dunvegan castle bears 086° and is well open southward of Gairbh eilein, when she should steer for it, and take up one of the anchorages described above.

At night Eilean Grìanal and the shoals off its north-western end are covered by the *red* sector of Uiginish Point light (*Lat. 57° 27' N., Long. 6° 36' W.*), between the hearings of 038° and 126°, and the *white* sector of the light is obscured from seaward of Fiadhairt point when hearing more than 148°, but it is not advisable for a vessel without local knowledge to attempt the channel above Fiadhairt point after dark.

*Charts 2551, 1795.***NORTH-WESTERN COAST OF ISLE OF SKYE.—Dangers.**

Light.—From Ard Beag to Vaternish point, the northern extremity of Vaternish peninsula, $3\frac{1}{2}$ miles northward, the coast consists of

Charts 1795, 2475, 3761, 2508, 2635.

Charts 2551, 1795.

generally inaccessible cliffs, and attains an elevation of 260 feet ($79^{\text{m}}2$) about one mile north-north-eastward of Ard Beag. There are waterfalls over the cliffs after heavy rain.

The ruin of an ancient fort stands on the slopes above the cliffs, 5 $2\frac{1}{2}$ miles north-north-eastward of Ard Beag, and the ruin of Unish house on the northern slope of the hills, half a mile farther northward.

Vaternish peninsula, which separates Loch Dunvegan from Loch Snizort, attains an elevation of about 922 feet ($281^{\text{m}}0$) at Beinn Geary, 2 miles eastward of the northern extremity of Ard Beag and of 815 feet 10 ($248^{\text{m}}4$) at Beinn Bhuidhe, $1\frac{1}{2}$ miles farther northward. This peninsula is uncultivated, except in the vicinities of Ardmore bay and of Aros bay which is situated on the eastern side of the peninsula.

An Càmastac, situated close offshore, about $2\frac{1}{2}$ miles north-north-eastward of Ard Beag, is a rock 61 feet ($18^{\text{m}}6$) high. A rock awash 15 lies close offshore, about one cable north-north-westward of An Càmastac.

A rock, 5 feet ($1^{\text{m}}5$) high, is situated about one cable north-westward of Vaternish point; a reef, the northern part of which dries 6 feet ($1^{\text{m}}8$), extends about one cable northward of the point, and 20 is steep-to. The south-western extremity of South Ascrib (page 507), bearing about 120° and open north-eastward of the Vaternish peninsula, leads close north-eastward of this reef. Vaternish point (*Lat. $57^{\circ} 36' N.$, Long. $6^{\circ} 38' W.$*) is about 50 feet ($15^{\text{m}}2$) high, and cliffy.

A light is exhibited, at an elevation of 79 feet ($24^{\text{m}}1$), from a white 25 iron framework beacon, 35 feet ($10^{\text{m}}7$) in height, situated on Vaternish point.

Tidal streams.—From off Dunvegan head the north-going stream runs in a north-easterly direction towards Ard Beag, off which it divides; one part continues northward along the coast towards 30 Vaternish point, the other part runs southward, with a spring rate of about one knot, towards Ard Mòr. The south-west-going stream off Vaternish point turns southward round the point and runs towards Dunvegan head, and also forms an eddy which runs eastward towards Ard Beag, and then northward along the coast towards Vaternish 35 point, and southward towards Ard Mòr. Thus there is a continuous south-going stream along the coast between Ard Beag and Ard Mòr, and continuous north-going stream along the coast from Ard Beag to Vaternish point.

Off Vaternish point the north-east-going stream begins — 0355 40 Stornoway (+ 0415 Dover), the south-west-going stream begins + 0230 Stornoway (- 0145 Dover); the spring rate in each direction is about 2.5 knots. Off the middle of the entrance to Loch Dunvegan the spring rate in both directions is probably not more than about one knot. 45

Between Vaternish point and Ru Bornaskitaig the streams run about east-north-eastward and west-south-westward across the entrance to Loch Snizort, and off Ru Bornaskitaig the east-north-east-going stream begins — 0410 Stornoway (+ 0400 Dover), the west-south-west-going stream begins + 0215 Stornoway (- 0200 Dover); 50 the spring rate in each direction about 2.5 knots. The streams lose strength east-north-eastward of Vaternish point and west-south-westward of Ru Bornaskitaig, and are probably weak, spring rate not more than about one knot, midway between the points.

Charts 2551, 1795.

An eddy probably forms eastward off Vaternish point during the east-north-east-going stream, and along the land eastward of the point the stream probably runs nearly continuously westward. Eddies form in Camas Mòr, south-westward of Ru Bornaskitaig, during the streams in both directions, and in this bay the north-east-going stream begins about + 0345 Stornoway (- 0030 Dover), and the south-west-going stream begins about -- 0240 Stornoway (+ 0530 Dover); spring rate in both directions about one knot.

10 Charts 1202, 2551.

LOCH SNIZORT.—Loch Snizort is entered between Vaternish point and Dun Liath, about 7 miles east-north-eastward, and is open northward. The loch trends about 7 miles south-south-eastward to Lyndale point, where it bifurcates, the western arm being called 15 Loch Greshornish, and the eastern Loch Snizort Beag.

Loch Snizort is deep, and there are but few dangers in the fairway.

Aspect.—The south-western shore of Loch Snizort between Vaternish point and Gob Uisgebrigh, $8\frac{1}{2}$ miles south-eastward, consists chiefly of steep cliffs from 200 to 300 feet (61^m0 to 91^m4) high. Caisteal 20 an Fhithich, 2 miles south-eastward of Vaternish point, is a steep rock, 102 feet (31^m1) high, projecting from the cliffs.

Between Oans point (*Lat. 57° 33' N., Long. 6° 32' W.*), $2\frac{1}{2}$ miles south-south-eastward of Caisteal an Fhithich, and Gob Uisgebrigh, the western entrance point of Loch Diúbaig, the south-western shore is 25 steep, rocky, and hacked by cliffs, which, about three-quarters of a mile north-westward of Gob Uisgebrigh, attain an elevation of 469 feet (142^m9). The waterfall of Allt Achaidh Bhig, 110 feet (33^m5) high, situated $1\frac{1}{2}$ miles north-westward of Gob Uisgebrigh, is noticeable after rain.

30 Chart 1202.

The cliffs backing the shore, between Greshornish point, $1\frac{1}{4}$ miles north-eastward of Gob Uisgebrigh, and the eastern entrance point of Loch Diúbaig, are rugged and steep, attaining an elevation of 287 feet (87^m5) just under the conspicuous summit of Maol na h Airde, $6\frac{1}{2}$ cables 35 south-westward of Greshornish point. Maol na h Airde is 306 feet (93^m3) high.

Chart 2551.

The land is mountainous on the eastern side of Loch Snizort, but the outline of the hills is smooth, being covered by grass with a little 40 heather.

Dun Liath, the summit of the eastern entrance point of Loch Snizort, slopes with grassy land south-westward towards the loch, but its northern face is a cliff of columnar formation, 242 feet (73^m8) high. The point rises to a long tableland, and the headland takes its name 45 from a ruined fort or dun which is visible on the western slope.

About $1\frac{1}{4}$ miles east-south-eastward of Dun Liath is a conspicuous kirk, and there are farm buildings and a house at Monkstadt, about 2 miles south-south-eastward of Dun Liath.

Charts 3669, 2551.

50 The eastern shore of Loch Snizort from Dun Liath to Ru Idrigil, $3\frac{1}{2}$ miles south-south-eastward, is low, with sloping cultivated country extending a mile or more inland, and studded here and there with farm and other buildings, above which rises Meall nan Suireamach

Charts 3669, 2551.

(page 485). Dun Skudburgh, $6\frac{1}{2}$ cables northward of Ru Idrigil and close to the shore, is a remarkable hillock, 196 feet (59^m7) high. Its western face is cliffy, and detached from it is the Stack of Skudburgh, a column 72 feet (21^m9) high, surrounded by boulders and stones. Ru Idrigil, the northern entrance point of Uig bay, rises in a steep grassy slope to a belt of stratified cliff about 50 feet (15^m2) wide surrounding its upper part, which is a mound 389 feet (118^m6) high.

Chart 3669.

Ru Chorachan, the southern entrance point of Uig bay, $8\frac{1}{2}$ cables southward of Ru Idrigil, rises in a slope to an elevation of 169 feet (51^m5); its upper part is a stratified cliff, but it is not well defined.

Chart 1202.

The promontory terminating in Lyndale point (*Lat. $57^{\circ} 32' N.$, Long. $6^{\circ} 24' W.$*) divides Loch Greshornish from Loch Snizort Beag; it is of irregular outline, and rises to an elevation of 206 feet (62^m8). The point is a steep-to shelf of low rock.

Chart 2551.

Tidal streams.—The streams are inappreciable in the wide outer loch.

In Loch Snizort Beag and Loch Greshornish very weak in-going streams begin about + 0555 Stornoway (+ 0140 Dover), and very weak out-going streams begin about - 0025 Stornoway (- 0440 Dover).

Islands, dangers and banks in the outer part of Loch Snizort.—On the south-western side of the entrance to Loch Snizort, between Vaternish point and Caisteal an Fhithich, a bank, with depths of from 10 to 20 fathoms (18^m3 to 36^m6) over it, extends as much as 7 cables offshore; a shoal, with a depth of 6 fathoms (11^m0) over it, lies on this bank, about $7\frac{1}{2}$ cables north-north-westward of Caisteal an Fhithich.

Dun Liath is fringed by a reef, which extends about half a cable offshore; a shoal, with a depth of $3\frac{1}{2}$ fathoms (6^m4) over it, lies about $2\frac{1}{2}$ cables west-south-westward of Dun Liath.

Ascrib islands extend about $1\frac{1}{2}$ miles south-eastward from a position about 3 miles eastward of Vaternish point. These islands are uninhabited, and are used for pasturing sheep and cattle; they are the resort of sea birds and seals.

Eilean Iosal, the north-westernmost of this group, is 24 feet (7^m3) high, and flat; it is fringed by a reef. Eilean Creagach, one cable south-eastward of Eilean Iosal, is 112 feet (34^m1) high; these two islands are separated from each other by a rocky channel awash at very low springs. Sgeir a' Chuain, about $4\frac{1}{2}$ cables east-north-eastward of Eilean Creagach, is 6 feet (1^m8) high, and rocks, which dry, extend about three-quarters of a cable north-westward and south-eastward from it. A shoal, with a depth of $4\frac{1}{2}$ fathoms (8^m7) over it, lies about $1\frac{1}{2}$ cables west-north-westward of Sgeir a' Chuain.

Eilean Geary, about $2\frac{1}{2}$ cables south-eastward of Eilean Creagach, is 61 feet (18^m6) high. Sgeir a' Chapuill, about $1\frac{1}{2}$ cables eastward of Eilean Geary, is a group of above-water rocks. Between Sgeir a' Chapuill and Sgeir a' Chuain are shoals, with a least depth of $2\frac{1}{2}$ fathoms (4^m1) over them. The channel between Eilean Geary (*Lat. $57^{\circ} 35' N.$, Long. $6^{\circ} 31' W.$*) and Sgeir a' Chapuill has a depth of $1\frac{1}{2}$ fathoms (3^m2) in it, and can be used by small vessels with local knowledge.

Chart 2551.

South Ascrib, the southernmost island of this group, is 126 feet (38^m4) high and there is a stone hut near its northern extremity. It is connected with Eilean Geary by a reef that dries; Scalp rock, about 1 $\frac{1}{2}$ cables north-westward of the south-western extremity of South Ascrib, is awash, and steep-to on its western side; the channel south-eastward of this rock is foul.

Chart 3669.

About 2 $\frac{1}{2}$ cables north-north-eastward of Ru Idrigil, on the coastal reef, are some rocks, 16 feet (4^m9) high. A rock, 9 feet (2^m7) high, lies close northward of Ru Chorachan, and a spit, with a least depth of 2 fathoms (3^m7) over it, extends half a cable farther northward.

Christie rocks, about one mile southward of Ru Chorachan and 1 $\frac{1}{2}$ cables offshore, dry from 2 to 7 feet (0^m6 to 2^m1); there is a bank 15 with depths of less than 3 fathoms (5^m5) over it, between Christie rocks and the mainland eastward. A rock, which dries 13 feet (4^m0), is situated on the coastal reef, about 2 cables south-eastward of Christie rocks and three quarters of a cable offshore; three patches, each with a depth of 5 fathoms (9^m1) over it, lie about three-quarters 20 of a cable north-westward and westward of this rock. A shoal, with a least depth of 2 $\frac{1}{2}$ fathoms (4^m6) over it, lies in the entrance to Poll na h-Ealaidh, about 1 $\frac{1}{2}$ cables south-westward of the rock which dries 13 feet (4^m0).

The Stack of Skudburgh, bearing 000° and open westward of the 25 extreme of the land about half a mile south-south-westward of Ru Chorachan, leads close westward of Christie rocks and the 2 $\frac{1}{2}$ -fathom (4^m6) shoal described above.

Chart 1202.

Islands, dangers and banks in the inner part of Loch Snizort.
30 —A bank, with depths of from 8 to 19 fathoms (14^m6 to 34^m7) over it, extends about 3 $\frac{1}{2}$ cables north-westward from a position about 6 $\frac{1}{2}$ cables north-north-westward of Greshornish point.

Eilean Beag, about 2 $\frac{1}{2}$ cables north-westward of Lyndale point, is 66 feet (20^m1) high, and steep-to 70 yards (64^m0) offshore. Eilean 35 Mòr, about 3 cables south-westward of Eilean Beag, and 2 $\frac{1}{2}$ cables from the western side of Lyndale promontory, is 65 feet (19^m8) high, and shows a semi-columnar cliffy face northward. Scart rock, lying on the coastal reef, about 1 $\frac{1}{2}$ cables west-south-westward of the northern extremity of Eilean Mòr (*Lat.* 57° 32' *N.*, *Long.* 6° 25' *W.*.), 40 is 7 feet (2^m1) high. Bo Eilean, about one cable west-south-westward of the south-western extremity of Eilean Mòr, dries 3 feet (0^m9). There is a deep channel between Eilean Mòr and Eilean Beag, and also between these islands and Lyndale point.

Charts 1202, 2551.

45 Dun Skudburgh, bearing 014° and well open westward of Scart rock, leads westward of Bo Eilean. See view facing page 514.

Chart 1202.

Between Greshornish point and Boc a' Chro' Blric, 3 $\frac{1}{2}$ cables south-westward, a bank extends to a position about 2 $\frac{1}{2}$ cables north-north-westward of Greshornish point. Clinigan rocks, situated on this bank, about 1 $\frac{1}{2}$ cables north-north-westward of Greshornish point, consist of several heads, which dry from one to 6 feet (0^m3 to 1^m8).

The south-eastern extremity of Eilean Beag, bearing about 066° and

Chart 1202.

just open north-westward of the north-western extremity of Eilean Mòr, leads north-westward of Clinigan rocks.

A bank, with depths of from 8 to 18 fathoms (14^m6 to 32^m9) over it, extends about 5½ cables from the south-western shore of Loch Snizort to a position about 9 cables westward of Greshornish point. 5

Chart 2551.

Anchorages.—An anchorage can be obtained off the eastern shore of Loch Snizort between Ru Bornaskitaig, a salient point 9 cables north-north-eastward of Dun Liath, and Dun Skudiburgh. 10

Temporary anchorage can be obtained in fine weather between Sgeir a' Chuain and the north-eastern side of the Ascrib islands, in depths of from 8 to 10 fathoms (14^m6 to 18^m3), good holding ground. This anchorage is sheltered from south-westward and westward.

Chart 3669.

Uig bay.—Uig bay is entered between Ru Idrigil (page 506) and Ru Chorachan; its shores, which slope rather steeply to the beach, are well cultivated. 15

The head of the bay dries out about 2 cables, and there is a beach or spit of gravel and large stones, which extends about one cable south-eastward from the middle of the north-western side of this bay, and dries from 2 to 10 feet (0^m6 to 3^m0); there are depths of less than 3 fathoms (5^m5) extending about one cable southward and south-eastward from the edge of this spit. 20

Uig village (*Lat. 57° 35' N., Long. 6° 21' W.*) stands on rising ground, 25 on the south-eastern side of the head of the bay. The United Free church, about 1½ miles north-eastward of Ru Chorachan, has a spire, 200 feet (61^m0) high, southward of it there is an hotel, and a round masonry tower, 113 feet (34^m4) high, stands about three-quarters of a cable westward of the hotel. There is a prominent cottage on the 30 shore about 4½ cables north-westward and another about 4 cables south-westward of Uig hotel. The Established church, at the head of the bay, about 3½ cables northward of the United Free church is not conspicuous. There is a hospital here. Small quantities of provisions can be obtained at Uig. 35

Communications.—There are regular road services to Kyleakin and Portree.

There is regular communication by sea with other ports of Skye, also with the Hebrides, and with the mainland *via* Mallaig.

There is a post and telegraph office at Uig. 40

Pier.—Light.—About 6 cables eastward of Ru Idrigil a pier extends 330 yards (301^m7) east-south-eastward. Water is laid on to the pier.

A light is exhibited, at an elevation of 16 feet (4^m9), from a lantern on the corner of the storehouse on the pier. 45

Anchorages.—Camas Beag, the southern part of Uig bay, on the eastern side of Ru Chorachan, is a small bay free from dangers; its head dries out about half a cable, at the mouth of a small river which flows through a deep gully.

The best anchorage in Uig bay for vessels of moderate size is about 50 one cable eastward of the pier-head, in a depth of about 4½ fathoms (7^m8), mud.

There is also anchorage with the Established church bearing 041°, on which bearing it should be approached, with the pier-head distant

Chart 3669.

$2\frac{1}{2}$ cables, in a depth of 6 fathoms (11^m0); and with it distant $1\frac{1}{2}$ cables, in a depth of $4\frac{1}{2}$ fathoms (8^m7), mud.

Chart 2551.

5 Aros bay.—Aros bay is entered on the south-western side of Loch Snizort, north-westward of Oans point; it is free from dangers outside the reef, which extends about one cable from the southern shore of the bay. Oans point is 90 feet (27^m4) high, and a reef which dries extends about half a cable northward from it.

10 There are moderate depths in Aros bay, and a vessel can obtain temporary shelter here during a south-westerly gale, anchoring in the middle of the bay, about 7 cables west-north-westward of Oans point, in depths of from 10 to 17 fathoms (18^m3 to 31^m1). Ascrib islands offer some shelter from north-easterly winds.

Chart 3669.

Poll na h-Ealaith.—Poll na b-Ealaith (page 508), on the eastern side of Loch Snizort, is a small inlet, affording anchorage, in depths of from 2 to 3 fathoms (3^m7 to 5^m5). Dun Maraig (*Lat. $57^{\circ} 33' N.$, Long. $6^{\circ} 23' W.$*), on the southern side of this inlet, about one cable 20 eastward of the southern entrance point, is an islet 19 feet (5^m8) high, on which are the ruins of an old castle; the bight southward of this islet dries.

A farm, situated on the northern side of the head of Poll na h-Ealaith, about $1\frac{1}{2}$ cables eastward of the northern entrance point, is prominent 25 when bearing less than 080° . Cuidrach house, which is conspicuous from southward, is situated about one cable northward of this farm.

A vessel entering Poll na h-Ealaith should be careful to avoid the $2\frac{1}{2}$ -fathom (4^m6) shoal lying in the entrance.

Chart 1202.

30 Loch Diúbaig.—Loch Diúbaig, on the south-western side of Loch Snizort, is free from dangers in the fairway, but the head of this loch dries out about $1\frac{1}{2}$ cables. The anchorage is small and open northward; the holding ground in the middle is good, and small vessels shelter here from southerly and westerly winds.

35 Loch Greshornish.—Loch Greshornish, the western arm of Loch Snizort, is entered between Greshornish point and Rubha Bhreiden, $7\frac{1}{2}$ cables eastward; it affords anchorage in all parts, in depths of from 4 to 15 fathoms (7^m3 to 27^m4).

Lynedale house, on the eastern side of the loch, about $8\frac{1}{2}$ cables 40 south-south-eastward of Rubha Bhreiden, is nearly surrounded by trees, but shows well from north-westward.

Both the eastern and western shores of Loch Greshornish are fringed by reefs, which extend half a cable offshore in places.

Charts 1202, 2551.

45 Sgeir an Dùin, situated close offshore, on the western side of Loch Greshornish, about $2\frac{1}{2}$ cables south-south-eastward of Greshornish point, dries 12 feet (3^m7). Scart rock (page 508) in line with Dun Skudburgh (page 507), bearing 010° , leads close eastward of this rock.

Chart 1202.

50 Lynedale bay, on the eastern side of Loch Greshornish, is entered between Rubha Bhreidein and a point about 9 cables south-south-westward. A shoal, with a depth of $4\frac{1}{2}$ fathoms (7^m8) over it, lies about $3\frac{1}{2}$ cables southward of Rubha Bhreidein, and a shoal, with a least depth of $1\frac{1}{2}$ fathoms (2^m9) over it, lies $2\frac{1}{2}$ cables farther southward.

Chart 1202.

The western extremity of the land about $1\frac{1}{2}$ cables northward of Rubha Bhreidein in line with the eastern extremity of Eilean Beag, bearing 010° , leads westward of these shoals. A shoal, with a depth of 3 fathoms ($5^{\text{m}}5$) over it, lies about $1\frac{1}{2}$ cables north-north-eastward of the southern entrance point of Lynedale bay. 5

Crachan rock, situated on the eastern side of Loch Greshornish, about $2\frac{1}{2}$ miles south-south-westward of Rubha Bhreidein and half a cable offshore, dries 2 feet ($0^{\text{m}}6$); a shoal bank extends about three-quarters of a cable north-westward from this rock, and a rock, with a depth of less than 6 feet ($1^{\text{m}}8$) over it, lies about half a cable north-westward of Crachan rock. Rubha nan Corr, one mile southward of Greshornish point, in line with the western extremity of Eilean Mòr, bearing 018° , leads westward of this foul area. 10

Charts 1202, 2551.

The western side of the head of Loch Greshornish dries out about $2\frac{1}{2}$ cables, and the eastern side about 6 cables. 15

Chart 1202.

Edinbain.—**Communication.**—The village of Edinbain is situated on the eastern side of the head of Loch Greshornish, and possesses a hospital with a resident doctor. Small quantities of provisions can be obtained at Edinbain. 20

There is road communication with Dunvegan and Portree.

There is a post and telegraph office at Edinbain, which is connected with the general telephone system. 25

Charts 1202, 2551.

Loch Snizort Beag.—**Dangers.**—Loch Snizort Beag is entered between Lyndale point and a point about 9 cables north-north-eastward. The head of the loch dries out about $1\frac{1}{2}$ miles. The village of Skeabost is situated close to the head of Loch Snizort Beag. 30

Chart 1202.

The off-lying shoals in this loch are few, and the shelter excellent. Anchorage can be obtained in any part of Loch Snizort Beag, where the depth is suitable; the bottom is mud, and the holding ground good.

The south-western shore of Loch Snizort Beag is bold and steep as far southward as Rubha Dubh, $2\frac{1}{2}$ miles south-eastward of Lyndale point. Cladhacamus is entered between Rubha nan Cudaigen, about $1\frac{1}{2}$ miles south-eastward of Lyndale point and the shore 2 cables westward; a considerable stream flows into its head, which dries out about $1\frac{1}{2}$ cables. 35

The north-eastern shore of the loch is backed by sloping land, which is either cultivated or covered with grass; it is generally fairly steep-to. There are several houses on this shore; Kingsburgh house (*Lat. $57^\circ 31' N.$, Long. $6^\circ 21' W.$*) is situated $1\frac{1}{2}$ miles within the entrance of the loch, with its boathouse and storhouse on the beach; the latter is conspicuous. 40

Both shores of the loch are fringed by a reef, which extends three-quarters of a cable offshore in places. Beaton rock, about $1\frac{1}{2}$ miles south-eastward of Lynedale point and one cable from the north-eastern shore, has a least depth of 4 feet ($1^{\text{m}}2$) over it. 45

Odhair sgeir, situated about three-quarters of a cable north-north-westward of Rubha Dubh, dries 10 feet ($3^{\text{m}}0$). A reef extends about three-quarters of a cable north-north-westward from Aird point, which is situated $4\frac{1}{2}$ cables south-eastward of Rubha Dubh, and forms the 50

Chart 1202.

eastern entrance point of Loch Treaslane. Sgeir Dhubh, at the north-western edge of this part of the coastal reef, dries 15 feet (4^m6). About 1½ cables east-south-eastward of Aird point the coastal reef dries 3 feet (0^m9).

About half a mile east-north-eastward of Aird point is the mouth of Romesdal river, from which a bank of gravel and stones dries out about 2 cables; the south-western edge of this bank is steep-to.

Chart 2551.

- 10 **Communications.—Port facilities.**—There is a telephone office at Bernisdale village, on the south-western side of the loch, about 1½ miles southward of Aird point. There is a post and telegraph office at Skeabost, which is connected with the general telephone system.

Small quantities of provisions can be obtained at Bernisdale.

15 Charts 1202, 3669, 2551.

Directions.—A vessel approaching Loch Snizort from westward should not round Vaternish point until the south-western extremity of South Ascrib bears 120° and is open north-eastward of the point so as to avoid the reef extending northward from this point. A prudent 20 berth should be given to the Ascrib group, and, if passing castward of them, a vessel should pass eastward of Sgeir a' Chuain.

A vessel approaching from north-eastward can pass on either side of An t-Iasgair (page 513), and thence steer into the loch. An t-Iasgair is covered by a green sector of Eilean Trodday light (page 514) between 25 the bearings of 322° and 062°.

A vessel entering Uig bay should close Ru Idrigil to within about 2 cables, and thence steer south-eastward until the Established church at the head of the bay bears 041°, whence she should steer for it on that bearing, and anchor as directed on page 509.

30 A vessel entering Loch Greshornish should steer for Lynedale house bearing 138°, and pass about midway between Greshornish point (*Lat.* 57° 31' *N.*, *Long.* 6° 26' *W.*) and Eilean Mòr. Thence she should steer up the loch with Scart rock in line with Dun Skudiburgh, bearing 010°, astern, until southward of Sgeir an Duin, whence she 35 should keep in mid-channel until in the narrowest part of this loch. She should then steer with Rubha nan Corr in line with the western extremity of Eilean Mòr, bearing 018°, astern, which leads to the anchorage.

A vessel approaching Loch Snizort Beag, when well southward of Ru 40 Chorachan, should steer with the Stack of Skudiburgh bearing more than 000° and open westward of the extremity of this land about half a mile south-south-westward of Ru Chorachan, astern, so as to pass westward of Christie rocks, and thence steer south-eastward through the loch, taking care to avoid Beatson rock, to the anchorage off or 45 above Kingsburgh storehouse.

Charts 2551, 1795.

COAST.—Dangers.—From Dun Liath (page 506) the coast trends about 9 cables north-north-eastward to Ru Bornaskitaig, and thence about 2½ miles north-eastward to Ru Meanish. Ru Bornaskitaig is 50 114 feet (34^m7) high.

Duntulm bay is entered between Ru Meanish and Rubha Voreven, 8 cables northward.

From Ru Voreven the coast trends about 3½ cables north-eastward

Charts 2551, 1795.

to a flattish promontory extending 5 cables north-westward. Rubha Hunish is the extremity of this promontory. The northern and north-eastern sides of this promontory are vertical cliffs about 50 feet ($15^{\text{m}}2$) high, and its outer part, except the western extremity, is steep-to. 5
The south-going stream sets very close round it.

Eilean Tulm (Tuilm), which lies about one cable east-north-eastward of Ru Meanish, extends across the entrance of Duntulm bay, and is 112 feet ($34^{\text{m}}1$) high. A reef extends about half a cable southward from the south-eastern end of this island, and a reef, which dries from 10 about 8 to 15 feet ($2^{\text{m}}4$ to $4^{\text{m}}6$), extends about $1\frac{1}{2}$ cables north-north-westward of the north-western end. Sgeir nan Sgarbh, close northward of the northern end of this latter reef dries about 15 feet ($4^{\text{m}}6$); there is a narrow channel close southward of Sgeir nan Sgarbh, with a depth of 4 fathoms ($7^{\text{m}}3$), and a very narrow channel north-eastward 15 of it, with a depth of 5 fathoms ($9^{\text{m}}1$) in the fairway.

Off-lying islets.—An t-Iasgair, situated about $2\frac{1}{2}$ miles northward of Dun Liath and $1\frac{1}{2}$ miles offshore, consists of four islets or rocks, the highest of which has an elevation of 71 feet ($21^{\text{m}}6$), and is inaccessible, except at its western end. An t-Iasgir is steep-to. 20

Coastguard.—Life-saving.—There is a coastguard station at Duntulm, a village at the southern end of Duntulm bay, and there is a look-out station on the high ground above Rubha Hunish (see page 513). A line-throwing apparatus is maintained here; see page 9. 25

Tidal streams.—Off Rubha Hunish, as off Ru Bornaskitaig, the 25 north-east-going stream begins — 0410 Stornoway (+ 0400 Dover), the south-west-going stream begins + 0215 Stornoway (- 0200 Dover); the spring rate in each direction is about 2·5 knots. Off both the points the streams run in the general direction of the coast, but there are probably eddies, similar to those in Camas Mòr (see page 506), in Lub 30 Score and in Duntulm bay.

Anchorages and inlets.—Camas Mòr, entered between Dun Liath and Ru Bornaskitaig, is connected by road with Kilvaxter, a village about one mile south-eastward and has a pier. There is a considerable population in this neighbourhood. 35

Lub Score is entered between Ru Bornaskitaig and Ru Meanish; it is free from dangers, and the depths decrease gradually towards the shore. 35

Duntulm bay is a convenient anchorage for small vessels; it is open north-westward, but is sheltered from westward by Eilean 40 Tulm.

The southern entrance to Duntulm bay is marked by the ruin of Duntulm castle, and the turn northward, after passing the reef extending southward from Eilean Tulm (*Lat. 57° 41' N., Long. 6° 21' W.*), is sharp. 45

The northern entrance to Duntulm bay is north-eastward of Sgeir nan Sgarbh.

A vessel should moor a little northward of the narrowest part of the anchorage, and close to Eilean Tulm. In a south-westerly or westerly gale, a vessel will ride with her stern to the island, and the only inconvenience felt will be a swell on the beam when the stream outside slackens. 50

There is a telegraph office at Duntulm, and small quantities of provisions can be obtained here.

Charts 2551, 1794, 1795.

NORTHERN COAST OF ISLE OF SKYE.—**Light.**—The coast between Rubha Hunish and Rubha na h-Aiseig, $1\frac{1}{2}$ miles eastward, is cliffy, and forms a bay fringed by a reef in places. This bay has 5 moderate depths of over a bottom of sand and shells, but it is unsuitable for anchorage.

Eilean Trodday, $8\frac{1}{2}$ cables northward of Rubba na h-Aiseig, is 141 feet ($43^m 0$) high. It is basaltic, and there is an isolated column off its north-eastern coast.

10 A light is exhibited, at an elevation of 160 feet ($48^m 8$), from a white beacon, 16 feet ($4^m 9$) in height, situated on the summit of Eilean Trodday.

Tidal streams.—In the channel between Rubha na h-Aiseig and Eilean Trodday the streams run about eastward and westward, but 15 westward of Rubha Hunish and eastward of the channel they run about north-eastward and south-westward. In the channel the east-going stream begins — 0355 Stonoway (+ 0415 Dover), the west-going stream begins + 0230 Stornoway (- 0145 Dover); the spring rate in each direction is about 2·5 knots.

20 There are probably eddies in the bay between Rubha Hunish and Rubha na h-Aiseig.

Off-lying Islands and dangers.—**Beacons.**—**Anchorage.**—Gearran islet and Am Bord, an islet close eastward of it, are situated about $2\frac{1}{2}$ miles west-north-westward of Rubha Hunish; they have flat 25 summits, and black vertical columnar cliffs about 100 feet ($30^m 5$) high, which appear inaccessible. A peculiar cave penetrates Gearran islet from eastward to westward, and at certain states of the tide it appears possible for a rowing boat to traverse this cave.

A shoal, with a depth of $3\frac{1}{2}$ fathoms ($6^m 4$) over it, extends about 30 one cable eastward from Am Bord, and a shoal, with a depth of 28 feet ($8^m 5$) over it, lies about one cable south-eastward of the same islet.

Schoun, an islet about one cable northward of Gearran islet, is remarkable for having a portion of a basaltic column standing on it. The channel between Gearran islet and Schoun is foul.

35 Gaeilavore islet, about one cable west-north-westward of Schoun, is a large rock, 161 feet ($48^m 1$) high, with a rounded outline and a vertical face southward. A chain of jagged rocks, known as the Cleats, extends about one cable east-north-eastward of Gaeilavore islet (*Lat. 57° 44' N., Long. 6° 26' W.*), and terminates in Thon eilean.

40 (See view facing this page). The channel between Gualavore islet and Fladdachuain, 4 cables northward, is encumbered with rocks.

Fladdachuain is a narrow uninhabited island, 75 feet ($22^m 9$) high; a reef, which dries and on which are some above-water rocks, extends about $1\frac{1}{2}$ cables east-south-eastward from its south-eastern end. The 45 south-western coast of Fladdachuain is fringed with reefs, which extend in places about one cable offshore. The north-eastern side of this island is cliffy, and free from dangers. Boat cove, a small inlet amongst the rocks, near the middle of the south-western side of Fladdachuain, is said to afford good shelter to small craft during the summer.

50 With southerly winds a landing can be effected about the middle of the north-eastern side of Fladdachuain; a landing can also be easily effected at the north-western end of the island.

There is indifferent anchorage during fine weather on the south-western side of Fladdachuain, with the highest part of that island

Charts 2475, 3674, 2508, 2635.

Dun Skudiburgh.



Scart
Rock.

Killan Minn.

Dun Skudiburgh, bearing 014° and open westward of Scart rock.
(Original dated 1842.)



Gruin (is.).

Schawn.

Guslayer
isls.

Thorn islets.

Islets north-westward of Rubha Hunish from north-eastward.
(Original dated prior to 1864.)



Kyleakin lighthouse.
(Original dated 1930.)



Rona lighthouse.
(Original dated 1920.)

Charts 2551, 1794, 1795.

bearing 042° , and Gaeilavore islet bearing 144° , in a depth of 16 fathoms (29^m3), broken shells. Some protection from the tidal streams may be obtained here.

Sgeir nam Maol, about $1\frac{1}{2}$ miles east-north-eastward of the south-eastern extremity of Fladdachuin, consists of two large patches of rock. The south-eastern patch dries 11 feet (3^m4), and the north-western one, about a cable farther north-westward, dries about 12 feet (3^m7). The northern and eastern sides of Sgeir nam Maol are steep-to, but foul ground and a shoal bank extend about 3 cables westward from the south-eastern patch. A black beacon, consisting of six iron legs and a cylindrical cage surmounted by a cross, 40 feet (12^m2) in height, stands on the southern end of the south-eastern patch.

The channel between these two patches has depths of from 3 to 15 feet (0^m9 to 1^m8), and is encumbered with rocks covered with long weeds.

Comet rock, about 3 cables south-south-eastward of Sgeir nam Maol beacon, has a depth of 3 feet (0^m9) over it, and about half-way between is a small rock, which dries 11 feet (3^m4); a shoal bank extends about 20 5 cables south-south-eastward from Comet rock. The northern extremity of Schoun in line with the southern extremity of Gaeilavore islet (*Lat. $57^{\circ} 44' N.$, Long. $6^{\circ} 26' W.$*), bearing about 260° , leads southward of the shoal bank south-south-eastward of Comet rock.

Charts 1794, 1795.

25

Eugenie rock, about $2\frac{1}{4}$ miles north-north-westward of the north-western extremity of Fladdachuin, has a depth of 3 feet (0^m9) over it, and lies near the centre of a bank, with depths of from $3\frac{1}{2}$ to 13 fathoms (5^m9 to 23^m8) over it. Sgeir Graidach, on the northern part of this bank, dries $6\frac{1}{2}$ feet (2^m0), and is marked by a red beacon, consisting of six iron legs and a cylindrical open cage surmounted by a cross, the upper part being 40 feet (12^m2) high; this rock is about 50 yards (45^m7) square, with long weed showing the same distance northward of it. The channel between Eugenie rock and Sgeir Graidach is encumbered with rocks.

35

East bank, about $1\frac{3}{4}$ miles westward of Sgeir Graidach beacon, has depths of from $8\frac{1}{2}$ to 18 fathoms (15^m5 to 32^m9). It is stated that in this locality, in a gale, the weed at the bottom has been seen; under favourable circumstances the weed could not be seen in depths of more than 5 or 6 fathoms (9^m1 or 11^m0).

40

Fladdachuin, Sgeir nam Maol, Sgeir Graidach, and the rocks in their vicinity, are covered by the red sector of Eilean Trodday light, between the bearings of 088° and 130° .

Charts 2551, 1795.

Directions.—A vessel approaching from south-westward and bound for Portree, on the eastern side of the Isle of Skye, or for one of the ports in the mainland in that vicinity, should follow the track indicated by a pecked line on the chart. She should pass about 3 miles westward and $2\frac{1}{4}$ miles north-westward of Vaternish Point light-beacon, one mile north-westward of An t-Iasgeir, one mile north-westward of Rubha Hunish and 9 cables north-westward of Eilean Trodday light-beacon (*Lat. $57^{\circ} 43' N.$, Long. $6^{\circ} 18' W.$*).

A vessel approaching from north-eastward should proceed as directed on page 445.

CHAPTER X

MALLAIG HARBOUR TO RUBH' RÉ

Charts 1594, 2496.

SOUND OF SLEAT.—The Sound of Sleat separates the south-eastern coast of the Isle of Skye from the mainland. The sound, which is from about 2½ to 4 miles wide in its south-western part, narrows 5 to about one mile in width abreast Sandaig islands (*Lat. 57° 10' N., Long. 5° 42' W.*), 10 miles north-north-eastward of Mallaig harbour (page 475), but 1½ miles farther north-eastward it is 8½ cables wide this being the narrowest part until the sound merges at its north-eastern end into Kyle Rhea. There are no dangers in the fairway, 10 of the sound, except at its extreme north-eastern end.

Aspect.—Sleat peninsula, which forms the north-western side of the south-western part of the Sound of Sleat, has several hills, which possess no distinctive character, and are from 200 to 1,000 feet (61^m0 to 304^m8) high.

15 Ard Thurinish, 1½ miles east-north-eastward of the Point of Sleat, is a bold, cliffy, indented headland. Tormore house is situated on the headland of the same name, about 1½ miles north-eastward of Ard Thurinish.

An Fhaochag, on the south-eastern side of the sound, about 3½ miles 20 north-north-eastward of Mallaig harbour, is a steep-to salient point.

Kilbeg point, on the north-western side of the sound, about 3½ miles north-eastward of Tormore house, is 89 feet (27^m1) high.

The south-eastern shore of the north-eastern part of the sound 25 from the Sandaig islands as far as the mouth of Eilanreach river, 2½ miles north-eastward, is steep-to; it becomes much higher, steeper, and more rocky than near the Sandaig islands.

Dunan Ruadh, on the north-western side of the north-eastern part 30 of the sound, about 2½ miles north-north-eastward of Sandaig islands, is 82 feet (25^m0) high, cliffy and prominent. About 7 cables northward of Dunan Ruadh, Kylerhea river flows into the sound, and there is a large area of partially cultivated and meadow land on the northern side of its entrance. There are several cottages in this locality; the ferry house, a prominent two-storied building, is situated 35 close to the coast, about one mile northward of Dunan Ruadh.

Tidal streams.—Through the whole length of the Sound of Sleat the north-east-going stream begins + 0545 Stornoway (+ 0130 Dover), the south-west-going stream begins - 0015 Stornoway (- 0430 Dover); the spring rate in each direction in the south-western, and wider, part 40 of the sound is about one knot, increasing to about 1·5 knots in the north-eastern, and narrower part. The streams are rather stronger off

Charts 2507, 2475, 2635.

Charts 1594, 2496.

the salient points on both sides, thus off Sandaig islands the spring rate in both directions is about 2 knots.

The rate of the north-east-going stream does not increase appreciably as Kyle Rhea is approached till the 20-fathom (36^m6) line off the entrance has been crossed; the south-going stream from the kyle, however, runs strongly as a narrow, rapid stream with north-going eddies on both sides of it, and, though it loses strength quickly, its rate does not fall to that of the sound till one mile or more south-by-east from Caolas an Lamhachaidh. There are heavy overfalls, 10 dangerous to boats, from a half to three-quarters of a mile south-by-east from Caolas an Lamhachaidh with strong southerly and south-westerly winds during the south-going stream.

See Tidal diagrams on chart 1594.

Chart 2496.

15

Lights.—For the lights at Mallaig *see page 475.*

A light is occasionally exhibited, at an elevation of 19 feet (5^m8), from the pier-head on the southern side of Armadale bay, about 1½ miles north-eastward of Tormore house. The light is unreliable in bad weather.

Ornsay light is exhibited, at an elevation of 58 feet (17^m7), from a white tower, 63 feet (19^m2) in height, situated on Eilean Sionnach (page 517). *See sketch on chart 2496.*

A light is exhibited, at an elevation of 27 feet (8^m2), from a white tank on a grey stone beacon, 30 feet (9^m1), in height, situated at 25 the north-eastern end of the reef extending north-eastward from the north-eastern point of Ornsay (page 518).

Chart 1594.

A light is exhibited, at an elevation of 40 feet (12^m2), from a white octagonal tower, 24 feet (7^m3) in height, situated near the north-western extremity of Sandaig islands (*Lat. 57° 10' N., Long. 5° 42' W.*).

Chart 2496.

Islands and dangers in south-western part of sound.—Bank.—For the rocks close off the Point of Sleat, on the north-western side of the south-western entrance to the Sound of Sleat, *see page 516.*

35

A bank, with a depth of 11 fathoms (20^m1) over it, lies about 1½ miles south-eastward of Ard Thurinish; the depths in the vicinity of the bank are uneven.

Bogha Chaslaic, about one mile north-eastward of Tormore house and about 1½ cables offshore, dries 3 feet (0^m9). A reef, which dries, 40 extends about 1½ cables southward from Rubha Dubh, a salient point 1½ miles north-eastward of Tormore house. Eilean Sgorach, lying close offshore, about 1½ cables east-north-eastward of Rubha Dubh, and Eilean Maol, about one cable east-north-eastward of Eilean Sgorach, are 30 and 9 feet (9^m1 and 2^m7) high, respectively. Reefs, which dry, 45 extend about three-quarters of a cable south-westward from both these islets; about one cable south-eastward of these islets there is deep water, but the shore in this vicinity should not be approached to within about 3 cables. At night the light on Eilean Sionnach in sight, bearing not more than 030°, leads well south-eastward of these dangers. 50

A reef extends about 1½ cables southward and south-eastward from the southern and steepest part of Kilbeg point. The south-eastern edge of this reef is 2 feet (0^m6) high and is generally visible, but may be covered during very high spring tides.

Chart 2496.

Airor island, on the south-eastern side of the sound, about $1\frac{1}{2}$ miles north-eastward of An Fhaochag (page 516) and $1\frac{1}{2}$ cables offshore, is 27 feet (8^m2) high, and is connected with the shore by a reef that dries; 5 foul ground extends $1\frac{3}{4}$ cables north-eastward from this island. Eilean Shamadalain, about 9 cables east-north-eastward of Airor island and $1\frac{1}{2}$ cables offshore, is 14 feet (4^m3) high, and is connected with the shore by a reef that dries; foul ground extends three-quarters of a cable north-eastward from this islet. About 7 cables north-eastward of 10 Eilean Shamadalain (*Lat. $57^{\circ} 05' N.$, Long. $5^{\circ} 44' W.$*) is the mouth of Amhainn Inhhir Ghuiserein. The deposit from this river has formed a large gravel spit which dries out about 2 cables.

Tartar rock, about $2\frac{1}{2}$ miles north-eastward of Kilbeg point and $1\frac{1}{2}$ cables offshore, has a depth of 5 feet (1^m5) over it.

15 Ornsay is connected with the shore by a reef which dries; it is 138 feet (42^m1) high and covered with grass. Eilean Sionnach, on which stands a lighthouse, is situated close eastward of, and is joined by a drying reef to, the south-eastern extremity of Ornsay. Foul ground and a shoal bank extend about $1\frac{1}{2}$ cables eastward from the 20 eastern side of Ornsay, and a reef which dries extends about one cable north-north-eastward from the north-eastern extremity of this island; an islet, 5 feet (1^m5) high, and having a few tufts of grass on it, is situated at the northern edge of this latter reef.

Islets and dangers in north-eastern part of sound.—Perch.—
25 Sgeir Ghobhlach, situated on the coastal reef, about $9\frac{1}{2}$ cables north-north-eastward of the northern end of Ornsay and three-quarters of a cable off the north-eastern shore of the sound, is an above-water rock.

Chart 1594.

Sandaig islands are a group of islands lying on the south-eastern 30 side of the north-eastern part of the sound, from about half a cable to $4\frac{1}{2}$ cables offshore; they are connected with each other and with the shore by a reef which dries. Eilean Mòr, the westernmost and largest of this group, is 64 feet (19^m5) high, and covered with grass. Sgeir nan Eun, about one cable south-eastward of Eilean Mòr, is 3 feet 35 (0^m9) high, and foul ground extends about three-quarters of a cable south-south-eastward from this rock.

A rocky shoal, with a depth of $5\frac{3}{4}$ fathoms (10^m5) over it, lies about 2 $\frac{1}{2}$ cables south-westward of the south western extremity of Eilean Mòr, and there are depths of from 7 to 10 fathoms (12^m8 to 18^m3) 40 between them.

Charts 1594, 2496.

Sgeir Chulaih, about $1\frac{1}{2}$ miles east-north-eastward of Sgeir Ghobhlach and $1\frac{1}{2}$ cables offshore, dries 6 feet (1^m8). Between Sgeir Ghobhlach and Sgeir Chulaih a shoal bank extends about $1\frac{1}{2}$ cables offshore in 45 places. The ruins of Bernera barracks, about 4 miles north-eastward of Eilean Mòr, bearing about 057° , and open south-eastward of the north-western shore of the sound, lead south-eastward of Sgeir Chulaih.

Tralcach, a rock about $1\frac{1}{2}$ miles east-north-eastward of Sgeir Ghobhlach and half a cable offshore, dries 9 feet (2^m7).

50 Chart 1594.

Between Tralcach and Dunan Ruadh there are no dangers on the north-western side of the sound, beyond half a cable offshore. A reef, which dries, extends about half a cable eastward and southward from Dunan Ruadh.

Chart 1594.

On the south-eastern side of the sound, off the mouth of Eilanreach river, a flat of gravel and sand dries out about $1\frac{1}{2}$ cables; a perch is situated about one cable westward of the southern entrance point of the river. The ruins of Bernera barracks, bearing about 050° and open north-westward of Glenelg pier, $3\frac{1}{2}$ cables south-westward of the barracks, lead north-westward of this flat. 5

Bo Beag, about three-quarters of a cable westward of the head of Glenelg pier, has a depth of 6 feet ($1^{\text{m}}8$) over it, and a shoal bank extends about half a cable farther westward. The church, situated 10 about $1\frac{1}{2}$ cables eastward of Glenelg pier, bearing 094° and open northward of the pier, leads close northward of Bo Beag.

Glenelg bay, the bay in this vicinity, and Bernera bay, the bay immediately north-westward of it, are deceptive at high water, as the shore bank dries out about $1\frac{1}{2}$ cables in places, and shoal banks 15 extend about half a cable farther offshore. Glenmore river flows into Glenelg bay just northward of Bo Beag.

Between Dunan Ruadh and the southern entrance to Kyle Rhea, one mile northward, the shore bank extends about $1\frac{1}{2}$ cables offshore in places, and a bank, with depths of less than 5 fathoms ($9^{\text{m}}1$) over 20 it, extends about $3\frac{1}{2}$ cables offshore a little southward of the entrance to Kylerhea river (*Lat. $57^\circ 13' N.$, Long. $5^\circ 40' W.$*).

A shoal, with a depth of 5 fathoms ($9^{\text{m}}1$) over it, lies about 9 cables north-north-eastward of Dunan Ruadh and 2 cables from the western shore. A shoal, with a depth of $4\frac{1}{2}$ fathoms ($8^{\text{m}}7$) over it, lies about 25 one mile north-north-eastward of Dunan Ruadh and one cable from the western shore. These two shoals are covered by the *red* sector of Kyle Rhea light (page 530), situated $1\frac{1}{2}$ miles northward of Dunan Ruadh, between the bearings of 338° and 345° . 30

Chart 2496.

Loch Nevis and approach.—Loch Nevis is approached from westward, between An Fhaochag (page 516) and Rubha Ban, 3 miles southward. The loch is entered between the southern extremity of Rubha Raonuill, a peninsula about 3 miles south-eastward of An Fhaochag, and the shore about 6 cables southward. 35

Rubha Raonuill is very hilly and steep, and attains an elevation of 338 feet ($103^{\text{m}}0$); a deep narrow valley separates it from the hills on the mainland northward. A salient point, 50 feet ($15^{\text{m}}2$) high, juts out from Rubha Raonuill about half-way along its southern side.

The winds in the loch, are very baffling even in the finest weather, 40 but during gales, or even fresh winds, the squalls are violent in force and uncertain in direction; those accompanying south-easterly and south-westerly winds are the worst at the entrance; and those with easterly winds in the upper loch, but, in any strong winds, it is a dangerous place for boats. 45

Communications.—Port facilities.—There is a post and telegraph office at Inverie village, about $1\frac{1}{2}$ miles east-north-eastward of Rubha Raonuill, which is connected with the general telephone system. Small quantities of provisions can be obtained here.

Islets and dangers in approach to Loch Nevis.—From the 50 north-western entrance point of Sandaig bay, $1\frac{1}{2}$ miles south-south-eastward of An Fhaochag, a chain of islets extends about $2\frac{1}{2}$ cables south-south-westward. Eilcan Dearg, the south-westernmost, is 67 feet ($20^{\text{m}}4$) high, and covered with heather; foul ground and a

Chart 2496.

shoal bank extend about three-quarters of a cable west-south-westward from Eilean Dearg. There is a boat channel northward of this islet.

Eilean Glas, situated $3\frac{1}{4}$ cables south-south-eastward of Eilean Dearg, is 67 feet ($20^{\text{m}}4$) high, and covered with long grass. Sgeir nan Eun, which dries 14 feet ($4^{\text{m}}3$), lies about $1\frac{1}{2}$ cables north-eastward; and a shoal, with a least depth of 5 fathoms ($9^{\text{m}}1$) over it, lies about $3\frac{1}{2}$ cables eastward of Eilean Glas (*Lat. $57^{\circ} 02' N.$, Long. $5^{\circ} 47' W.$*).

Sròn Raineach, a promontory on the southern shore of the approach to Loch Nevis, about one mile eastward of Rubha Ban, has a shoal bank extending about half a cable northward from it. From Sròn Raineach, a bank, on which lie some patches, with depths of 5 fathoms ($9^{\text{m}}1$) over them, and possibly less depths, extends north-north-eastward across the approach to Loch Nevis.

Bogha cas Sruth, about $7\frac{1}{2}$ cables south-eastward of Eilean Glas and $3\frac{1}{4}$ cables from the south-western side of Rubha Raonuill, dries about 4 feet ($1^{\text{m}}2$). Northward of Bogha cas Sruth a chain of above-water and sunken rocks extends northward to the eastern side of the entrance to Sandaig bay. Smyth rock, about $1\frac{1}{2}$ cables south-eastward of the southern extremity of Rubha Raonuill, has a charted depth of 5 fathoms ($9^{\text{m}}1$) over it, but a less depth may exist. Between Bogha cas Sruth and Smyth rock there are several shoals, with a least depth of one fathom ($1^{\text{m}}8$) over them.

Eilean Giubhais, situated on the coastal reef, about $1\frac{1}{2}$ miles eastward of Sròn Raineach, is 40 feet ($12^{\text{m}}2$) high. Foul ground and a shoal bank extend about three-quarters of a cable west-north-westward and about half a cable northward from Eilean Giubhais, and a shoal, with a least depth of $2\frac{1}{2}$ fathoms ($4^{\text{m}}6$) over it, lies about one cable north-westward of it. Bo Ruag, close offshore, about $1\frac{1}{2}$ cables east-north-eastward of Eilean Giubhais, is a large flat rock, which dries 8 feet ($2^{\text{m}}4$), and close offshore, $2\frac{1}{2}$ cables eastward of the same islet, is another large flat rock, which dries 14 feet ($4^{\text{m}}3$).

Submarine cable.—A telegraph cable is landed about $1\frac{1}{2}$ cables eastward of Eilean Giubhais; see page 7.

Dangers in Loch Nevis.—Beacons.—Bogha Don, situated on the northern side of the entrance to Loch Nevis, about $1\frac{1}{2}$ cables east-south-eastward of the south-eastern extremity of Rubha Raonuill, dries $3\frac{1}{2}$ feet ($1^{\text{m}}1$), and is marked by a concrete beacon, about 7 feet ($2^{\text{m}}1$) high, surmounted by a cross. A shoal bank extends about three-quarters of a cable south-eastward from the beacon. There are shoals and foul ground between Bogha Don and Rubha Raonuill.

The beacon on Sgeirean Glasa (see below), in line with Scottas farm, $6\frac{1}{2}$ cables farther north-north-eastward, bearing 032° , leads south-eastward of Bogha Don.

Sgeirean Glasa (Sgeir Dearg) (*Lat. $57^{\circ} 02' N.$, Long. $5^{\circ} 48' W.$*), about $3\frac{1}{2}$ cables north-eastward of Bogha Don, is a double rock, the south-eastern part of which dries 10 feet ($3^{\text{m}}0$). It is marked by an iron tripod beacon surmounted by a small square.

Eilean na Glaschoille (Eilean Cruin), situated on the shore bank 50 three-quarters of a cable offshore, about $4\frac{1}{2}$ cables north-north-eastward of the south-eastern extremity of Rubha Raonuill, is 28 feet ($8^{\text{m}}5$) high. Foul ground extends about $1\frac{1}{2}$ cables southward and south-south-eastward from Eilean na Glaschoille.

Sgeir a' Ghail, situated on the coastal reef, on the south-western

Chart 2496.

side of the loch, about $5\frac{1}{2}$ cables east-south-eastward of Eilean Giubhais, is 10 feet ($3^{\text{m}0}$) high; the coastal reef in this vicinity extends about half a cable offshore. A rock, 13 feet ($4^{\text{m}0}$) high, lies close northward; and a 5-fathom ($9^{\text{m}1}$) shoal lies about $1\frac{1}{2}$ cables east-south-eastward of Sgeir a' Ghail. Creag an Eilein, situated on the coastal reef, on the eastern side of the loch, about $1\frac{1}{2}$ miles eastward of Sgeir a' Ghail, is 8 feet ($2^{\text{m}4}$) high. The coastal reef in this vicinity extends about three-quarters of a cable offshore.

From the north-western entrance point of the narrows, a spit, with 10 a depth of less than 6 feet ($1^{\text{m}8}$) over it, extends about $4\frac{1}{2}$ cables south-westward. The navigable channel through the narrows is about 130 yards ($118^{\text{m}9}$) wide.

Sgeir an Sruth, situated close offshore, on the south-eastern side of the narrows about $2\frac{1}{2}$ cables eastward of their north-western entrance 15 point, dries 9 feet ($2^{\text{m}7}$).

Bogha an Tachard, about 9 cables east-north-eastward of the north-western entrance point of the narrows and $1\frac{1}{2}$ cables from the northern shore, has a depth of less than 6 feet ($1^{\text{m}8}$); a cottage, $1\frac{1}{2}$ cables north-eastward of the same point, bearing about 257° and 20 open southward of Rubha na Doire Cairtadh, 4 cables east-north-eastward of the cottage, leads southward of Bogha an Tachard.

Anchorages and Inlets in approach to Loch Nevis.—Mallaig Beag and Mallaig Mòr, on the southern side of the approach to Loch Nevis, about three-quarters of a cable and 5 cables eastward, respectively, of Rubha Ban (*Lat. $57^{\circ} 01' N.$, Long. $5^{\circ} 48' W.$*), are two small bays.

Sandaig bay, on the northern side of the approach to Loch Nevis, is unsafe as an anchorage, being open westward; there are numerous islets and rocks in the approach.

Port Giubhais, on the eastern side of Eilean Giubhais, is a small cove suitable for small craft; only such a vessel should approach the land within 2 cables in this vicinity.

Anchorages in Loch Nevis.—Beacon.—Lights.—Inverie bay is the area at the northern end of Loch Nevis; it is the best anchorage in 35 the loch.

Glaschoille house, $5\frac{1}{2}$ cables north-north-eastward of the south-eastern extremity of Rubha Raonuill, Scottas farm and the Manse, $4\frac{1}{2}$ cables eastward of Scottas farm, stand on the northern shore of Inverie bay. Inverie church stands on the north-eastern shore of the 40 bay, close south-eastward of Inverie village. Inverie house, surrounded by woods, stands close to the shore, $3\frac{1}{2}$ cables east-south-eastward of the church.

A telegraph beacon stands near the head of Mallaig Beag.

Between the point on which the church stands and An Cnap (*Rudhana Cruaidh*), $5\frac{1}{2}$ cables southward, the coast forms a bight, the head of which dries out about $3\frac{1}{2}$ cables.

The most sheltered anchorage in Inverie bay is northward of Sgeirean Glas, between Glaschoille house and Scottas farm. A vessel should approach this anchorage steering for Glaschoille house bearing 290° , 50 and anchor as convenient when Sgeirean Glas beacon is in line with the point on the southern side of the entrance to Loch Nevis, 8 cables south-south-westward, bearing about 192° , taking care to avoid the comparatively shoal spots lying from about $1\frac{1}{2}$ to $2\frac{1}{2}$ cables north-

Chart 2496.

north-eastward of Sgeirean Glasa beacon, as the bottom there is rock.

Anchorage can also be obtained anywhere in the eastern part of 5 Inverie bay, where the depths permit.

About $1\frac{1}{2}$ cables south-eastward of Inverie church is a small, sloping, concrete pier, but landing here is bad with southerly winds. A yacht's mooring buoy is situated about 2 cables north-north-westward of this pier, and small vessels approaching after dark should be careful 10 to avoid it.

A light is exhibited on the south-eastern end of the pier and also, at an elevation of 13 feet ($4^m 0$), on the north-western corner of the head of the pier.

Tarbet bay, on the southern side of the western entrance to the 15 narrows, affords good anchorages to small vessels with local knowledge, in depths of from 4 to 6 fathoms ($7^m 3$ to $11^m 0$), mud, but during south-westerly winds squalls are frequent.

Charts 3510, 2496.

Tidal streams in Mallaig harbour and Loch Nevis.—The in-going stream begins about + 0525 Stornoway (+ 0110 Dover), the out-going stream begins about — 0055 Stornoway (— 0510 Dover); the streams are very weak in the wide entrance to Loch Nevis, north-north-eastward of Mallaig harbour, but attain rates of about 0·5 knot 25 at springs in the entrance to Mallaig harbour and in Loch Nevis in the channel southward of Rubha Raonuill; weak streams run round the shores of Inverie bay. Farther up the loch the streams are imperceptible till the narrows are reached and the spring rate in each direction is about one knot; the streams are imperceptible in the inner loch (*Lat. $56^{\circ} 59' N.$, Long. $5^{\circ} 35' W.$*).

Directions for Loch Nevis.—A vessel approaching Loch Nevis should steer for Bogha Don beacon in line with Inverie church, bearing 075°, which leads over the rocky bank extending north-north-eastward from Sròn Raineach in a least depth of 8 fathoms ($14^m 6$).

When the south-western extremity of Eilean Dearg bears about 331° 35 and is open north-eastward of Eilean Glas, a vessel will have crossed the rocky bank mentioned above, and should steer for the entrance to the loch. When Bogha Don beacon is in line with the eastern extreme of Rubha Raonuill, bearing about 345°, she can steer for the Manse bearing about 046°. After passing south-eastward of Sgeirean 40 Glasa course can be shaped for the anchorage, as directed on page 521.

If bound higher up the loch the chart is the best guide, but the narrows should not be attempted without a pilot.

Chart 2496.

In thick weather when a vessel making Loch Nevis is unable to 45 distinguish Bogha Don beacon or Inverie church, if the south-eastern extremity of Rubha Raonuill can be distinguished, she can cross the rocky bank north-north-eastward of Sròn Raineach by keeping the south-eastern extremity of Rubha Raonuill bearing 072°. It will be necessary to see Eilean Glas to determine when the bank has been 50 crossed, as she must then proceed as directed above.

Anchorages and inlets in the south-western part of the Sound of Sleat.—Camas Daraich, on the eastern side of the Point of Sleat (*Lat. $57^{\circ} 01' N.$, Long. $6^{\circ} 01' W.$*), is useful as an anchorage during northerly winds. A vessel without local knowledge should anchor

Chart 2496.

off the centre of the entrance with Ard Thurinish (page 516) bearing about 071° and open southward of the eastern entrance point of Camas Daraich, in a depth of 8 fathoms ($14^m 6$). There are several sunken rocks farther in the bay. 5

Port na Long and Port a' Chùil, on the western and eastern sides of Ard Thurinish, respectively, are small open bays. The western side of Ard Thurinish should not be approached to within a distance of 2 cables.

Armadale bay, on the northern side of Ardavasar promontory, is 10 partially sheltered by this promontory from southerly winds, and affords anchorage in a depth of about 10 fathoms ($18^m 3$). This anchorage should only be used with great caution, for at times a considerable swell sets in.

A pier, on which a light (page 517) is occasionally exhibited, extends 15 east-north-eastward from the northern extremity of Ardavasar promontory.

Armadale castle, close to the shore, about $4\frac{1}{2}$ cables northward of the northern extremity of Ardavasar promontory, is a castellated building, standing on raised ground surrounded by woods. 20

Small quantities of provisions can be obtained at Ardavasar village, about $4\frac{1}{2}$ cables south-westward of the northern extremity of Ardavasar promontory. There is a post and telegraph office here.

There is a small bay on the south-eastern side of the Sound of Sleat, close south-eastward of Airor island (page 518), which affords shelter 25 to boats. There is a pier here.

Knock bay is entered about $1\frac{1}{2}$ miles north-north-eastward of Kilbeg point (page 516), on the north-western side of the sound. Knock bay has depths of from 10 to 12 fathoms ($18^m 3$ to $21^m 9$) within 2 cables of the shore, but the holding ground is bad, and the bay is 30 open to southerly and south-westerly winds. The head of the bay dries out about $1\frac{1}{4}$ cables, and the western side is foul for about $1\frac{1}{4}$ cables offshore; the depths increase suddenly from a few feet to about 10 fathoms ($18^m 3$).

Camas Croise, a small and shallow bay, is entered about three-quarters of a mile south-westward of the lighthouse on Eilean Sionnach (*Lat. $57^{\circ} 09' N.$, Long. $5^{\circ} 47' W.$*). On the northern side of the entrance the bottom is stiff clay, and small vessels sometimes anchor here, but it is not safe with south-westerly winds. The head of this bay dries out about 2 cables. 35
40

Isleornsay harbour, on the western side of Ornsay, is a place of refuge for vessels during south-westerly gales. It is practically sheltered from all winds, though north-easterly winds send in a little sea, and westerly winds are rather squally.

Large vessels should anchor about $3\frac{1}{2}$ cables offshore, with the 45 light-beacon off the north-eastern end of Ornsay bearing 155° , distant 4 cables, in a depth of about 8 fathoms ($14^m 6$). Small vessels can anchor closer in. There is a pier at the head of the harbour, near the houses, where vessels of about 8 feet ($2^m 4$) draught can lie alongside at high water. 50

There is a post and telegraph office in Isleornsay village, at the head of Isleornsay harbour. There is communication by sea with other ports of Skye, and with the mainland *via* Mallaig. Small quantities of provisions and water might be obtained here.

Chart 2496.

Loch na Dal is entered about three-quarters of a mile north-north-westward of the light-beacon off the north-eastern end of Ornsay; there are depths of from 7 to 8 fathoms (12^m8 to 14^m6) in its entrance, 5 shoaling quickly within. The head of the loch dries out about 4 cables.

Good holding ground of mud will be found off the entrance, in a depth of 13 fathoms (23^m8).

Submarine cable.—Beacon.—A submarine cable is landed at the head of Camas Daraich; the landing place is marked by a beacon. See 10 page 7.

Chart 2497.

Loch Hourn and approach.—Loch Hourn is approached between Sandaig islands (page 518) and Rubh' Ard Sbsneach, 3 miles south-south-westward, and is entered between Rubha an Daraich, a 15 point about $2\frac{1}{2}$ miles east-north-eastward of Rubh' Ard Slsneach, and the coast, 9 cables northward.

Loch Hourn passes through four narrows to its head; the upper part of the loch within the first narrows is named Loch Hourn Beag.

The Highland lochs include some of the rainiest places, near sea 20 level, in the British isles, and the rainfall of Loch Hourn is among the heaviest of these. The surrounding mountains attain great elevations within a short distance of the loch. It is a gloomy place when clouds hang low on the sides, as they often do.

The outer part of the loch, as far as the first narrows, which are 25 situated close eastward of Còrr eileanan, about 5 miles within the entrance is for the most part very deep, though the bottom is in places irregular, and large vessels can proceed without difficulty as far as these islands. Vessels of moderate size can pass through the narrows, but within the second narrows, which are situated about $1\frac{1}{2}$ miles eastward 30 of Còrr eileanan, the loch is hardly suitable for navigation except by small craft. The fourth narrows, less than one mile from the loch head, have a depth of 3 feet (0^m9), though above them is a basin with depths of from 5 to 10 fathoms (9^m1 to 18^m3).

Aspect.—The loch is almost entirely hemmed in by mountains 35 which rise precipitously. On the northern side, Beinn Sgritheall (Ben Sgriol) (*Lat.* $57^{\circ} 09' N.$, *Long.* $5^{\circ} 35' W.$), about 3 miles east-north-eastward of the entrance, rises very steeply to a prominent summit, 3,188 feet (971^m7) in height. On the southern side, the highest peak in the vicinity is Ladhar Bheinn, 3,335 feet ($1,016^m5$) high, about 40 miles 40 south-eastward of the entrance; near Ladhar Bheinn, there are numerous precipices.

Above the first narrows, Druim Fada rises steeply from the northern shore and its lower slopes are well wooded. There is also some afforestation on the southern slopes of Beinn Mhialairidh, close north-eastward of the entrance to the loch; elsewhere the country consists almost entirely of open moorland and there is little cultivation, except in the low ground such as that near Arnisdale river, northward of Druim Fada.

Dangers in approach to Loch Hourn.—**Beacon.**—A spit, with a depth of one fathom (1^m8) over it, extends about $1\frac{1}{2}$ cables offshore, on 50 the southern side of the loch about $3\frac{1}{2}$ cables east-north-eastward of Rubh' Ard Slsneach.

A bank, with depths of less than 3 fathoms (5^m5) over it, extends from half a cable to $1\frac{1}{2}$ cables from the coast between Rubha Mòr, situated 4 $\frac{1}{2}$ cables south-eastward of the largest Sandaig island, to

Chart 2497.

Glas eilean, $1\frac{1}{2}$ miles south-eastward. Sgeir Ulibhe, about $1\frac{1}{2}$ miles south-south-eastward of Rubha Mòr and $5\frac{1}{2}$ cables from the northern shore, dries 7 feet (2^m1) and is marked by a black iron beacon, 15 feet (4^m6) high, surmounted by a ball. A rock, nearly awash, lies one cable westward of the beacon and there are others close north-eastward of this rock. Between Sgeir Ulibhe and the northern shore, the bottom is irregular. A shoal, with a depth of 30 feet (9^m1) over it, lies about 5 cables north-westward of Sgeir Ulibhe beacon (*Lat. $57^{\circ} 08' N.$, Long. $5^{\circ} 41' W.$*) and $3\frac{1}{2}$ cables offshore. Clansman rock, $2\frac{1}{2}$ cables north-north-eastward of Sgeir Ulibhe beacon and about the same distance offshore, has a depth of 7 feet (2^m1) over it. A shoal, with a depth of 24 feet (7^m3) over it, lies about $3\frac{1}{2}$ cables north-eastward of Sgeir Ulibhe beacon and about $2\frac{1}{2}$ cables offshore.

Islands and dangers in Loch Hourn.—Eilean Ràrsaidh, about $1\frac{1}{2}$ miles eastward of Sgeir Ulibhe beacon and three-quarters of a cable from the northern shore, is 103 feet (31^m4) high; a spit, on which lie some rocks that dry and over the eastern extremity of which is a depth of 5 feet (1^m5), extends about one cable off its south-eastern side. Sgeir Mhic Leoid, about one cable eastward of the north-eastern extremity of Eilean Ràrsaidh, dries 5 feet (1^m5). Eilean a' Chuilinn, about 2 cables south-eastward of Eilean Ràrsaidh and the same distance offshore, is 54 feet (16^m5) high, and fringed by a reef. Sgeirean Ràrsaidh are a group of rocks on the coastal reef, about $1\frac{1}{2}$ cables eastward of Eilean a' Chuilinn; the coastal reef in this vicinity extends about $2\frac{1}{2}$ cables offshore. Eilean Mhairtein lies about $4\frac{1}{2}$ cables eastward of Eilean a' Chuilinn and half a cable offshore; it is about 25 feet (7^m6) high and has a few small trees on its summit.

Abreast Eilean Mhairtein a shoal spit extends about 2 cables offshore. Eilean Tioram, 80 feet (24^m4) high, one mile south-eastward of Eilean a' Chuilinn and three-quarters of a cable offshore, is connected with the shore by a reef which dries.

Eilean a' Phiobaire (*Lat. $57^{\circ} 07' N.$, Long. $5^{\circ} 35' W.$*), about $3\frac{1}{2}$ cables south-eastward of Rubha Ruadh, a point on the south-western side of the loch about 2 miles eastward of Rubha an Daraich, and $1\frac{1}{2}$ cables offshore, is 40 feet (12^m2) high and has foul ground and a shoal bank extending about one cable eastward and south-eastward from it.

Sgeir Leathan, about one mile south-south-eastward of Eilean Tioram and $2\frac{1}{2}$ cables from the north-eastern shore, is a rocky islet 9 feet (2^m7) high. A shoal bank extends about 2 cables south-south-westward from this islet. A shoal, with a depth of 20 feet (6^m1) over it, lies about 3 cables southward of Sgeir Leathan. Ellice shoal, about $1\frac{1}{2}$ miles south-south-eastward of Sgeir Leathan, has a depth of 5 feet (1^m5) over it. A shoal, with a depth of 21 feet (6^m4) over it, lies $1\frac{1}{2}$ cables northward; and a shoal, with a depth of 33 feet (10^m1) over it, lies about $3\frac{1}{2}$ cables west-south-westward of Ellice shoal.

Cùrr eileanan, in the western approach to the first narrows, consist of three islands, about one cable apart. The southern island is 48 feet (14^m6) high, and the main channel is on its southern side, where the island is steep-to. There is a deep channel between the northern and central islands, but Duncan shoal (page 526) obstructs the approach. Between the northern island and the shore and between the centre and southern islands the channels are obstructed by foul ground and navigable only by boats.

Chart 2497.

Duncan shoal, about $1\frac{1}{2}$ cables westward of the northern island of Còrr Eileanan, has a least depth of 3 feet (0^m9) over it.

Eilean a' Gharb-làin, 66 feet (20^m1) high, lying about 2 cables eastward of the northern island of Còrr Eileanan and occupying the northern side of the first narrows, is connected with the northern shore by a reef which dries.

A bank, which dries from one to 7 feet (0^m3 to 2^m1), extends from 2 to 4 cables offshore, and borders the south-eastern side of the channel leading to the first narrows. The southern part of this bank occupies Barrisdale bay and close within the north-eastern end of the bank lie Eilean Choinnich, 16 feet (4^m9) high, and Fraoch eilean (*Lat. $57^{\circ} 06' N.$, Long. $5^{\circ} 31' W.$*), 30 feet (9^m1) high.

Island and dangers in Loch Hourn Beag.—Corran a Caolas Mòr, about one mile eastward of Eilean a' Gharb-làin, is a low point extending from the northern shore with a wooded rocky knoll on its inner part; it is fringed by a gravel spit, which dries from 2 to 7 feet (0^m6 to 2^m1) and extends to about $1\frac{1}{4}$ cables offshore on its south-western side. The channel in this vicinity, which is called Caolas Mòr, 20 is barely half a cable wide.

On the southern side of the loch, about 2 cables east-south-eastward of Corran a Caolas Mòr, a shoal bank extends about half a cable offshore and on it are some rocks with depths of less than 6 feet (1^m8) over them.

25 Eilean Mhogh-sgeir, 44 feet (13^m4) high, situated about one mile eastward of Corran a Caolas Mòr, lies nearly in the middle of the third narrows. A shoal bank extends about half a cable south-westward from this island and the reefs fringing the northern and southern shores of the loch contract the channels on either side of it; 30 the southern channel should be preferred to the northern. Island rock, about one cable eastward of Eilean Mhogh-sgeir, dries 10 feet (3^m0).

The entrance to the head of Loch Hourn, above the fourth narrows, is very narrow, the channel being contracted by the reefs, which fringe both shores.

35 **Tidal streams.**—The in-going stream begins about + 0610 Stornoway (+ 0155 Dover), the out-going stream begins about H.W. Stornoway (- 0415 Dover); the streams are very weak in the outer loch but attain spring rates of about 3 knots in both directions in the narrows eastward of Còrr eileanan, where the in-going stream runs mostly on 40 the northern side with an out-going eddy on the southern side. The streams also run fairly strongly through the narrows in Loch Hourn Beag, but are weak elsewhere.

Anchorages in Loch Hourn.—In bad weather and especially with strong winds from between south and west, there is no good 45 anchorage in Loch Hourn, as violent squalls come down from the high land in unpredictable directions, causing a vessel at anchor to sheer wildly. In the western part of the loch, the best anchorage for large vessels is in a depth of about 16 fathoms (29^m3), about 3 cables south-south-westward of Eilean Mhairtein, where there is good holding 50 ground of soft mud.

Camas Bàn, eastward of Eilean Tioram, affords fair anchorage, in a depth of about 16 fathoms (29^m3), southward of Arnisdale village, which is situated on the northern shore of the bay, with Arnisdale house bearing 085° , but southerly winds send in some sea.

Chart 2497.

There is a private jetty close westward of the village. Corran village is situated at the mouth of Arnisdale river, about 8 cables south-eastward of Eilean Tioram (*Lat. 57° 08' N., Long. 5° 34' W.*).

In the reach of the loch above Eilean Tioram, anchorage is found 5 in mid-channel, in a depth of about 30 fathoms (54^m9), mud and sand, 5 cables eastward of Eilean a' Mhuineil; in many parts of this reach, the bottom is rocky and uneven.

Poll a' Mhuineil, the bay close south-westward of Eilean a' Mhuineil, 55 feet (16^m8) high, affords some shelter, in a depth of 15 fathoms 10 (27^m4), to small vessels.

Anchorages in Loch Hourn Beag.—There is good anchorage in moderate depths off Skiary, a village on the southern shore, about 9 cables eastward of Eilean Mhogh-sgeir; the squalls are said to be less violent here than in any other part of the loch. 15

The basin above the fourth narrows, at the head of the loch, affords anchorage, in depths of from 5 to 10 fathoms (9^m1 to 18^m3).

Directions for Loch Hourn.—A vessel approaching from southward should keep from 3 to 5 cables offshore, and steer to pass well northward of the spit extending 1½ cables from the southern shore, 20 about 3½ cables east-north-eastward of Rubh' Ard Slisneach, and also well southward of Sgeir Ulibhe. If approaching from northward she should give the western and southern sides of Sgeir Ulibhe a wide berth.

Creag an t-Sagairt, the headland 4 cables eastward of Rubha an Daraich, in line with Rubha Ruadh, bearing about 108° leads southward 25 of Sgeir Ulibhe shoals.

Sgeir Leathan, bearing about 340°, astern, and seen midway between Eilean Tioram and Crudh'Ard, a rocky point on the south-eastern side of Camas Bàn, leads westward of Ellice shoal; whence a vessel should steer to pass close southward of Còrr eileanan and Eilean a 30 Gharb-lain.

A vessel proceeding through the first narrows should do so near the time of high or low water, when the tidal streams will be weak.

The passage of the second narrows is a hazardous undertaking for other than small craft. 35

Chart 1594.

Anchorages and Inlets in the north-eastern part of the Sound of Sleat.—Sandaig bay, on the south-eastern side of Sandaig islands (page 518), has depths of from 3 to 7 fathoms (5^m5 to 12^m8), sand, but is open south-westward.

Glenelg bay on the eastern side of the sound, affords anchorage with Glenelg pier bearing 105°, distant 2 cables, in a depth of 15 fathoms (27^m4). Both the flood and ebb streams here set northward along the shore at a rate of from half a knot to 1½ knots.

Glenelg pier, on the southern side of the entrance to Glenmore river, 45 dries alongside, and is available for boats.

Glenelg church, about 1½ cables eastward of the pier, is partly obscured by trees. The hotel, a conspicuous stone building, stands half a cable east-north-eastward of the church. On the flat ground on the southern side of Glenmore river entrance are the tall ruins of 50 Bernera barracks. On the northern side of the river entrance, 3½ cables north-westward of Bernera barracks, is the conspicuous Free church manse, standing on slightly rising ground.

There is regular communication by sea with Mallaig, Portree, the

Chart 1594.

Small isles and Outer Hebrides. There is a post and telegraph office at Glenelg, which is connected with the general telephone system. Small quantities of provisions can be obtained here.

- 5 Anchorage can be obtained in Bâgh Dunan Ruadh, on the western side of the sound, southward of the entrance to Kylerhea river (page 516), with a sheepfold on the shore, $4\frac{1}{2}$ cables northward of Dunan Ruadh, bearing 305° , and the north-western extremity of Eilen Mòr (page 518), bearing about 206° and open south-eastward of 10 the coastal reef eastward of Dunan Ruadh (*Lat. $57^{\circ} 13' N.$, Long. $5^{\circ} 40' W.$*), in a depth of about 11 fathoms (20 m 1), mud, out of the influence of the tidal streams. A vessel can await the turn of the stream here. This anchorage is sheltered from south-westerly winds, but with north-westerly winds violent gusts blow down the valley; 15 the holding ground is good.

Charts 1594, 3292.

- Bernera bay (page 519) affords better anchorage on its northern side than that in Glenelg bay. A vessel should anchor with a ruined house, situated near the beach about $5\frac{1}{2}$ cables north-westward of the 20 Free church manse, bearing about 020° , in a depth of 10 fathoms (18 m 3), sand and shells. This anchorage is open south-westward, but it is out of the influence of the tidal stream. Both flood and ebb streams set northward along the shore, at a rate of from half a knot to one knot.

Charts 1594, 2496, 2507.

- Directions for the Sound of Sleat.**—The chart is a sufficient guide for vessels approaching from south-westward by day. At night between Eigg (page 478) and the mainland eastward a vessel should keep Ardnamurchan light (page 287) in sight, bearing not more than 30 217° , so as to pass north-westward of the dangers off and northward of Loch nan Ceall (page 473).

- Sandaig Islands light (page 517), bearing about 038° , leads through the fairway of the south-western part of the Sound of Sleat; the light on Eilean Sionnach (page 517), kept in sight and bearing not more than 030° , leads south-eastward of the dangers off the south-eastern side of the Isle of Skye, but as Knock bay (page 523) is approached vessels should keep in mid-channel, so as to pass south-eastward of Tartar rock (page 518).

- After passing south-eastward of the light on Eilean Sionnach a 40 vessel should steer with this light astern, bearing 228° , which leads north-eastward through the fairway of the north-eastern part of the sound into Glenelg bay. When she is from one to $1\frac{1}{2}$ miles from the head of Glenelg bay, Kyle Rhea light (page 530) will be seen.

- For directions for a vessel proceeding northward through Kyle Rhea 45 see page 531.

Chart 1594.

- KYLE RHEA.**—Kyle Rhea connects the northern end of the Sound of Sleat with Loch Alsh, 2 miles north-north-eastward. The land on both sides is high and steep with a smooth surface, except 50 where it is intersected by wooded burns. The eastern shore consists generally of low cliffs.

The ferry house (*Lat. $57^{\circ} 14' N.$, Long. $5^{\circ} 40' W.$*), on the western side of the southern entrance, is described on page 516. On the

Chart 1594.

eastern side of the southern entrance, about 4 cables north-westward of Cuil a Mheannain, the eastern entrance point of the strait, is another ferry house, also a conspicuous two-storied building.

Kyle Rhea has a least width of about one cable between the 5-fathom 5 (9 m 1) lines.

Although the tidal streams in the kyle are rapid, it is navigable by steam vessels of any size. Pilots may be obtained at the cottages at the southern entrance.

Charts 1594, 3292.

Tidal streams.—The streams in Kyle Rhea, the western part of Loch Alsh, and Kyle Akin, are shown, referred to high water at Dover, on 12 inset diagrams on the charts in the Tidal Stream Atlas, and, referred to high water at Stornoway, by similar diagrams on charts 1594 and 3292. 15

Chart 1594.

In Kyle Rhea the north-going stream, spring rate 6 to 7 knots, begins + 0555 Stornoway (+ 0140 Dover); the south-going stream, spring rate about 8 knots, begins - 0005 Stornoway (- 0420 Dover).

With the north-going stream, there is no appreciable increase in the 20 rate off the southern end of the kyle till the 20-fathom line off its entrance has been crossed; the rate then increases very quickly to Caolas an Lamhachaид (Lat. 57° 14' N., Long. 5° 39' W.). The north-going stream emerges into Loch Alsh as a narrow rapid stream, running in a north-north-easterly direction, with eddies on both sides 25 of it, but it loses strength quickly and, about half a mile outside the 20-fathom line, spreads westward and eastward and runs weakly towards Kyle Akin and the eastern part of Loch Alsh.

The south-going stream runs towards the northern end of the kyle both from westward and from eastward, and begins to increase rather 30 farther out than the north-going stream at the southern end. It emerges into the Sound of Sleat as a narrow rapid stream, running in a south-by-easterly direction, with north-going eddies on both sides of it, but it loses strength quickly and a mile or so from Caolas an Lamhachaид is no stronger than the Sound of Sleat stream. 35 There are heavy overfalls, dangerous to boats, from a half to three-quarters of a mile south-by-east from Caolas an Lamhachaид with strong southerly and south-westerly winds during the south-going stream.

Eddies form on both sides of the kyle. During the whole of the 40 north-going stream an eddy runs southward close along the western shore from about Kyle Rhea light-beacon to the point north-eastward of the western ferry house, and from a little southward of the same point to 2 or 3 cables south of the entrance to Kylerhea river; an eddy also runs southward along the eastern shore from 3 or 4 cables north 45 of Eilean Liath to about 4 cables southward of it, and, at its widest, extends about one cable westward from Eilean Liath. Eddies also run southward along both shores of the northern part of the kyle during about the first half of the north-going stream, but as the rocks along the shore cover the eddies cease and the stream runs strongly north- 50 ward over the rocks.

During the whole of the south-going stream an eddy runs northward along the western shore from the point north-eastward of the western ferry house about to Kyle Rhea light-beacon, and at its widest part,

Charts 2676, 2551, 2475, 2635.

Chart 1594.

a little southward of the beacon, extends about $1\frac{1}{2}$ cables offshore; an eddy also runs northward along the eastern shore from about $3\frac{1}{2}$ cables southward of Eilean Liath to about $2\frac{1}{2}$ cables northward of it, and at its widest part, about one cable southward of Eilean Liath, extends about one cable offshore.

In 1943, H.M.S. *Scott*, during a passage from north to south during the strength of the north-going stream at springs, reported that, in the northern entrance, when about 6·3 cables 105° from Sgeir na Caillach beacon on a course 223° , the ship was slewed violently to port through an arc of about 70° . In Caolas an Lamhachaidh (*Lat.* $57^{\circ} 14' N.$, *Long.* $5^{\circ} 39' W.$), about 2·3 cables 042° from the western ferry house, when steaming revolutions for nearly 12 knots no headway was made by the land; the stream appeared to pour through the narrows from off the points on both sides on lines meeting in an inverted "V" about 3 cables 020° from the western ferry house. From the point of the "V" a line, extending in a gentle curve towards Kyle Rhea light-beacon, indicated the limit of the south-going eddy along the western shore; westward of the middle and southern parts of the line the water appeared to boil up from below in large smooth eddies which appeared to be moving south-south-eastward at a rate of about 3 knots; the danger of getting the ship's stern into the eddy, with her bow in the full force of the north-going stream, was evident. Within the "V" the water was running smoothly, with its surface ruffled by a light south-easterly wind.

Strong and long-continued southerly and south-westerly winds increase both the duration and rate of the north-going stream, and correspondingly reduce the south-going stream; strong and long continued northerly winds have the opposite effect. The south-going stream is also increased, and the north-going stream reduced, when the snow is melting in spring, and during and after periods of heavy rain.

Chart 1594, 3292.

Light.—A light is exhibited, at an elevation of 22 feet ($6\text{m}7$), from a white concrete beacon, situated close off the western shore, about 7 cables northward of the western ferry house.

Chart 1594.

Islets and dangers.—On the western side of the southern approach to Kyle Rhea, northward of the entrance to Kylerhea river, foul ground and a shoal bank extend about $1\frac{1}{2}$ cables offshore. The shoals, with depths of 5 fathoms ($9\text{m}1$) and $4\frac{1}{2}$ fathoms ($8\text{m}7$) over them, situated in the fairway of the southern approach, are described on page 519.

The 5-fathom ($9\text{m}1$) line lies about three-quarters of a cable offshore, on the eastern side of the southern entrance to Kyle Rhea, the ground inside it being foul and rocky. Sgeir nan Laogh, situated on the shore reef, $3\frac{1}{2}$ cables north-westward of Cuil a Mheannain, dries 3 feet ($0\text{m}9$). The south-going stream sets directly over Sgeir nan Laogh and the adjacent rocks, which lie within three-quarters of a cable of the eastern ferry pier, which extends from the shore about one cable southward of the eastern ferry house.

Chart 1594, 3292.

The 5-fathom ($9\text{m}1$) line on the western side of the southern entrance, as far northward as Kyle Rhea light-beacon, lies about half a cable

Charts 1594, 3292.

offshore. About $1\frac{1}{2}$ cables northward of the western ferry house a pier projects from the shore, and a rock awash is situated about a quarter of a cable east-north-eastward of the pier head.

Northward of the eastern ferry pier the 5-fathom ($9^{\text{m}1}$) line lies 5 about three-quarters of a cable from the south-eastern shore of Kyle Rhea. Eilean Liath (*Lat.* $57^{\circ} 14' N.$, *Long.* $5^{\circ} 39' W.$), situated close offshore about $1\frac{1}{2}$ cables northward of the eastern ferry house, is 17 feet ($5^{\text{m}2}$) high.

Northward of Kyle Rhea light-beacon the 5-fathom ($9^{\text{m}1}$) line lies 10 from half a cable to $1\frac{1}{2}$ cables from the north-western shore of Kyle Rhea.

Research rock, about $5\frac{1}{2}$ cables north-eastward of Kyle Rhea light-beacon and $1\frac{1}{2}$ cables from the north-western shore, has a least depth of $3\frac{1}{2}$ fathoms ($6^{\text{m}4}$) over it, and is covered, with the exception of its 15 eastern edge, by the red sector of Kyle Rhea light between the bearings of 219° and 228° .

Rubha na Cailllich, the western entrance point of the northern entrance to Kyle Rhea, is a low grassy point with some cultivation on it. A reef extends about three-quarters of a cable northward from 20 Rubha na Cailllich, and half a cable north-eastward of the point is a rocky islet, 9 feet ($2^{\text{m}7}$) high.

Between Rubha na Cailllich and Rubha Buidhe, $5\frac{1}{2}$ cables north-westward, on the western side of the northern approach to Kyle Rhea, the 5-fathom ($9^{\text{m}1}$) line lies from $1\frac{1}{2}$ cables to $3\frac{1}{2}$ cables offshore. 25 Sgeir na Cailllich, about $1\frac{1}{2}$ cables northward of Rubha na Cailllich, dries 13 feet ($4^{\text{m}0}$). A rock, which dries 2 feet ($0^{\text{m}6}$), lies close south-westward, and a rock, with a depth of less than 6 feet ($1^{\text{m}8}$) over it, about half a cable westward of Sgeir na Cailllich. Cailllich knoll, about 2 cables northward of Sgeir ua Cailllich, is a sandy shoal with a 30 least depth of 2 fathoms ($3^{\text{m}7}$) over it. Caillich knoll is covered by the red sector of Kyle Akin light, which light is situated $2\frac{1}{4}$ miles west-north-westward of Rubha Buidhe, between the bearings of 282° and 096° .

Charts 1594, 2496.

35

Directions (continued from page 528).—A vessel approaching from southward should steer with the lighthouse on Eilean Sionnach (page 518) bearing 228° astern, until Kyle Rhea light-beacon bears 343° , which leads through the southern entrance to Kyle Rhea. When the ferry house on the eastern shore bears 070° , she should steer in mid-channel, taking care to avoid Research rock. When Kyle Rhea light-structure bears 222° she should keep it astern on that bearing, which leads in mid-channel out of the northern entrance of Kyle Rhea.

A vessel approaching from northward should reverse the directions given above. 45

It is not advisable to proceed through Kyle Rhea at night without local knowledge, but if it is necessary to do so the following directions should be followed.

A vessel approaching from southward should keep in the red sector 50 of Kyle Rhea light, between the bearings of 338° and 345° , until well within the entrance, and northward of the dangers off-lying the eastern side of the entrance (page 530). It should be remembered that the 5-fathom and $4\frac{1}{2}$ -fathom ($9^{\text{m}1}$ and $8^{\text{m}7}$) shoals, lying in the

Charts 2551, 2475, 2635.

Charts 1594, 2496.

southern approach to Kyle Rhea, described on page 519, are covered by this *red* sector.

When abreast the eastern ferry house the vessel should steer north-⁵ ward and north-north-eastward in the *green* sector of Kyle Rhea light. Care should be taken not to enter the *red* sector of this light, between the bearings of 219° and 228° , which covers Research rock, until northward of that rock. When the vessel is northward of Research rock she should steer in mid-channel through the north-eastern part of the strait.

10 Charts 3292, 2676.

LOCH ALSH.—Loch Alsh separates the northern side of the eastern extremity (*Lat. $57^{\circ} 15' N.$, Long. $5^{\circ} 39' W.$*) of the Isle of Skye from the mainland. It is entered from southward, near its centre, through Kyle Rhea. Kyle Akin, which is the western entrance ¹⁵ channel to Loch Alsh, connects this loch with the Inner sound (page 542). Lochs Duich and Long branch off at the eastern end of Loch Alsh.

Chart 2676.

Communications.—Port facilities.—There is a telegraph office at ²⁰ Letterfearn, a village on the south-western side of Loch Duich, about one mile within its entrance. Dornie, a village on the eastern side of Loch Long, about 2 cables within its entrance, is connected with the general telephone system. Small quantities of provisions can be obtained at Letterfearn.

25 Chart 3292.

Aspect.—The southern shore of Loch Alsh from Garhan Còsach (Coill a Ghurrabain), the south-eastern entrance point of the northern entrance to Kyle Rhea, to Ardintoul point, $1\frac{1}{2}$ miles east-north-eastward, is a gravel beach, from which Glas Bheinn rises, with steep ³⁰ but smooth sides, to an elevation of 1,288 feet (392^m6), $8\frac{1}{2}$ cables east-south-eastward of Garbhán Còsach. Ardintoul point is low, flat, and cultivated, with a farmhouse on its eastern side, about $1\frac{1}{2}$ cables south-south-eastward of the point.

Ru Ard a Mhill, on the northern shore of Loch Alsh, about $1\frac{1}{2}$ miles ³⁵ north-westward of Ardintoul point, is steep and grassy, rising to Ard hill, 265 (80^m8) high, $2\frac{1}{2}$ cables inland. Kirkton church is situated $5\frac{1}{2}$ cables north-eastward of Ard hill. The southern end of Avernish promontory, $8\frac{1}{2}$ cables east-south-eastward of Ard hill, has two points, the western of which is Ru Sgarrahaig.

40 Chart 2676.

Rubha Aird a Mhadaidh, $8\frac{1}{2}$ cables eastward of Ardintoul point, on the southern shore, rises about $2\frac{1}{2}$ cables, inland to an elevation of 592 feet (180^m4). The coast, between Rubha Aird a Mhadaidh and Totaig, $1\frac{1}{2}$ miles east-north-eastward, the north-western entrance point ⁴⁵ of Loch Duich, is steep, rugged, and covered in places with trees.

Between Ru Sgarrahaig and Ardelve point, the western entrance point of Loch Long, $2\frac{1}{2}$ miles eastward, the coast is moderately bold, with many small bays and shallow inlets. Ardelve point (*Lat. $57^{\circ} 17' N.$, Long. $5^{\circ} 31' W.$*) is low, and on the rising ground above it, ⁵⁰ about 2 cables northward, is Airdferry hotel, a stone building.

Charts 3292, 2676.

Sgùrr Mòr, 1,118 feet (340^m8) high, about 8 cables northward of Ard hill, is partly encircled half-way up by a belt of trees, and large

Charts 3292, 2676.

red earthmarks show amongst the dark heather. Balmacara hotel, $7\frac{1}{2}$ cables south-south-westward of Sgùrr Mòr, is a stone building, standing near the shore at the foot of this mountain; the post and telegraph office is close westward of the hotel.

5

Balmacara house, a large three-storied house, with long frontage to the loch, stands on the western side of the head of Balmacara bay, about 7 cables west-north-westward of the post and telegraph office. There are several cottages westward of Balmacara house, and a pier, which can be used by boats, extends from the shore $2\frac{1}{2}$ cables south-westward of the house; about three-quarters of a cable west-south-westward of this pier is a stone house. The shores of Balmacara bay are wooded.

Donald Murchison's monument (*see* sketch on chart 3292), 8 cables west-south-westward of Balmacara house, stands on Doire na h-Earba, 15 a slightly projecting headland. The monument is a white granite obelisk, 28 feet (8 m 5) in height, standing at an elevation of 50 feet (15 m 2).

Islets and dangers in eastern part of Loch Alsh.—Buoy.—A reef fringes the southern shore of the eastern part of Loch Alsh, 20 between Garbhan Còsach and Ardintoul point, extending in places $1\frac{1}{2}$ cables offshore; the depths then increase rapidly, rendering this part of the coast unsuitable for anchorage.

Charts 3292, 2676.

Between Ardintoul point and Rubha Aird a Mhadaidh a reef fringes the coast, extending in places one cable offshore. A rocky shoal, lying half a cable north-north-westward of Rubha Aird a Mhadaidh, has a least depth of 3 feet (0 m 9) over it; the channel westward of this shoal is about one cable wide.

Glas eilean (*Lat.* $57^{\circ} 16' N.$, *Long.* $5^{\circ} 35' IV.$), the southern extremity of which is situated about $2\frac{1}{2}$ cables north-westward of Rubha Aird a Mhadaidh, is green, flat, and 12 feet (3 m 7) high. Reefs extend about one cable northward, eastward, and westward, and about 3 cables southward; a bank, with depths of less than 3 fathoms (5 m 5) over it, extends about $1\frac{1}{2}$ cables westward of Glas eilean. There is a navigable channel both northward and southward of Glas eilean, the northern being straighter, wider, and easier to navigate than the southern.

Racoon rock, about 2 cables west-north-westward of the north-western extremity of Glas eilean, has a least depth of 6 feet (1 m 8) over it, and is marked on its north-western side by a black conical buoy.

40

Ais sgeir (page 534), in line with Airdferry hotel, bearing 074° , leads through the fairway northward of Racoon rock (*see* view on chart 2676).

Chart 3292.

From the point $1\frac{1}{2}$ cables eastward of Ru Sgarabhaig, foul ground 45 extends about three-quarters of a cable south-eastward and dries 13 feet (4 m 0); this point is rather deceptive at high water, the rocks being covered.

Chart 2676.

About 8 cables east-north-eastward of Ru Sgarabhaig is the western entrance point of Nostic bay; a bank, with depths of less than 5 fathoms (9 m 1) over it, extends about $2\frac{1}{2}$ cables offshore, off the entrance to this bay.

Làrach Tigh Mhic Dhomhnuill, about $3\frac{1}{2}$ cables east-south-eastward

Chart 2676.

of the north-eastern extremity of Glas eilean, dries 5 feet (1^m5). Nostie bank, about $6\frac{1}{2}$ cables eastward of the north-eastern extremity of Glas eilean, has a least depth of 3 fathoms (5^m5) over it.

- 5 The northern extremity of Eilean Aoinidh, a promontory on the southern side of the loch, about $1\frac{1}{2}$ miles east-north-eastward of Rubha Aird a Mhadaidh, in line with the first point southward of the hill, 178 feet (54^m3) high, $6\frac{1}{2}$ cables eastward of Eilean Aoinidh, bearing 089° , leads close northward of Nostie bank.
 10 Ais sgeir, about 9 cables east-north-eastward of Glas eilean and half a cable from the northern shore, is a bare black rock, 4 feet (1^m2) high.

From the northern shore, about $3\frac{1}{2}$ cables north-eastward of Ais sgeir (*Lat. $56^\circ 17' N.$, Long. $5^\circ 33' W.$*), foul ground and a shoal bank 15 extend about $3\frac{1}{2}$ cables offshore.

Eilean Tioram, about 2 cables south-westward of Ardelve point, with which it is connected by a gravel spit, which dries, is surrounded by a reef which dries and extends about half a cable southward, and $1\frac{1}{2}$ cables westward, from this islet.

- 20 Submarine cable.—A telegraph cable, indicated on chart 2676, crosses the loch close westward of Eilean Aoinidh; *see page 7.*

Chart 3292.

Dangers in western part of Loch Alsh.—**Beacon.**—The dangers off-lying the southern shore of Loch Alsh, between Rubha na Caillich 25 and Rubha Buidhe, are described on page 530.

A shoal, with a depth of $2\frac{1}{2}$ fathoms (5^m0) over it, is situated on the northern side of Loch Alsh, about $3\frac{1}{2}$ cables west-north-westward of Ru Aird a Mhill. About $4\frac{1}{2}$ cables north-north-westward of Ru Aird a Mhill the coastal reef extends about $1\frac{1}{2}$ cables offshore and a hank, with 30 depths of less than 5 fathoms (9^m1) over it, extends about half a cable farther. Sgeir nan Eun, situated on the coastal reef about $8\frac{1}{2}$ cables north-westward of Ru Aird a Mhill, is 3 feet (0^m9) high.

The head of Balmacara bay dries out about $1\frac{1}{2}$ cables.

A bank, with depths of less than 10 fathoms (18^m3) over it, extends 35 about 4 cables southward from Doire na h-Earba (page 533). Bo Doire na h-Earba, lying on the shore bank, about $2\frac{1}{2}$ cables southward of Doire na h-Earba, has a least depth of $4\frac{1}{2}$ fathoms (8^m2) over it. The southern edge of this bank is steep. Kyle Akin light (page 537) is obscured over Bo Doire na h-Earba.

40 Between Doire na h-Earba and the eastern entrance point of Scalpaiddh bay, 4 cables westward, a bank, with depths of less than 5 fathoms (9^m1) over it, extends from half to three-quarters of a cable offshore, the bottom being chiefly sand with sea grass. Sgeir Oighrig, about $5\frac{1}{2}$ cables westward of Doire na h-Earba, is situated 45 near the southern edge of a reef, which extends $1\frac{1}{2}$ cables southward from the head of Scalpaiddh bay. Sgeir Oighrig dries about 4 feet (1^m2). Balmacara hotel, bearing 084° and just open southward of Doire na h-Earba, leads close southward of this reef (*see view B on chart 3292.*).

50 The southern shore of Loch Alsh, between Rubha Buidhe and the head of Loch na Beiste, $2\frac{1}{2}$ miles westward, is fringed by a reef, which extends in places half a cable offshore. Close westward of Rubha Buidhe (*Lat. $57^\circ 16' N.$, Long. $5^\circ 40' W.$*) a bank, with depths of less than 5 fathoms (9^m1) over it, extends about $1\frac{1}{2}$ cables offshore.

Chart 3292.

Bo Sron an Tairbh, about $1\frac{1}{2}$ cables northward of Sron an Tairbh, a point on the southern shore about $7\frac{1}{2}$ cables westward of Rubha Buidhe, is a rocky shoal, with a least depth of 4 fathoms (7^m3) over it.

A beacon, surmounted by a triangle point up, marks the northern end of a sunken wreck about 2 cables north-westward of Sron an Tairbh.

Charts 3292, 2676.

Tidal streams.—See also page 529.

Western part of Loch Alsh.—The streams in the western part of the loch depend entirely on the relation between the streams in Kyle Rhea and Kyle Akin, and the streams of the eastern part of the loch either join, or separate from, the streams in the western part. As a result the streams in the western part of Loch Alsh are usually weak and never exceed a rate of about one knot. 15

The streams between Kyle Rhea and Kyle Akin run mostly off the southern shore of the loch; off the northern shore the streams are weak and variable.

Strong southerly and south-westerly winds increase both the duration and the rate of the west-going stream in the loch, and correspondingly reduce the east-going stream; strong northerly winds have the opposite effect. The west-going stream is also increased, and the east-going stream reduced, when the snow is melting in spring and during and after periods of heavy rain. 20

Eastern part of Loch Alsh, Loch Long and Loch Duich.—The in-going and out-going streams of the eastern part of Loch Alsh run very nearly with the north-going and south-going streams in Kyle Rhea. The in-going stream begins about + 0610 Stornoway (+ 0155 Dover), the out-going stream begins about - 0010 Stornoway (- 0425 Dover); the streams are weak and nowhere exceed a rate of from 0.5 to 0.8 knot 30 at springs. In Loch Alsh the in-going stream divides and runs on both sides of Glas eilean, and then again divides and runs northward to Loch Long and south-eastward to Loch Duich. In the narrow, shallow entrance to Loch Long the streams are appreciable, but they are imperceptible in the loch; in Loch Duich the in-going stream is 35 appreciable for about one mile along the north-eastern shore, but elsewhere in the loch the streams are imperceptible. The out-going streams from Loch Long and Loch Duich meet and run out on both sides of Glas eilean (*Lat. 57° 16' N., Long. 5° 35' W.*).

The durations and rates of the out-going streams are increased, and 40 the in-going streams correspondingly reduced, when the snow is melting in spring and during and after heavy rain. The effects of wind on the streams are probably negligible.

Chart 3292.

Anchorages and lochs in eastern part of Loch Alsh.—Aird a Mhill bay is entered between Ru Aird a Mhill and Ru Sgarabhaig; it is exposed to south-westerly winds, and it is too deep for anchorage. 45

Chart 2676.

Loch Duich, which extends south-eastward from the eastern end of Loch Alsh, is entered between Eilean Tioram (page 534) and Totaig, 50 about 3 cables southward. Its shores are generally steep and partially wooded; around the head are several sharp peaked precipitous mountains from 2,000 to 3,000 feet (609^m6 to 914^m4) high. It is seldom used by shipping.

Chart 2676.

Loch Duich is deep. Its shores are generally bold, except at the head, which is indented by several bays where flats dry out about $4\frac{1}{2}$ cables; outside the flats anchorage can be obtained in depths of from 6 to 12 fathoms (11^m0 to 21^m9), whence the depths increase rapidly to 20 to 30 fathoms (36^m6 to 54^m9).

Eilean Donnan, close off the eastern shore, with which it is connected by a reef which dries, stands at the confluence of Lochs Duich and Long, about 2 cables eastward of Eilean Tioram. On it stands a ruined castle, which is covered with ivy.

Aile Mòr bank, on the south-western side of Loch Duich, about one cable east-north-eastward of Totaig, has a least depth of one fathom (1^m8) over it.

Loch Long is entered between Eilean Tioram and Eilean Donnan, 15 2 cables eastward. The entrance channel is very narrow, with a least depth of $1\frac{1}{2}$ fathoms (2^m3) in the fairway. About $1\frac{1}{2}$ miles within the entrance the loch becomes tortuous, and in places very shallow, and so continues to within about $1\frac{1}{2}$ miles of its head, where there is a small deep basin. The head of the loch dries out about one mile.

20 Dornie village (page 532) has a considerable population, and a number of stone houses. The roof and belfry of the Roman Catholic chapel, which stands at the northern end of this village, show over Ardelve point. Vessels anchor immediately off the village, where the stream is strong. A bridge crosses the entrance to Loch Long at 25 Dornie.

Submarine cable.—Beacons.—A submarine cable, indicated on the chart, crosses the channel about $1\frac{1}{2}$ cables northward of the bridge; each cable landing place is marked by a telegraph beacon.

See page 7.

30 Chart 3292.

Anchorages in western part of Loch Alsh.—There is good anchorage on the southern side of Loch Alsh, south-westward, westward, and north-westward of Cailllich knoll (page 531), which is especially useful in southerly and south-westerly gales; the bottom is sand and mud, and there is little tidal stream.

A small vessel should anchor with Sgeir na Cailllich bearing between 140° and 150° , distant from one to 3 cables, in depths of from 2 to 3 fathoms (3^m7 to 5^m5). A large vessel should anchor with Sgeir na Cailllich bearing 150° , distant about $4\frac{1}{2}$ cables, in depths of from 40 7 to 8 fathoms (12^m8 to 14^m6). Kyle Akin light (page 537), bearing not less than 282° , shows red over this anchorage.

Anchorage can be obtained on the northern side of Loch Alsh in Balmacara bay, with a wooden hut at the inner end of the pier bearing 300° , in depths of from 10 to 12 fathoms (18^m3 to 21^m9); the bottom is mud, but it deepens suddenly, and a vessel might be driven off the bank in heavy northerly squalls. With southerly and south-westerly winds there is a short sea which at times prevents communication with the shore.

Loch na Beiste, on the southern side of Loch Alsh, is well sheltered, 50 and affords anchorage $3\frac{1}{2}$ cables from its head, in a depth of 13 fathoms (23^m8), sand and shells; the head of this inlet dries out about $1\frac{1}{2}$ cables.

Kyle Akin.—Kyle Akin, the eastern entrance to which lies between the western entrance point of Scalpaigh bay and Rubha Ard Tresnish (Lat. $57^\circ 16' N.$, Long. $5^\circ 43' W.$), $7\frac{1}{2}$ cables south-westward, lies

Chart 3292.

between the northern side of the eastern part of the Isle of Skye and the mainland. It is the narrow channel, through which passes the inner traffic of the western coast of Scotland. Kyle Akin has a least width of about three-quarters of a cable, and a least depth of 5 fathoms ⁵ (9^m1) in the fairway.

Aspect.—Rubha Ard Tresnish is the north-eastern extremity of a narrow peninsula, 44 feet (13^m4) high, jutting out about 2 cables north-north-eastward. About 2 $\frac{1}{2}$ cables westward of Rubha Ard Tresnish are the ruins of Caisteal Maol, a square keep or tower, 94 feet ¹⁰ (28^m7) high.

The Plock of Kyle, the eastern end of which is situated about 6 cables westward of the western entrance point of Scalpaigh bay, is a peninsula forming part of the northern side of Kyle Akin. Kyle of Lochalsh pier projects from the eastern end of the Plock of Kyle. The Station ¹⁵ hotel, one cable westward of this pier and close to the shore, is three-storied; about a quarter of a cable eastward of the hotel is the ferry pier.

About 2 cables west-north-westward of Caisteal Maol is the eastern extremity of the flat peninsula, on which is situated Kyleakin village. ²⁰ The eastern end of this peninsula is a rocky knoll, 45 feet (13^m7) high, and around it are several small cottages. A stone pier extends three-quarters of a cable eastward from the eastern extremity of the peninsula. Kyleakin village, 2 cables west-south-westward of the eastern extremity of the peninsula, consists of some houses standing a short ²⁵ distance from the beach, and two churches; close to the beach is the King's Arms hotel, a long whitewashed building. About 3 cables west-north-westward of the King's Arms hotel is a mound, faced on its northern side by a precipitous cliff, 102 feet (31^m1) high; it is covered with trees, the tops of which are about 133 feet (40^m5) high. ³⁰ Kyle house, a two-storied dwelling, painted white, with stables close southward of it, which have the appearance of a small chapel, stands within the mound. In summer these buildings are completely obscured by tree foliage, except from eastward; during winter they may show through the trees. ³⁵

Between the mound just described and Sgeir na Iasgaich, about $1\frac{1}{2}$ miles west-south-westward, the southern shore of the western approach to Kyle Akin is backed by hills about 100 feet (30^m5) high, Sgeir na Iasgaich (*Lat. 57° 16' N., Long. 5° 47' W.*) is a rocky peninsula, 21 feet (6^m4) high, connected with the mainland by a low neck of ⁴⁰ shingle.

Lights.—Beacons.—A light is occasionally exhibited, at an elevation of 19 feet (5^m8), from brown posts, 10 feet (3^m0) in height, on the eastern and western corners of the head of Kyle of Lochalsh pier (page 542). ⁴⁵

Lights are exhibited from the head of the ferry pier, situated about one cable westward.

Two lights, vertically disposed, are occasionally exhibited, at elevations of 13 feet and 17 feet (4^m0 and 5^m2), from a steel pole, 13 feet (4^m0) in height, on the eastern end of the Fishery pier. ⁵⁰

A light is exhibited, at an elevation of 15 feet (4^m6) from a steel pole, 11 feet (3^m3) in height, on the western end of the Fishery pier, which is situated about half a cable eastward of Kyle of Lochalsh pier.

Kyle Akin light is exhibited, at an elevation of 53 feet (16^m2), from

Chart 3292.

a white tower, 70 feet (21^m3) in height, situated on the rocks which dry and are situated a quarter of a cable south-westward of the south-western end of Eilean Bàn, about $9\frac{1}{2}$ cables westward of the western side of Kyle of Lochalsh pier; this lighthouse is connected with Eilean Bàn by a bridge. *See* view facing page 514.

A light is exhibited, at an elevation of 5 feet (1^m5), from a beacon, 24 feet (7^m3) in height, at the head of the stone pier about $3\frac{1}{2}$ cables eastward of the King's Arms hotel.

- 10 A red beacon, 4 feet (1^m2) in height, fitted with a *white* reflector, stands on the north-eastern islet of Eileanan Dubha, *see* below.

Islets and dangers in Kyle Akin.—Buoys.—Perch.—Between the western entrance point of Scalpaigh bay and Kyle of Lochalsh pier there are no dangers beyond half a cable offshore, except about $1\frac{1}{2}$ cables 15 eastward of this pier, where foul ground extends about three-quarters of a cable offshore, and a shoal bank about half a cable farther south-south-eastward; at the southern edge of this foul ground is a rock, with a depth of 5 feet (1^m5) over it, marked by an iron perch.

Balmacara hotel, bearing 084° and just open southward of Doire na 20 h-Earba, leads southward of these dangers (*see* view B on chart 3292).

Eileanan Dubha, about $3\frac{1}{2}$ cables north-north-eastward of Rubha Ard Tresnish, are a group of islets and rocks; the two largest islets are covered with heather, and are 48 and 25 feet (14^m6 and 7^m6) high, respectively. Foul ground and shoal banks extend about half a cable 25 northward and the same distance southward, respectively, from the northernmost and southernmost islet at the eastern end of this group. Kyle Akin light is obscured over these dangers.

The channel on the northern side of Eileanan Dubha has a navigable width of about 140 yards (128^m0), with depths of from 5 to 10 fathoms 30 (9^m1 to 18^m3) in the fairway.

From the promontory on which is Caisteal Maol (*Lat. $57^\circ 16' N.$, Long. $5^\circ 43' W.$*) foul ground and a bank with depths of less than 3 fathoms (5^m5) over it, extend about $1\frac{1}{2}$ cables northward and $1\frac{3}{4}$ cables east-north-eastward. String rock, near the north-eastern end of this 35 foul area, is awash, and is marked on its northern side by a red can buoy. Sgeir a Chaisteil, about half a cable northward of this promontory, has two rocky heads, which dry 7 feet (2^m1), with a boat channel between them. Two rocks, with depths of less than 6 feet (1^m8) over them, lie about three-quarters of a cable northward and 40 $1\frac{1}{4}$ cables north-westward of the same promontory, and a shoal bank extends about half a cable northward from these rocks. The *red* sector of Kyle Akin light, between the bearings of 282° and 096° , covers the greater part of these dangers, but the northern edge of the shoal bank northward of Caisteal Maol promontory, also the red can buoy marking 45 String rock, lie in the *white* sector of this light, between the bearings of 278° and 282° .

Foul ground and a bank, with depths of less than 5 fathoms (9^m1) over it, extend about three-quarters of a cable southward from the southern side of Plock of Kyle. Foul ground and a bank, with depths 50 of less than 5 fathoms (9^m1) over it, extend about half a cable northward from the eastern end of the peninsula on which stands Kyleakin village. Kyle house, bearing 262° and open northward of the boathouse, $1\frac{1}{4}$ cables west-north-westward of the King's Arms hotel, leads northward of this shoal bank, also northward of the shoal bank extending

Chart 3292.

northward of Caisteal Maol promontory. Foul ground extends about half a cable northward from the promontory on which is the 102-foot (31^m1) cliff northward of Kyle house.

Eilean Bàn (page 538) is in two parts, which are connected by a reef that dries. The larger and western part is 56 feet (17^m1) high at its south-western end, where are the dwellings of the lighthouse keepers. From the base of the lighthouse, rocks, which dry, extend 40 yards (36^m6) south-westward.

Charts 3292, 3421, 2551.

10

Dangers in western approach to Kyle Akin.—Buoyage.—Eilean nan Gillean, the southern extremity of which is situated about 3 cables northward of the northern extremity of Eilean Bàn, is surrounded by reefs and shoals, which extend about 3 $\frac{1}{2}$ cables south-westward from its south-western end. Fork rocks, lying about midway between the western part of Eilean Bàn and the southern end of Eilean nan Gillean, are a group of above-water and sunken rocks. Carrach rock, about 2 $\frac{1}{2}$ cables westward of the southern end of Eilean nan Gillean, is the westernmost above-water rock in this locality, and is 7 feet (2^m1) high; a rocky patch, with a least depth of 6 feet (1^m8) over it, lies about 1 $\frac{1}{2}$ cables west-north-westward of Carrach rock. There are many shoals in this locality, within about 2 $\frac{1}{2}$ cables south-westward, westward, and north-westward of Carrach rock. All these dangers are covered by a red sector of Kyle Akin light, between the bearings of 132° and 176°.

25

Chart 3292.

Blind sound, the channel between Eilean Bàn and Eilean nan Gillean (*Lat.* 57° 17' *N.*, *Long.* 5° 44' *W.*), has been mistaken at high water for the entrance into Kyle Akin, but it is foul.

Charts 3292, 3421.

36

Black Eye rock, about 4 cables westward of Kyle Akin lighthouse, has a least depth of 2 $\frac{1}{2}$ fathoms (5^m0) over it, and is marked on its north-eastern side by a can light-buoy, painted red, and exhibiting a white group flashing light, showing two flashes every ten seconds; this rock is covered by a red sector of Kyle Akin light, between the bearings of 282° and 096°.

Between the promontory, on which is the mound 102 feet (31^m1) high, and Sgeir na Iasgaich (page 537), the southern shore of the western approach to Kyle Akin is foul, with a bank, with depths of less than 5 fathoms (9^m1) over it, extending in places 5 $\frac{1}{2}$ cables offshore. On this bank are several shoals, with depths of from 1 $\frac{1}{2}$ to 2 $\frac{1}{2}$ fathoms (3^m2 to 5^m0) over them. Bogha Beag, 6 $\frac{1}{2}$ cables westward of Kyle Akin lighthouse, and 2 $\frac{1}{2}$ cables offshore, dries 4 feet (1^m2); a red can buoy is moored north-westward of a shoal, with a depth of 2 $\frac{1}{2}$ fathoms (4^m1) over it, lying 1 $\frac{1}{2}$ cables northward of Bogha Beag.

45

Caisteal Maol, bearing 101° and twice its own breadth open northward of the promontory on which is the mound 102 feet (31^m1) high, leads between Bogha Beag and a shoal, with a depth of 1 $\frac{1}{2}$ fathoms (3^m2) over it, three-quarters of a cable north-north-eastward, but close southward of a shoal, with a depth of 2 $\frac{1}{2}$ fathoms (4^m1) over it, about 9 cables westward of Kyle Akin lighthouse. This mark (*see* view A on chart 3292) is only of use for a small vessel with local knowledge; a vessel of deep draught should pass northward of this bank.

Bogha an t-Sasunnaich, about 1 $\frac{1}{2}$ miles west-south-westward of

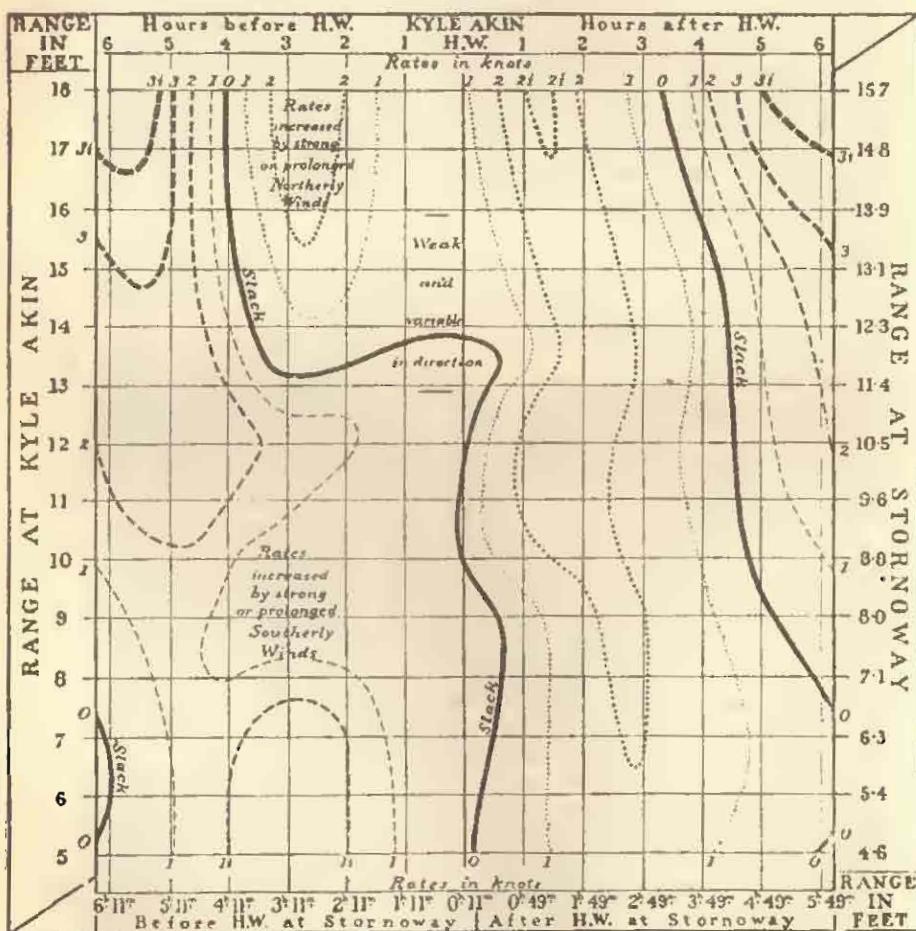
Charts 3292, 3421.

Kyle Akin lighthouse, consists of several detached rocks, which dry from 2 to 8 feet ($0^m 6$ to $2^m 4$); the northernmost of these rocks, lying about $2\frac{1}{2}$ cables offshore, dries 3 feet ($0^m 9$). The red sector of Kyle Akin light covers Bogha Beag and Bogha an t-Sasunnaich (Lat. $57^{\circ} 16' N.$, Long. $5^{\circ} 47' W.$).

Charts 3292, 2551.

Caisteal Maol, bearing 101° and twice its own breadth open northward of the promontory on which is the mound 102 feet ($31^m 1$) high (see view A on chart 3292), leads about 3 cables northward of Bogha an t-Sasunnaich. The eastern extremity of the Crowlin islands (page 547), in line with the western extremity of a promontory $8\frac{1}{2}$ miles farther northward, bearing about 348° , leads westward of this reef.

Tidal Streams
KYLE AKIN



Flecked lines refer to west-going streams
Dotted lines refer to east-going streams.

Charts 2676, 2551, 2475, 2635.

Charts 3292, 3421.

Foul ground extends about one cable northward and westward from Sgeir na Iasgaich.

Chart 3292.

Submarine cables.—Beacons.—Submarine cables, the directions of which are indicated on the chart, are laid across the eastern end of Kyle Akin (*Lat. 57° 16' N., Long. 5° 43' W.*). The landing places are marked by beacons, *see page 7.*

Tidal streams.—*See also page 535, and Tidal diagrams on chart 3292.*

The streams are very variable and, referred to high water, the times at which the east-going and west-going streams begin vary with the range of the tide; they cannot, therefore, be predicted in the usual manner by constant references to high water, but may be predicted by means of the diagram on page 540.

In the diagram reference is made to the range of the tide at Kyle Akin and Stornoway. The best results will be obtained from the Kyle Akin range, and this should be used if it is known or can be obtained. If the Kyle Akin range is not known the diagram should be entered with the range at Stornoway from the high (or low) water preceding to the low (or high) water following the time for which the prediction is required, as obtained from the Admiralty Tide Tables, Part I.

Strong and long-continued northerly winds increase both the duration and rate of the east-going stream, and correspondingly reduce the west-going stream; strong and long-continued southerly and south-westerly winds have the opposite effect. The west-going stream is also increased, and the east-going stream reduced, when the snow is melting in spring and during and after periods of heavy rain.

The currents caused by winds, melting snow and rain do not vary with the rate of the stream, and their effects are most noticeable when the stream is weak. During the periods of weak and variable streams, the stream may run westward with southerly winds, melting snow, or rain, and may run eastward with northerly winds.

Anchorages.—There are good berths over gravel bottom for small vessels alongside the pier which extends eastward from the eastern end of the peninsula on which is Kyleakin village, but it dries alongside this pier.

Anchorage may be obtained anywhere off the village of Kyleakin (*Lat. 57° 16' N., Long. 5° 44' W.*) about one cable offshore, in depths of from 6 to 7 fathoms (11^m0 to 12^m8), sand, but small vessels may go closer in so as to be more out of the influence of the tidal stream where the bottom is blue clay. Farther out the bottom is hard, but should a vessel drag she will bring up in good holding ground on either shore.

Charts 3292, 2639, 2551.

Directions.—A vessel approaching Kyle Akin from eastward should steer to pass either in mid-channel between String rock and Eileanan Dubha, or northward of Eileanan Dubha, with Balmacara hotel bearing 084° and just open southward of Doire na h-Earba, which leads through the northern fairway clear of all dangers (*see view B on chart 3292*). After passing northward or southward of Eileanan Dubha she should steer about 270° in mid-channel between the promontory on which is the mound 102 feet (31^m1) high, and Eilean

Charts 3292, 2639, 2551.

Bàn. When Kyle Akin lighthouse bears 059° , distant about $1\frac{1}{2}$ cables, she should steer to bring Kyle house, or if it is obscured by tree foliage, the centre of the mound 3 cables west-north-westward of the Kings Arms hotel to bear 140° , astern, and keep it so, which leads north-eastward of Black Eye rock and the light-buoy marking it and into deep water; this course also leads south-westward of the $4\frac{1}{2}$ -fathom (8^m7) patch on the north-eastern side about $2\frac{1}{2}$ cables west-north-westward of Kyle Akin lighthouse and north-eastward of the two $4\frac{1}{2}$ -fathom (8^m7) patches on the south-western side about half a mile west-north-westward of the lighthouse.

Kyle Akin lighthouse in line with Caisteal Maol, bearing 113° , leads north-eastward of the bank extending from the southern shore of the western approach to Kyle Akin. When An Dubh-aird (page 15 552) bears 038° and is open north-westward of Eilean na Crèadha (page 553), a vessel will be in deep water, and clear of the dangers in the western approach to Kyle Akin.

At night a moderate-sized vessel approaching Kyle Akin from eastward should steer in the *white* sector of Kyle Akin light, between 20 the bearings of 278° and 282° , keeping, when nearing String rock (*Lat. $57^{\circ} 16' N.$, Long. $5^{\circ} 43' W.$*), close to the northern limit of this sector. When northward of the light on Kyle Akin pier she should steer to pass about one cable southward of Kyle Akin light, and thence steer with it, astern, showing *white* between the bearings of 25 096° and 132° , until in a depth of over 20 fathoms (36^m6), when she will be clear of the dangers in the western approach to Kyle Akin.

Chart 3292.

Kyle of Lochalsh.—Kyle of Lochalsh is a small town on the northern side of the eastern entrance to Kyle Akin, and is connected 30 with the general railway and telephone systems. There is regular communication by sea with Mallaig and Portree, and with the Hebrides.

A ferry for passengers and vehicles runs between Kyle of Lochalsh and Kyleakin village on the southern shore.

Small quantities of provisions can be obtained at Kyle of Lochalsh. 35 Water is laid on to the pier.

Special bye-laws are in force for vessels carrying petroleum and carbide of calcium.

Plers.—Danger.—Lights.—The pier is a stone structure, extending southward 120 yards (109^m7) from the shore, and has a breadth of 40 224 feet (68^m3). There are depths of from 15 to 19 feet (4^m6 to 5^m8), alongside its outer end, and along each side the depth decreases from 19 to 9 feet (5^m8 to 2^m7) at a distance of about 60 yards (54^m9) from the shore.

There are some cranes on the Railway Terminus pier. A jetty and 45 two slipways are situated about $1\frac{1}{2}$ cables north-eastward of Fishery pier, which is situated about half a cable eastward of Railway Terminus pier; there is a shoal patch, with a depth of $1\frac{1}{2}$ fathoms (2^m7) over it, about 50 feet (15^m2) east-south-eastward of the latter.

Lights are exhibited from the pier-heads; *see page 537.* 50 **Life-saving.**—A life-saving apparatus is maintained at Kyle of Lochalsh; *see page 9.*

Charts 3421, 2551.

INNER SOUND.—Inner sound is the deep channel on the eastern

Charts 3421, 2551.

side of the chain of islands, which extends from about $1\frac{1}{2}$ miles westward from Sgeir na Iasgaich (page 537) for about 22 miles west-north-westward and northward. The southern shore of Inner sound is formed by the coast of the Isle of Skye, and extends from the western entrance of Kyle Akin to and including Broadford bay, about 5 miles west-south-westward. The narrowest part of Inner sound, between Crowlin islands (page 547) and Longay, an island, 214 feet ($65^{\text{m}} 2$) high, about 2 miles south-westward, is known as Linne Crowlin. 5

The southern part of Inner sound is encumbered by islands and 10 shoals off-lying its shores. Northward of Crowlin islands there are no dangers in the fairway, and the sound is from about $3\frac{1}{2}$ to $6\frac{1}{2}$ miles wide, the narrowest part being towards the northern entrance.

Charts 2498, 2551.

Dumping ground.—There is a dumping ground, indicated by a 15 pecked circle on the chart, in Linne Crowlin, about one mile east-north-eastward of the eastern extremity of Longay.

Chart 3421.

Aspect.—The southern shore of Inner sound westward of Sgeir na Iasgaich is backed by hills rising to an elevation of 100 feet ($30^{\text{m}} 5$) 20 close inland. Rubha Lusa, about one mile west-south-westward of Sgeir na Iasgaich, is a flat, cultivated point on the eastern side of the entrance to Abhainn Lusa, a large stream; there are some farm buildings on it.

Rubha Ardnish, the north-eastern extremity of the long, narrow 25 Ardnish peninsula, lies $8\frac{1}{2}$ cables westward of Rubha Lusa, the mouth of Ob Breakish, a considerable stream, lying between. The trap dykes, which are outcrops of rock that extend from the shore and resemble massive jetties, are noticeable features in this vicinity.

Chart 2551.

Beinn na Cailllich, $4\frac{1}{2}$ miles west-south-westward of Rubha Ardnish, is $2,395$ feet ($730^{\text{m}} 0$) high; its northern side falls vertically, but its southern side is smooth and rounded. 30

Chart 2676.

The eastern shore of the southern end of Inner sound, from the 35 Plock of Kyle to Portnacloich point (*Lat. $57^{\circ} 18' N.$, Long. $5^{\circ} 44' W.$*), $1\frac{1}{4}$ miles northward, is indented by small bays and fringed by islands and rocks. Several villages stand on or near the shore, which is closely skirted by the railway.

Chart 2551, with plan of Caol Rona. 40

The southern part of the eastern coast of the Island of Raasay, the southernmost of the two large islands bordering the western side of Inner sound, consists of cliffs.

Brochel castle, in ruins, is situated $6\frac{1}{2}$ miles northward of Eyre point, the south-eastern extremity of the Island of Raasay. 45

A salient point on the eastern side of the Island of Raasay, about $3\frac{1}{2}$ miles north-north-eastward of Brochel castle, is 29 feet ($8^{\text{m}} 8$) high, and is the south-western entrance point of Caol Rona, the channel separating the Island of Raasay from the Island of Rona, $3\frac{1}{2}$ cables north-eastward. 50

The eastern shore of Inner sound from Rubha na h-Uamha, $3\frac{1}{2}$ miles north-westward of Portnachloich point, to Rubha na Fearn, 14 miles northward, is much indented in its southern portion, but the northern part is comparatively regular.

Chart 2551, with plan of Caol Rona.

Ard na Claise Moire, $9\frac{1}{2}$ miles north-north-westward of Rubha na h-Uamha, is a prominent feature, with the village of Lonbain about 2 cables north-north-eastward of it.

- 5 Rubha na Fearn appears long, low, and sterile from south-westward.
Chart 3302.

Lights.—**Radiobeacon.**—A light is exhibited, at an elevation of 16 feet ($4^m 0$), from a white tower, situated on Eyre point.

Chart 2498.

- 10 A light is exhibited, at an elevation of 105 feet ($32^m 0$), from a white beacon, 18 feet ($5^m 5$) in height, situated on Eilean Beag, about $5\frac{1}{2}$ miles east-north-eastward of Eyre Point light-tower.

Chart 2551.

A light is exhibited, at an elevation of 222 feet ($67^m 7$), from a white tower, 42 feet ($12^m 8$) in height, situated on the northern end of the Island of Rona (*Lat. $57^{\circ} 34' N.$, Long. $5^{\circ} 57' W.$*). See views facing page 514.

A radioheacon is operated at Rona lighthouse and there is a radio telephone.

*20 Chart 3421.***Islands and dangers in southern part of Inner sound.—**

Beacons.—**Buoy.**—The dangers bordering the southern shore of Inner sound from the western entrance to Kyle Akin to Sgeir na Iasgaich are described on page 534. The southern shore from Sgeir na Iasgaich to Broadford bay is fringed by a reef, and a shoal bank extends about 5 cables offshore in places.

30 Rocks, which dry, fringe Rubha Lusa, extending about $1\frac{1}{2}$ cables offshore. Sgeir Dubh, about $3\frac{1}{2}$ cables north-north-westward of Rubha Lusa, is 12 feet ($3^m 7$) high, and a reef, which dries, extends about three-quarters of a cable south-eastward and north-westward from it.

A reef, which dries, extends about 3 cables north-eastward, $1\frac{1}{2}$ cables northward, and $4\frac{1}{2}$ cables westward from Rubha Ardnish. Eilean na Ruadhaich, situated on this reef, about $1\frac{1}{2}$ cables north-eastward of Rubha Ardnish, is a small rock, 15 feet ($4^m 6$) high. Sgeir an Ròin, 35 lying at the western edge of this reef, about $4\frac{1}{2}$ cables westward of Rubha Ardnish, dries 9 feet ($2^m 7$). Several shoals, with depths of from three-quarters of a fathom to 3 fathoms ($1^m 4$ to $5^m 5$) over them, extend about 6 cables north-eastward from a position about 4 cables north-westward of Rubha Ardnish.

40 Rubh' Achadh a' Chùirn lies about 9 cables south-westward of Rubha Ardnish. Bogha Mòr Achadh a' Chùirn, which dries 2 feet ($0^m 6$), lies about $2\frac{1}{2}$ cables west-north-westward of Rubh' Achadh a' Chùirn, with foul ground between. A bank, with depths of less than 3 fathoms ($5^m 5$) over it, and a least depth of three-quarters of a fathom ($1^m 4$), extends about 4 cables offshore between Rubha Ardnish and Rubh' Achadh a' Chùirn.

50 Pabay, an island situated about 9 cables north-north-westward of Rubha Ardnish, is formed of lias, and intersected by numerous trap dykes which are outcrops of rock resembling walls. The eastern and western coasts of Pabay rise steeply to an elevation of 40 feet ($12^m 2$), and then more gradually to a flat summit, $3\frac{1}{2}$ cables north-westward of the southern extremity of the island, 82 feet ($25^m 0$) high. The island is covered with grass; there are some farm buildings on its western side. The landing place is a concrete jetty at the south-



To face page 545



Broadford hotel,
bearing 230°

Ben Nevis

Beinn na Caillich

Broadford hotel in line with summit on the southern slope of Ben Nevis bearing 230°.
(Original dated 1858.)

Chart 3421.

western extremity of the island, the outer end of which is marked by an iron perch.

Foul ground and a bank, with depths of less than 3 fathoms (5^m5) over it, extend about 2 cables from the southern side, and about $6\frac{1}{2}$ cables south-south-westward from the south-western extremity of Pabay (*Lat. $57^{\circ} 16' N.$, Long. $5^{\circ} 52' W.$*). Sgeir Ghobhlach, situated near the the south-western edge of this foul area, dries 6 feet (1^m8), and is marked by a red iron beacon, surmounted by a cage, 30 feet (9^m1) high (see view facing this page). There is a boat channel northward of Sgeir 10 Ghobhlach.

Foul ground and a bank, with depths of less than 3 fathoms (5^m5) over it, extend about $2\frac{1}{2}$ cables from the western side of Pabay.

Charts 3421, 2551.

The western extremity of Longay (page 543), in line with the eastern 15 extremity of the Island of Rona, bearing 353° , leads westward of Sgeir Ghobhlach and the dangers off the western side of Pabay.

A reef extends about 3 cables northward from the north-western side of Pabay, and lies in the *white* sector of Kyle Akin light (page 537), between the bearings of 096° and 132° . Caisteal Maol (page 537), 20 bearing 101° and twice its own breadth open northward of the promontory on which is the mound 102 feet (31^m1) high (page 537), leads close northward of this reef in a depth of about 8 fathoms (14^m6).

Chart 3421.

The eastern side of Pabay is fringed by a reef, which extends about 25 $1\frac{1}{2}$ cables offshore.

Caolas Pabay, the channel southward of Pabay, is narrowed by the rocks and shoals extending from both sides to a least width of about $2\frac{1}{2}$ cables between the 5-fathom (9^m1) lines.

Charts 3421, 2551.

The hotel at Broadford, $1\frac{1}{2}$ miles west-south-westward of Rubh' Achadh a' Chùirn, in line with a summit on the southern slope of Beinn Dearg Bheag, a mountain one mile south-south-westward of Beinn na Caillich (page 543), bearing 236° , leads through the fairway of Caolas Pabay. See view facing this page.

Chart 3421.

Caolas Pabay should not be attempted by vessels of deep draught without local knowledge.

Charts 3302, 3421, 2498, 2551.

Scalpay, an island situated about $1\frac{1}{2}$ miles west-north-westward of 40 Pabay, rises abruptly from its southern and south-western coasts to an elevation of 1,289 feet (392^m9). Its northern and north-eastern coasts are rocky, and are fringed by a reef which extends in places one cable offshore.

The coasts of Longay are steep and in some parts cliffy, and are 45 fringed by a reef, which extends one cable offshore in places. About one cable north-westward of the northern extremity of Longay (*Lat. $57^{\circ} 19' N.$, Long. $5^{\circ} 54' W.$*) is a detached reef, which dries 13 feet (4^m0). The channel between Longay and Scalpay is deep and free from dangers.

Charts 2498, 2551.

Gulnare rock, about $1\frac{1}{2}$ miles west-north-westward of the northern extremity of Longay and about 5 cables from the north-eastern side of Scalpay, is awash, and is marked on its western side by a black

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Charts 2498, 2551.

conical buoy. Sgeir Dhearg, about $1\frac{1}{2}$ miles north-westward of Longay, is an islet 21 feet ($6^{\text{m}}4$) high, and is fringed by a reef which extends about half a cable from it; a bank, with depths of less than 5 fathoms ($9^{\text{m}}1$) over it, extends about one cable north-north-eastward and $1\frac{1}{2}$ cables north-eastward from this islet, and a patch, with a depth of 3 fathoms ($5^{\text{m}}5$) over it, lies about $2\frac{1}{2}$ cables westward of it. Sgeir Thraid, about $5\frac{1}{2}$ cables west-north-westward of Sgeir Dhearg, dries 12 feet ($3^{\text{m}}7$), and is marked by a red iron beacon, surmounted by a barrel-shaped cage, 30 feet ($9^{\text{m}}1$) high. Several shoals, with depths of 5 fathoms ($9^{\text{m}}1$) over them, lie within $3\frac{1}{2}$ cables south-eastward of Sgeir Dhearg, and within $2\frac{1}{2}$ cables southward of Sgeir Thraid. The bank on which these rocks and shoals are situated has an uneven irregular bottom, and is covered by a red sector of Eyre Point light (page 544), between the bearings of 266° and 288° .

There is a channel, free from dangers, with a least width of about 3 cables, between this bank and the north-eastern side of Scalpay; the south-western extremity of Longay in line with Beinn na Caillich, $7\frac{1}{2}$ miles south-eastward, bearing 121° , leads through the fairway.

20 Charts 3302, 2498.

Eilean Leac na Gainimh, situated close offshore, about $1\frac{1}{2}$ cables eastward of the northern extremity of Scalpay, is a grassy islet 16 feet ($4^{\text{m}}9$) high; a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extends about one cable north-north-eastward from this islet. The 25 north-eastern coast of Scalpay for about one mile east-south-eastward of Eilean Leac na Gainimh, is foul for about 2 cables offshore. Eyre Point light is obscured over this foul area.

Caol Mòr, the channel between the north-western end of Scalpay and the southern end of the Island of Raasay, connects Inner sound 30 with Loch na Cairidh (page 502) and also with the Sound of Raasay (page 504). It is deep and free from dangers in the fairway, but a bank, with depths of less than 5 fathoms ($9^{\text{m}}1$) over it, extends in places about $1\frac{1}{2}$ cables from the northern side of Scalpay, and about $2\frac{1}{2}$ cables south-eastward from Eyre point (*Lat.* $57^{\circ} 20' N.$, *Long.* $6^{\circ} 01' W.$). It is reported that it is often calm in Caol Mòr when there are strong breezes in the vicinity.

Charts 3292, 2676.

The eastern coast of Inner sound from the Plock of Kyle to Portnacloich point is fringed by islands and rocks. Fork rocks, Carrach rock, and Eilean nan Gillean, westward and north-westward of the Plock of Kyle, are described on page 539.

The area between Eilean nan Gillean and Portnacloich point is very foul; the westernmost danger in this vicinity is a rock, $4\frac{1}{2}$ cables northward of Eilean nan Gillean and about $3\frac{1}{2}$ cables offshore, which 45 dries about 13 feet ($4^{\text{m}}0$).

Charts 3302, 2498.

The Island of Raasay borders the western side of the southern part of Inner sound. The eastern coast of the island is nearly straight and steep-to, but the southern and northern parts of its western 50 coast are more indented.

The southern half of the island is mountainous, many of the hills exceeding 1,000 feet ($304^{\text{m}}8$) in elevation; their western sides slope gradually to the sea, while the eastern sides terminate in cliffs varying from 400 to 900 feet ($121^{\text{m}}9$ to $274^{\text{m}}3$) in elevation. The northern

Charts 3302, 2498.

portion of the island, except Beinn na h-Iolaire (chart 2551), 2½ miles from its northern extremity, is comparatively low.

The most remarkable feature in the Island of Raasay is Dùn Caan, 2½ miles northward of Eyre Point lighthouse, a mountain 1,448 feet (441^m3) high, terminating in a small fortress-like hillock with a truncated summit, which has the same appearance from all directions excepting from the north-eastern part of the Sound of Raasay.

There is regular communication by sea between the Island of Raasay and Mallaig, Kyle of Lochalsh, and Portree.

There are no shoals off-lying the eastern side of the Island of Raasay, but in places shoal banks extend 2 cables offshore.

Chart 2498.

Crowlin islands, lying on the eastern side of the southern part of Inner sound, about one mile westward of Rubha na h-Uamha (page 15 543), are a group of three islands, connected with each other by reefs that dry.

Eilean Mòr, the south-eastern and largest island, is 367 feet (111^m9) high; the eastern and southern sides of this island are fringed by a reef, which extends in places about half a cable offshore.

Eilean Meadhonach lies close off the western side of Eilean Mòr; a reef, which dries, extends about one cable southward from its southern end.

Eilean Beag, the northernmost of the Crowlin group, on which stands a light-beacon, has foul ground extending about 2½ cables north-north-eastward from its northern end; the northern edge of 25 this foul area dries 2 feet (0^m6). The channel between Eilean Meadhonach and Eilean Mòr, open and bearing about 172°, leads eastward; Coillcille village, 2½ miles north-north-westward of Rubha na h-Uainha, bearing 055° and open north-westward of Eilean na Bà (see below), or the Free church manse, 2 miles north-north-eastward 30 of Eilean na Bà, bearing 032° and open north-westward of Airdban, a promontory 9½ cables northward of Eilean na Bà, lead north-westward, of this foul area.

The eastern shore of the southern part of Inner sound is for the most part steep-to, and there are no dangers beyond 3 cables offshore.

Bo Du, about one mile north-westward of Rubha na h-Uamha and 2½ cables offshore, dries 3 feet (0^m9). Rocks, lying close off the point 1½ miles north-westward of Rubha na h-Uamha, are from 10 to 20 feet (3^m0 to 6^m1) high and bare. Sgeir Shalach, about 3 cables north-westward of these rocks and about 1½ cables offshore, dries 14 feet (4^m3). 40 Eilean na Bà, about 9 cables north-westward of these above-water rocks and 3 cables offshore, is 72 feet (21^m9) high. It is fringed by a reef, which extends in places about 1½ cables offshore; Sgeir Bhuidhe, situated near the southern edge of this reef, is 15 feet (4^m6) high.

Between Eilean na Bà (*Lat.* 57° 22' *N.*, *Long.* 5° 50' *W.*) and the 45 northern extremity of Airdban promontory the eastern shore is foul for about 1½ cables offshore. Sgeir Mòr, about 1½ cables westward of the northern extremity of Airdban promontory, dries 9 feet (2^m7), and is marked by a beacon, which should not be depended on.

Seal rock, about 3½ cables north-north-eastward of the northern 50 extremity of Airdban promontory and one cable offshore, dries 2 feet (0^m6).

Eilean nan Naomh, about 5½ cables northward of the northern extremity of Airdban promontory and about 2 cables offshore, is low

Charts 2498.

and flat; it is fringed by a reef which extends about 2 cables south-south-westward, three-quarters of a cable westward, and $2\frac{1}{2}$ cables northward from it. A beacon stands at the south-western edge of this reef, but it should not be depended on. The area between Eilean nan Naomh and the shore eastward is very foul.

Applecross church, $2\frac{1}{2}$ miles north-north-eastward of Eilean nan Naomh, bearing 018° , and open westward of the western extremity of the land, leads westward of all the shoals westward of Airdban promontory and Eilean nan Naomh.

*Chart 2551.***Islands and dangers in northern part of Inner sound.—**

Little rocks, situated on the eastern side of Inner sound, about $3\frac{1}{2}$ miles north-north-westward of Eilean nan Naomh and $1\frac{1}{4}$ cables offshore, dry 2 feet (0^m6), and three shoals, with a depth of 2 fathoms (3^m7) over them, within about 4 cables northward of Little rocks, lie from one to 2 cables offshore. Abreast the northernmost of these 2-fathom (3^m7) shoals the eastern shore is foul for about three-quarters of a cable offshore; the inlet in this vicinity completely dries.

Chart 2638.

A bank, with a depth of less than 5 fathoms (9^m1) over it, extends about one cable westward from Ard na Claise Moire (page 544); and a rock, which dries, lies about half a cable north-westward of this point.

Chart 2551, with plan of Caol Rona.

25 The south-eastern entrance to Caol Rona (page 543), on the western side of Inner sound, is partly obstructed by three islets, Eilean an Fhraoich, Eilean Seamraig, and Garbh eilean, named in order from south-westward.

Eilean an Fhraoich (*Lat. $57^\circ 31' N.$, Long. $5^\circ 59' W.$*), is grassy-topped and 40 feet (12^m2) high; foul ground extends about half a cable westward and three-quarters of a cable north-westward from this islet. A rock, with a depth of 6 feet (1^m8) over it, lies about half a cable eastward of the eastern side of Eilean an Fhraoich. There is a navigable channel on either side of Eilean an Fhraoich; the north-eastern coast of Eilean Tigh, which forms the south-western side of Caol Rona, is steep-to.

Eilean Seamraig is 40 feet (12^m2) high, with some grass on its summit. Sgeir nan Eun, lying about half a cable south-eastward of its south-eastern end, is an above-water rock. The channel between

40 Eilean Seamraig and Garbh eilean is blocked by rocks.

Garbh eilean, which rises to a double peak, 197 feet (60^m0) high, is joined to the southern end of the Island of Rona by a reef which dries.

Chart 2551.

The Island of Rona, bordering the western side of the northern part of Inner sound, has a bare, rugged outline, with small patches of verdure, but very little cultivation. It is 398 feet (121^m3) high, and several hills from about 200 to 300 feet (61^m0 to 91^m4) in elevation extend as a ridge nearly along the middle but rather towards the eastern side of the island, where they fall steeply to the sea. The 50 eastern coast is nearly straight, but the western coast is indented by bays, one of which, Acairseid Mhòr, $1\frac{1}{2}$ miles from the southern end of the island, is a safe harbour, but small and difficult of access. See view facing this page

The eastern coast of the Island of Rona is free from off-lying

To face page 548.



Solitary cottage,
Isle of Skye.

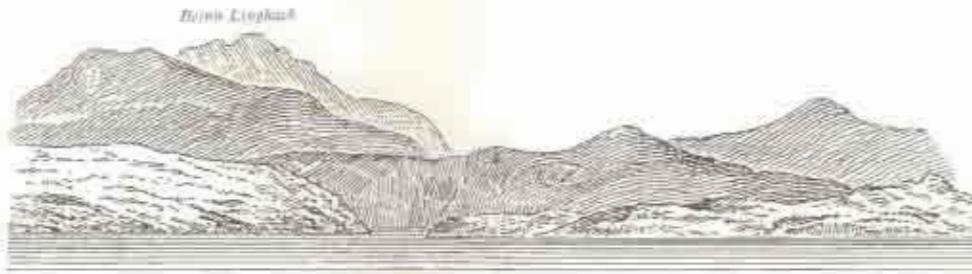
View of entrance to Achriesgill Mhuir.
(original print 14.33 x 22.)



Eilean Chuing

Clearing marks for Murchadh Broac
Ard na Claise Moire open westward of Eilean Chuing.

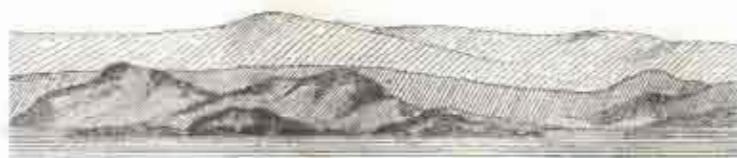
Ard na Claise Moire
bearing 112°



Beinn Liughach
bearing 102°

Clearing marks for Na Gomhluarait.
Rubha na Fearn in line with the fall of Beinn Liughach
(Original dated prior to 1867.)

North summit.



Sgeit an Arraig

Loch Ewe—North summit of Mellmann seen over the dip between the
two summits of Sgeit an Arraig, bearing 251°.
(Original dated 1867.)

Chart 2551.

dangers, but in places a shoal bank extends about 2 cables offshore.

Chart 2638.

The eastern shore of Inner sound between Ard na Claise Moire (page 544) and Rubha Chuaig, $3\frac{1}{2}$ miles northward, is free from dangers, with the exception of a rocky shoal, with a depth of 4 fathoms (7^m3) over it, lying about 8 cables northward of Ard na Claise Moire, and $3\frac{1}{4}$ cables offshore, and a shoal, with a depth of 29 feet (8^m8) over it, about $1\frac{1}{2}$ miles northward of the same point and about 3 cables offshore. About 5 cables south-south-westward of Rubha Chuaig (*Lat. $57^{\circ} 34' N.$, 10 Long. $5^{\circ} 51' W.$*) and about $1\frac{1}{2}$ cables offshore is a rock which dries 6 feet (1^m8); a shoal bank connects this rock with the eastern shore.

A bank, with depths of from 2 to 3 fathoms (3^m7 to 5^m5) over it, extends about three-quarters of a cable north-north-westward from Rubha Chuaig; a rock, with a depth of 2 feet (0^m6) over it, lies $1\frac{1}{2}$ cables north-north-eastward of the same point. Eilean Chuaig, lying 3 cables northward of the same point, is rocky, 24 feet (7^m3) high, and fringed by a reef; a bank, with depths of less than 5 fathoms (9^m1) over it, extends about $1\frac{1}{2}$ cables south-westward and westward from Eilean Chuaig. Peters rock, which dries 4 feet (1^m2), lies one 20 cable north-eastward and a shoal, with a depth of 22 feet (6^m7) over it, lies $1\frac{1}{2}$ cables north-westward of Eilean Chuaig.

Rocks, which dry from 3 to 7 feet (0^m9 to 2^m1), extend about $1\frac{1}{2}$ cables offshore, north-westward and northward from Rubha na Fearn (page 548). Murchadh Breac, about 3 cables north-north- 25 westward of Rubha na Fearn, dries 4 feet (1^m2), and a shoal, with a depth of less than 6 feet (1^m8) over it, is situated 3 cables north-north-eastward of the northern extremity of the same point.

Ard na Claise Moire, bearing 180° , and open westward of Eilean Chuaig (*see view facing this page*), leads about $1\frac{1}{2}$ cables westward 30 of Murchadh Breac. The white schoolhouse, at the north-eastern end of Loch Diabaig, about $4\frac{1}{2}$ miles eastward of Rubha na Fearn, bearing about 098° and just open northward of Rubha na Fearn, a promontory 7 cables east-north-eastward of Ruhha na Fearn, leads $2\frac{1}{2}$ cables northward of Murchadh Breac, but only $1\frac{1}{2}$ cables northward 35 of the 6-foot (1^m8) shoal eastward of it.

Chart 2551.

Several above-water and sunken rocks extend about $8\frac{1}{2}$ cables northward from the northern end of the Island of Rona. Na Gamhnachain, the northernmost of these rocks, is awash; no vessel should 40 attempt to pass between these rocks.

The white schoolhouse, mentioned above, bearing about 098° and just open northward of Rubha na Fearn; or Rubha na Fearn in line with the fall of Beinn Luighach, 10 miles east-south-eastward, bearing 102° , leads northward of Na Gamhnachain. *See view facing this page.* 45 Charts 3421, 2498.

Tidal streams.—In the southern part of the Sound of Raasay and Inner sound the streams run in the directions of the fairways, to or from Kyle Akin, and begin nearly simultaneously in all the fairways; these times differ widely from those at which the east-going and west-going streams begin in Kyle Akin, and off the entrance to the kyle the streams are weak and irregular. 50

Between Crowlin islands and the mainland, Crowlin islands and Longay, and Longay and Scalpay, the south-east-going stream begins

Charts 3421, 2498.

+ 0600 Stornoway (+ 0145 Dover), the north-west-going stream begins H.W. Stornoway (- 0415 Dover); the spring rate in each direction is about one knot between Crowlin islands and the mainland, 0·5 knot between the islands and Longay, and 2 knots between Longay and Scalpay.

In Caolas Pabay the north-east-going stream begins + 0545 Stornoway (+ 0130 Dover), the south-west-going stream begins - 0015 Stornoway (- 0430 Dover); the spring rate in each direction is about 10 one knot. There is little or no stream in Broadford bay; there is also little or no stream between Pabay and the land south-westward and between Pabay and Longay (*Lat. 57° 19' N., Long. 5° 53' W.*).

In Caolas Scalpay and Loch na Cairidh the south-going stream begins + 0515 Stornoway (+ 0100 Dover), the north-going stream 15 begins - 0100 Stornoway (- 0515 Dover); the spring rate in each direction is about one knot.

In the Narrows of Raasay the south-going stream begins - 0610 Stornoway (+ 0200 Dover), the north-going stream begins -- 0045 Stornoway (- 0500 Dover); the spring rate in each direction is from 20 about 1·5 to 2 knots in mid-channel, increasing to about 3 knots near the shoals on both sides. An eddy, spring rate about one knot, runs northward in Churchton bay during the south-going stream. The streams lose strength rapidly both northward and southward of the narrows; the south-going stream divides and runs to Caol Mòr and 25 Loch na Cairidh, and the streams from these channels meet and run to the narrows.

In Caol Mòr the stream begins to run in easterly directions + 0600 Stornoway (+ 0145 Dover), and in westerly directions H.W. Stornoway (- 0415 Dover); the spring rate in each direction is about one 30 knot. The streams are rather variable in direction and may run towards the land.

In the entrance to Loch Sligachan the in-going stream begins about + 0800 Stornoway (+ 0145 Dover), the out-going stream begins about - 0020 Stornoway (- 0435 Dover); the spring rate in each direction 35 is about 1·5 knots. In the loch the streams are imperceptible.

In Loch Ainort the streams are imperceptible.

In Inner sound the streams are very weak everywhere clear of the land; on the average the south-going stream begins + 0515 Stornoway (+ 0100 Dover) and the north-going stream begins about - 0045 Stornoway (- 0500 Dover); the streams begin rather earlier at the northern end, and rather later at the southern end of the sound. There are probably appreciable streams, spring rate up to about one knot, off the salient points on both sides of the sound.

In Caol Rona the streams run in about the direction of the channel; 45 the south-east-going stream begins + 0500 Stornoway (+ 0045 Dover), and the north-west-going stream begins - 0100 Stornoway (- 0515 Dover); the spring rate in each direction is moderate, probably not more than one knot.

Chart 3421.

50 Anchorage at southern end of Inner sound.—The shore between Sgir na Iasgaich (page 537) and Sgeir Dubh (page 544) can be safely approached, and anchorage can be obtained about 2 cables eastward of Sgeir Dubh, in depths of from 6 to 8 fathoms (11^m0 to 14^m6), good holding ground.

Chart 3421.

Broadford bay affords no shelter from northerly winds. The eastern and western shores of the bay are fringed by a reef, which dries, extending about $1\frac{1}{2}$ cables offshore; the head of the bay dries out from three-quarters of a cable to $3\frac{1}{2}$ cables. There are numerous cottages 5 on the shores of this bay, and along the road to Kyleakin.

Bogha Mòr Achadh a' Chùirn, on the eastern side of the entrance to Broadford bay, is described on page 544. Glas eilean, situated on the coastal reef, at the head of the bay, about $5\frac{1}{2}$ cables south-westward of Rubh' Achadh a' Chùirn, is 10 feet ($3^{\text{m}}0$) high. 10

About 3 cables south-south-westward of Rubh' an Eireannaich, the western entrance point of Broadford bay, Corry pier (*Lat. 57° 15' N., Long. 5° 54' W.*) extends about one cable east-south-eastward from the western shore, and there are depths of from 12 to 13 feet ($3^{\text{m}}7$ to $4^{\text{m}}0$) at its head; the pier is closed for all traffic. 15

About $3\frac{1}{2}$ cables south-south-westward of Corry pier is the mouth of Broadford river, where small vessels can lie safely all the winter, and about 2 cables eastward of the river entrance a small pier projects from the head of the bay, but it dries alongside.

The best anchorage in Broadford bay is with the outer end of Corry pier bearing 275° , distant from $1\frac{1}{2}$ to $2\frac{1}{2}$ cables, in a depth of about 6 fathoms ($11^{\text{m}}0$), good holding ground. 20

Corry house is situated amongst trees on the western shore of the bay, about three-quarters of a cable north-westward of the inner end of Corry pier. The Wash-house is situated $1\frac{1}{2}$ cables north-north-eastward, and the farm buildings and Temperance hotel stand close south-south-eastward, of Corry house. 25

Broadford village, on the western side of the head of Broadford bay, consists of a few houses; in it are an hotel, and the post and telegraph office, which latter is connected with the general telephone system. Small quantities of provisions can be obtained here. There is regular communication by sea with Kyle of Lochalsh and Portree. 30

Charts 3564, 2639.

Lochs Carron and Kishorn.—Loch Carron is entered between 35 Portnacloich point (page 543) and Rubha na h-Uamha, about 3 miles north-westward and the loch trends about $4\frac{1}{2}$ miles east-north-eastward to a broad promontory, of which Rubh Alasdair Ruaidh is the south-western and Meall na h-Airde the north-western head, where the loch bifurcates. The arm of the loch southward of Rubh Alasdair Ruaidh 40 continues to be called Loch Carron, while the arm of the loch northward of Meall na h-Airde is called Loch Kishorn.

The approach to Strome narrows, southward of Rubh Alasdair Ruaidh (*Lat. 57° 22' N., Long. 5° 37' W.*), is encumbered by numerous islets, rocks, and shoals, and the narrows have a least navigable width 45 of about one cable. The loch within the narrows gradually opens out, and its upper part is about one mile wide. Loch Carron is deep, and has two good anchorages.

Loch Kishorn is an excellent port of refuge for large vessels; the holding ground is good, and no swell comes home; the most dangerous 50 winds are from north-westward. There are no dangers in the fairway of the entrance to this loch. Achintraid village is situated on the southern side of the head of Loch Kishorn, and the River Kishorn flows into the northern part of the head of this loch.

Charts 3564, 2639.

Aspect.—Rubha na h-Uamha, the north-western entrance point of Loch Carron, is a steep bold point, terminating in a cliff.

An Dubh-a'ird, $2\frac{1}{2}$ miles north-north-eastward of Portnaclloch point, is a dark heath-covered peninsula, 116 feet ($35^{\text{m}}4$) high, rising steeply on all sides. Rubha Mòr, about $1\frac{1}{2}$ miles eastward of An Dubh-a'ird, is the north-eastern extremity of a hilly peninsula which attains an elevation of 200 feet ($61^{\text{m}}0$); the lower slopes of these hills are cultivated in patches and separated from the higher hills southward by a gap. Creag nan Garadh, a steep-faced wooded hill, 466 feet ($142^{\text{m}}0$) high, 9 $\frac{1}{2}$ cables south-south-westward of the northern extremity of Rubha Mòr, is situated on the southern side of this gap.

The background on the north-western side of the entrance to Loch Carron is sterile and mountainous, beginning near Rubha na h-Uamha with rugged hills from 800 to 1,000 feet ($243^{\text{m}}8$ to $304^{\text{m}}8$) high, increasing in elevation and barrenness until reaching Sgùrr a' Chaorainn, $5\frac{1}{2}$ miles north-eastward of Rubha na h-Uamha, which attains an elevation of 2,592 feet ($790^{\text{m}}0$).

Airigh drishaig, about $2\frac{1}{2}$ miles east-north-eastward of Rubha na h-Uamha, is the first cultivated land on this sterile shore. It lies on a slope, with one or two white cottages on it, which, though steep, is flatter than the adjacent land, and there is a burn immediately westward; the shore is skirted by a belt of trees. At all seasons the bright green and yellowish tints here contrast with the sombre appearance of the adjacent country.

Allt a' Chois is a burn which flows into the loch about one mile north-eastward of Airigh-drishaig. About $1\frac{1}{2}$ cables from its mouth is a conspicuous waterfall, 238 feet ($72^{\text{m}}5$) high, having a steep brow on its western side, and the mountains of Meall Gorm (*Lat. $57^{\circ} 24'$ N., Long. $5^{\circ} 41'$ W.*) sloping down to it on the eastern side.

Allt a' Chumhaing, about one mile east-north-eastward of Allt a' Chois, is a burn with a waterfall, 250 feet ($76^{\text{m}}2$) high, a quarter of a mile within its entrance.

Rubh' Alasdair Ruaidh is 506 feet ($154^{\text{m}}2$) high, and a spur of Bad a' Chreamha, a mountain 1,285 feet ($391^{\text{m}}7$) high, one mile east-north-eastward. The sides of Rubh' Alasdair Ruaidh are wooded and its south-western coast rises to an elevation of about 84 feet ($25^{\text{m}}6$) in remarkable terraces. Loch Reraig, between Rubh' Alasdair Ruaidh and Meall na h-Airde, is an inlet, on the northern side of which is Reraig peak, bare and 400 feet ($121^{\text{m}}9$) high. Between Rubh' Alasdair Ruaidh and the south-eastern shore lie Strome narrows, with some islets lying in the centre of the western entrance.

Duneraig castle, situated on the southern shore, about 6 cables south-eastward of the northern extremity of Rubha Mòr, is a stone building standing in well-wooded grounds near the shore. Creag-daroe, a hill of 6 $\frac{1}{2}$ cables southward of Duneraig castle, is 844 feet ($257^{\text{m}}2$) high and conspicuous.

Eastward of Duneraig castle the character of the shore alters from rock to alluvial deposit. It is backed close inland by Creagan Duilisg, a range of basaltic cliffs, 1,146 feet ($349^{\text{m}}3$) high, 9 cables eastward of Duneraig castle, which curves south-westward; between this range and Creag Mhaol, $1\frac{1}{2}$ miles north-eastward, is Srath Aseraig, a deep valley, the entrance to which is crossed by a railway embankment.

A remarkable raised beach begins on the eastern side of Srath

Charts 3564, 2639.

Ascaig, and fronts the hills for about one mile, rising to an elevation of from 80 to 100 feet (24^m4 to 30^m5) with a narrow strip of flat stony land at its base, only a few feet high.

Creag Mhaol is 649 feet (197^m8) high and conspicuous; in places it is 5 very steep. Portchullin (Port a Chuilinn), 1 $\frac{1}{2}$ cables north-north-westward of Creag Mhaol, is a small fishing village, with a few huts at the foot of the raised beach.

Am Meallan, about 9 $\frac{1}{2}$ cables east-south-eastward of Creag Mhaol, 10 is a sharp-pointed peak, 933 feet (284^m4) high, and is the highest of the hills immediately southward of Stromeferry, a village 8 cables eastward of Portchullin.

Charts 3564, 2639, 2551.

Pilots.—There are no regular pilots in Loch Carron, but Kyleakin (page 537) a vessel from southward can obtain the services of a 15 fisherman acquainted with the loch, and a vessel from northward can obtain similar assistance from the cottages on the eastern side of Eilean Mòr (*Lat. 57° 20' N., Long. 5° 50' W.*). For the upper part of Loch Carron assistance can generally be obtained at Plockton, a village 20 on the southern side of the loch, about a quarter of a mile south-westward of the northern extremity of Rubha Mòr.

Charts 3564, 2639.

Tidal streams.—The streams are weak except in Strom narrows, where the in-going stream begins + 0600 Stornoway (+ 0145 Dover), and the out-going stream begins H.W. Stornoway (- 0415 Dover); 25 the spring rate in each direction is from 2 to 3 knots. In the western entrance to the narrows the in-going stream sets towards the northern shore; in the eastern entrance the out-going stream sets towards the southern shore.

Chart 2639.

30

Islets and dangers in outer part of Loch Carron.—Beacons.—The northern shore of the outer part of Loch Carron is steep-to.

The south-eastern shore of the outer part of Loch Carron, for about one mile north-north-eastward of Portnacloich point, is fringed by a reef, which extends as much as 1 $\frac{1}{2}$ cables offshore. Eilean na Crèadha, 35 7 cables north-north-eastward of Portnacloich point, and Eilean nan Gobhar Mòr, close north-eastward of Eilean na Crèadha, lie at the edge of the coastal reef.

Sgeir Bhuidhe, about 7 cables north-eastward of Eilean nan Gobhar Mòr, and Eilean Dubh Dhurinish, 2 cables farther north-north-eastward, are 19 feet (5^m8), and 21 feet (6^m4) high, respectively.

Charts 3564, 2639.

Between Eilean Dubh Dhurinish and An Dubh-aird some islets and rocks lie close offshore.

A shoal, with a depth of 6 $\frac{1}{2}$ fathoms (11^m9) over it, lies about 45 2 $\frac{1}{2}$ cables north-north-westward, and a shoal, with a depth of 4 $\frac{1}{2}$ fathoms (8^m2) over it, 4 $\frac{1}{2}$ cables north-north-eastward of An Dubh-aird.

Chart 3564.

From a position about 4 $\frac{1}{2}$ cables eastward of An Dubh-aird (*Lat. 57° 20' N., Long. 5° 41' W.*), a foul area, in which there are 50 numerous islets and rocks, extends about one mile east-north-eastward, and as much as about 3 $\frac{1}{2}$ cables offshore. Sgeir nan Sgarbh, at the north-western end of this foul area, about 4 $\frac{1}{2}$ cables north-eastward of An Dubh-aird, dries 16 feet (4^m9); a rocky shoal, with a least depth

Chart 3564.

of $3\frac{1}{2}$ fathoms (5^m0) over it, is situated about $5\frac{1}{2}$ cables north-eastward of An Dubh-aird, and a shoal, with a depth of 5 fathoms (9^m1) over it, about half a cable north-westward of the $3\frac{1}{2}$ -fathom (5^m9) shoal.

- 5 An Gairbh eilean and Eilean an Duine, at the eastern end of this foul area, close northward of Rubha Mòr, are connected with the shore and with each other by a reef that dries. Eilean a Chait, three-quarters of a cable northward of Eilean an Duine, is 24 feet (7^m3) high, and is connected with Eilean an Duine by a sandspit, which 10 dries. On the northern point of Eilean a Chait is a disused light-tower, 35 feet (10^m7) high, which is conspicuous. A bank, with depths of less than 3 fathoms (5^m5) over it, extends about $2\frac{1}{2}$ cables north-westward from Eilean a Chait. Hawk rock, about one cable eastward of Eilean a Chait, has a depth of 3 feet (0^m9) over it.
- 15 Sgeir Golach, the southern end of which is situated about 2 cables northward of Eilean a Chait, is an above-water and sunken reef. High Stone, at the south-eastern end of this reef, is one foot (0^m3) high, but is not easily distinguished at high water. On the western side of the reef, about $1\frac{1}{2}$ cables westward of High Stone, is a rock which 20 dries 12 feet (3^m7), and which is marked at its southern end by an iron pile beacon, 9 feet (2^m7) high, surmounted by a cage. At the north-western end of the reef, about $1\frac{1}{2}$ cables northward of the beacon, is a rock, which dries 3 feet (0^m9), and at the northern end of the reef, $1\frac{1}{2}$ cables north-north-eastward of the beacon, is a rock which 25 dries 10 feet (3^m0). A shoal, with a least depth of $2\frac{1}{2}$ fathoms (5^m0) over it, lies about $1\frac{1}{2}$ cables west-north-westward of the beacon.

Charts 3564, 2639.

The southern extremity of Eilean an' t' Sratha (page 556) in line with Am Meallan, bearing 096° , leads through the channel southward of 30 Sgeir Golach in a depth of not less than 3 fathoms (5^m5). (See view A on chart 2639.) Should Am Meallan (*Lat. $57^\circ 21' N.$, Long. $5^\circ 33' W.$*) be obscured a vessel should bring the beacon on Bogha Dubh sgeir, (page 555) in line with the 390-foot (118^m9) summit of the shoulder at the north-eastern end of Creag an Duilisg (page 552), bearing 106° , 35 which also leads through the fairway of the channel southward of Sgeir Golach.

The remarkable steep fall of the raised beach above Ardaneaskan (Ardaniaskin), $1\frac{1}{2}$ miles eastward of Sgeir Golach beacon, in line with the northern extremity of the land on the southern side of the narrows 40 of Loch Carron, bearing 095° (see view A on chart 3564), leads $1\frac{1}{2}$ cables northward of Sgeir Golach. The north-eastern extremity of Sgeir Buidbe (page 555), in line with Allt a' Chois waterfall, bearing 319° , leads close north-eastward of Sgeir Golach in a least depth of 4 fathoms (7^m3).

Chart 3564.

Sgeir a Chinn, about 6 cables north-westward of High Stone, is 5 feet (1^m5) high, and foul ground, and a bank, with depths of less than 5 fathoms (9^m1) over it, extends about one cable southward from it. A shoal, with a depth of $4\frac{1}{2}$ fathoms (8^m7) over it, lies about $2\frac{1}{2}$ cables 50 south-westward, and a shoal, with a depth of 5 fathoms (9^m1) over it, about the same distance west-south-westward, of Sgeir a Chinn. The tower on Eilean a Chait in line with the tower of Duncraig castle, bearing 145° , leads between these shoals, on the south-west and the foul ground southward of Sgeir a Chinn on the north-east.

Chart 3564.

Sgeir Buidhe, about half a cable eastward of Sgeir a Chinn, is 14 feet (4^m3) high, and foul ground and a bank, with depths of less than 3 fathoms (5^m5) over it, extend about half a cable south-eastward, and about three-quarters of a cable northward from it. A shoal, ⁵ with a depth of $3\frac{1}{2}$ fathoms (6^m4) over it, lies one cable eastward of Sgeir Buidhe, and shoals, with depths of from 3 to 5 fathoms (5^m5 to 9^m1) over them, lie from about $2\frac{1}{2}$ cables north-westward to 4 cables north-north-westward of this islet.

A shoal, with a least depth of $1\frac{1}{2}$ fathoms (2^m7) over it, is situated ¹⁰ about $3\frac{1}{2}$ cables north-north-eastward of Sgeir Buidhe. High Stone in line with Creagdaroch, bearing 164° , leads close westward of this shoal.

Sgeir Beag, about $2\frac{1}{2}$ cables east-north-eastward of Sgeir Buidhe, dries 3 feet (0^m9). ¹⁵

Charts 3564, 2639.

The western extremity of Kishorn island (*Lat. $57^\circ 23' N.$, Long. $5^\circ 39' W.$*) (page 557), in line with Allt a' Chumhaing waterfall, bearing 352° , leads westward of Sgeir Beag.

Chart 3564.

Eilean na Beinn, about one mile east-north-eastward of Sgeir Golach beacon and one cable from Rubha Thollaith, the western extremity of Rubh Alasdair Ruaidh, is a bare rock of pale-coloured stone 40 feet (12^m2) high. Douglas rock, with a depth of one fathom (1^m8) over it, lies about 2 cables west-south-westward; and a shoal, with a depth of ²⁵ $4\frac{1}{2}$ fathoms (8^m7) over it, lies about $2\frac{1}{2}$ cables westward of Eilean na Beinne. From a line joining Douglas rock, Eilean Beinne and Rubha Thollaith, a flat, with depths of less than 3 fathoms (5^m5) over it, extends to Eilcan an' t'Sratha, about 7 cables south-eastward and the islets in that vicinity. ³⁰

A shoal, with a least depth of 2 fathoms (3^m7) over it, is situated on the southern side of the loch, about 2 cables east-north-eastward of Rubha Mòr. High Stone in line with Sgeir Buidhe, bearing 330° , leads close south-westward of this shoal, and north-eastward of Hawk rock. ³⁵

Bogha Dubh sgeir, about $5\frac{1}{2}$ cables east-south-eastward of High Stone, dries 3 feet (0^m9), and is marked by an iron pile beacon, 10 feet (3^m0) high, surmounted by a cage. A shoal, with a depth of $4\frac{1}{2}$ fathoms (7^m8) over it, and a shoal, with a depth of $4\frac{1}{2}$ fathoms (8^m2) over it, lie about three-quarters of a cable and $1\frac{1}{2}$ cables, respectively, west-south-westward of Bogha Dubh sgeir, and shoals, with a least depth of one fathom (1^m8) over it, extend about $3\frac{1}{2}$ cables eastward from this beacon. Birch rock, about $3\frac{1}{2}$ cables south-eastward of Bogha Dubh sgeir, has a least depth of one fathom (1^m8) over it. ⁴⁰

Charts 3564, 2639.

The north-eastern extremity of Sgeir Buidhe in line with Allt a' Chois waterfall, bearing 319° , leads south-westward of Birch rock, and between the $4\frac{1}{2}$ - and $4\frac{1}{2}$ -fathom (7^m8 and 8^m2) shoals west-south-westward of Bogha Dubh sgeir. A point on the southern shore, $5\frac{1}{2}$ cables south-eastward of Eilean an' t'Sratha, in line with the southern shoulder of Am Meallan, bearing 095° (see view B on chart 3564), leads close northward; and the centre of Sgeir Bhuidhe in line with the station-master's house, 9 cables west-south-westward of Sgeir Bhuidhe, bearing 246° , leads close south-eastward of Birch rock. ⁴⁵

Chart 3564.

Sgeir Bhuidhe (*Lat. 57° 20' N., Long. 5° 38' W.*), an islet 16 feet (4^m9) high, with some trees on it, lies about 5¹/₂ cables south-south-westward of Bogha Dubh sgeir and one cable offshore. Plockton rocks, which dry from 3 to 8 feet (0^m9 to 2^m4), lie about three-quarters of a cable north-north-westward; and a rock, which dries 8 feet (2^m4), and is marked by an iron spindle, lies about half a cable southward of Sgeir Bhuidhe. A rock, with a depth of one fathom (1^m8) over it, lies half a cable north-north-eastward, and a shoal, with a depth of 10 3 fathoms (5^m5) over it, lies about 2¹/₂ cables east-north-eastward of Sgeir Bhuidhe.

Eilean na Creige Duibhe, about 6 cables eastward of Sgeir Bhuidhe, and three-quarters of a cable offshore, is 80 feet (24^m4) high. Ulluva, about 1¹/₂ cables north-north-eastward of Eilean na Creige Duibhe and 15 1¹/₂ cables offshore, is a flat bare rock, marked at its northern end by a rough stone beacon, 15 feet (4^m6) high, which is not conspicuous from northward. Foul ground and a bank, with depths of less than 3 fathoms (5^m5) over it, extend about 1¹/_{2 cables westward from Ulluva. A rock awash, about half a cable north-north-westward of Ulluva 20 beacon, is situated on the southern edge of the fairway.}

There are shoals and foul ground southward of a line joining Plockton rocks and Ulluva. An Dubh sgeir, about 3¹/₂ cables eastward of Bogha Dubh sgeir, is a flat rock 3 feet (0^m9) high. Foul ground and a bank, with depths of less than 3 fathoms (5^m5) over it, extend about one 25 cable southward; a rock, which dries 2 feet (0^m6), lies three-quarters of a cable east-north-eastward; and a shoal, with a depth of 2¹/₂ fathoms (4^m6) over it, lies one cable north-eastward of An Dubh sgeir.

An Dubh sgeir is situated at the north-western edge of a flat, with depths of less than 3 fathoms (5^m5) over it, which extends about 30 6 cables east-south-eastward, and thence northward and north-eastward to the islets lying in the entrance to Strome narrows. Sgeir Ollach, lying on this flat, about 2¹/₂ cables east-south-eastward of An Dubh sgeir, dries 13 feet (4^m0).

Eilean an-t-Sratha, about 5 cables eastward of An Dubh sgeir, is 35 29 feet (8^m8) high. The group of islets in this vicinity appears from the westward as one island; Strome islands lie immediately northward of the eastern end of this group. A bank, with depths of less than 3 fathoms (5^m5) over it, extends about 1¹/₂ cables eastward from Strome islands and there is a shoal bank between that group and the northern 40 shore. A shoal, with a depth of 3 fathoms (5^m5) over it, lies close to the north-western edge of the fairway, about three-quarters of a cable south-south-eastward of the southern Strome island.

Islets and dangers in the narrows and inner part of Loch Carron.—A spit, with depths of less than 3 fathoms (5^m5) over it, 45 extends 1¹/₂ cables from the southern shore of Loch Carron narrows immediately eastward of Portchullin (*Lat. 57° 21' N., Long. 5° 35' W.*); a vessel passing this spit should keep close to the northern shore, which can be approached to half a cable.

A shoal, with a least depth of 2 fathoms (3^m7) over it, is situated in 50 the centre of the fairway of the narrows, about 1¹/₂ miles eastward of Strome islands.

Eilean an Fhraoich, situated close offshore, on the northern side of Strome narrows, at the eastern end, is 26 feet (7^m9) high; a shoal, with a depth of 4¹/₂ fathoms (7^m8) over it, lies about one cable eastward

Chart 3564.

of its southern extremity and about three-quarters of a cable offshore,
Chart 2639.

The loch, above the narrows, as far north-eastward as Slumbay island, $2\frac{1}{2}$ miles north-eastward of Eilean an Fhraoich, is free from dangers. 5

Sgeir Chreagach, about 4 cables east-north-eastward of Slumbay island, and Sgeir Fhada, 4 cables farther north-eastward, lie on an extensive shallow bank extending round the head of the loch, but their south-eastern sides are steep-to. Red rock, about midway between 10 Slumhay island and Sgeir Chreagach, is awash. The channel between Slumbay island and Sgeir Chreagach was reported, in 1933, to have shoaled considerably.

The head of Loch Carron dries out about 7 cables, and a bank with depths of less than 3 fathoms (5^m5) over it, extends in places 9 cables 15 farther.

Chart 3564.

Islands and dangers in Loch Kishorn.—A chain of islands, known as the Garra islands, islets, and rocks, extends about $9\frac{1}{4}$ cables north-north-westward from a position about 5 cables east-north- 20 eastward of Sgeir Buidhe on the eastern side of the entrance to Loch Kishorn. Kishorn island, the northern and largest island of this group, is 62 feet (18^m9) high, near its western side. There is only a boat channel on the eastern side of this group, but there is a narrow channel, with a least depth of $3\frac{1}{4}$ fathoms (5^m9) in the fairway, south- 25 eastward of Kishorn island; this latter channel is not recommended, as no leading mark can be given. Foul ground extends $1\frac{1}{2}$ cables south-south-westward from the southern end of Kishorn island. Sgeir an Tairbh, at the south-western extremity of the foul ground, dries 8 feet (2^m4). 30

From the north-western shore of Loch Kishorn foul ground and a bank, with depths of less than 3 fathoms (5^m5) over it, extend about half a cable offshore. There is no good landing on this part of the coast.

A bank, with a least depth of 8 fathoms (14^m6) over it, lies in the 35 fairway of the loch, about 9 cables north-eastward of Kishorn island (*Lat. $57^{\circ} 23' N.$, Long. $5^{\circ} 39' W.$*) and $3\frac{1}{2}$ cables from the south-eastern shore.

From abreast Achintraid village (page 551), a flat, with several rocks which dry, extends about 5 cables offshore. Sgùrr a Bhrideoin 40 Mòr, the westernmost of these rocks, dries 10 feet (3^m0); a bank, with depths of less than 5 fathoms (9^m1) over it, extends about $2\frac{1}{2}$ cables west-south-westward from this rock. A shoal, with a depth of $4\frac{1}{2}$ fathoms (8^m7) over it, lies near the head of the loch, 7 cables north-westward of Achintraid village and $2\frac{1}{2}$ cables offshore. 45

From the eastern entrance point of River Kishorn a rocky spit, which dries, extends about $1\frac{1}{2}$ cables south-south-westward; some rocks, 2 feet (0^m6) high, are situated on this spit. A bank, with depths of less than 3 fathoms (5^m5) over it, extends off the mouth of the river northward of a line drawn westward from the southern edge of this 50 rocky spit.

Charts 3564, 2639.

Submarine cables.—Beacons.—Submarine cables are laid across the eastern entrance of Strome narrows from a point on the southern

Charts 3564, 2639.

shore, immediately castward of the disused railway pier, $1\frac{1}{2}$ miles eastward of the Strome islands, northward to the opposite shore; the landing places of the cable are each marked by a beacon. *See page 7.*
5 Chart 3564.

Anchorages in Lochs Carron and Kishorn.—There is good shelter and holding ground on the southern side of the outer part of Loch Carron, about $2\frac{1}{2}$ cables east-south-eastward of the northern extremity of Rubha Mòr, in a depth of 6 fathoms (11 m 0).

- 10 Plockton harbour, a bight south-westward of Sgeir Bhuidhe, is an excellent harbour for small vessels, affording anchorage about three-quarters of a cable westward of Sgeir Bhuidhe, in a depth of about 2 fathoms (3 m 7), clay. A small vessel can be beached near the village, on the western side of the harbour, where it is flat and free from 15 rocks.*

Charts 3564, 2639.

There is good shelter from southward and westward, off Stromeferry, at the eastern end of Strome narrows, on the bank extending northward and eastward of the disused railway pier in this vicinity; the 20 holding ground is good, and the tidal streams are weak. Care should be taken to avoid the submarine telegraph cables which are laid across the narrows.

Chart 2639.

Ardnarff bay, which is entered $1\frac{1}{2}$ miles east-north-eastward of the 25 disused pier at Stromeferry (*Lat. 57° 21' N., Long. 5° 33' W.*), is the only anchorage on the south-eastern shore of the inner part of Loch Carron; the head of the bay dries out about half a cable. Temporary anchorage can be obtained here, close inshore, in a depth of about 6 fathoms (11 m 0), but the depths increase rapidly, and a vessel might 30 be driven off the bank.

Slumbay harbour, on the north-western side of the inner part of Loch Carron, on the northern side of Slumbay island, affords anchorage to small vessels, in depths of from $1\frac{1}{2}$ to 2 fathoms (2 m 7 to 3 m 7). There is a pier, which dries alongside, on the western side of the harbour, 35 off the village.

A vessel can obtain anchorage off the village of Lochcarron, about 6 $\frac{1}{2}$ cables north-eastward of the north-eastern extremity of Slumbay island, in depths of from $2\frac{1}{2}$ to 3 fathoms (4 m 6 to 5 m 5).

Chart 3564.

- 40 A vessel can obtain anchorage off the south-eastern side of Loch Kishorn, also near the head of that loch. A small vessel can obtain anchorage off the eastern side of Kishorn island.*

Charts 3564, 2639.

Directions for Lochs Carron and Kishorn.—A vessel bound up 45 Loch Carron should steer to pass about three-quarters of a mile northward of An Dubh-aird, and thence steer with the northern extremity of the shore on the southern side of Strome narrows bearing 092° and open a little southward of the raised beach at Ardaneaskan, which leads southward of the 4 $\frac{1}{2}$ -fathom (8 m 7) shoal $2\frac{1}{2}$ cables south-westward of Sgeir a Chinn, until Sgeir Buidhe bears 030°, when she should steer for it on that bearing until the raised beach at Ardaneaskan is in line with the above-mentioned extremity of the land, bearing 095° (*see view A on chart 3564*), when she should keep on this alignment until the north-eastern extremity of Sgeir Buidhe is in line with Allt:

Charts 3564, 2639.

a' Chois waterfall, bearing 319° , she should keep on this alignment astern.

This transit astern leads close north-eastward of Sgeir Golach, and about one cable south-westward of Bogha Dubh sgeir, in a least depth of 4 fathoms ($7^{m}3$), but greater depths can be obtained by bringing the waterfall open a little north-eastward of Sgeir Buidhe while passing north-eastward of Sgeir Golach. In a vessel of deep draught the north-eastern extremity of Sgeir Buidhe should not bear less than 319° while passing Bogha Dubh sgeir, in order to pass between $10\frac{1}{2}$ and $4\frac{1}{2}$ -fathom ($7^{m}8$ and $8^{m}2$) shoals westward of that rock. 5

When the point on the southern shore $5\frac{1}{2}$ cables south-eastward of Eilean an't Sratha (Lat. $57^{\circ} 21' N.$, Long. $5^{\circ} 36' W.$) is in line with the southern shoulder of Am Meallan, bearing 095° (see view B on chart 3564), the vessel can steer on this transit, until Ulluva beacon 15 is in line with the station-master's house, $1\frac{1}{2}$ miles west-south-westward, bearing 252° , which transit, astern, leads southward of the shoal bank extending southward from Eilean an't Srata. In 1953, the first of these transits was reported to be difficult to identify. 15

When the eastern end of the cutting through the point $2\frac{1}{2}$ cables eastward of Eilean na Creige Duibhe is in line with the summit of Creagdaroch, bearing 222° (see view C on chart 3564), the vessel can steer with this transit, astern, through the fairway south-eastward of Eilean an't Sratha and the islets eastward of it; in 1933, this transit was reported to be difficult to identify. When Strome islands are 25 in line with the gap between Creag nan Garadh and the hills behind Plockton, bearing 245° , and the pier-head of the disused pier at Stromeferry bears about 102° and is open northward of the southern shore, the vessel can steer eastward through the narrows, keeping about one cable from the northern shore. 30

With the in-going stream caution is necessary to avoid approaching the northern shore of the narrows too closely. With the out-going stream, which sets over the spit eastward of Portchullin, the vessel should keep close to the northern shore until Portcbullin bears about 160° . 35

The loch above Stromeferry is very little visited by shipping; the chart is a good guide, and a vessel should keep in mid-channel. A vessel without local knowledge should obtain a pilot. 35

A vessel entering Loch Kishorn should give the north-western shore a berth of about $1\frac{1}{2}$ cables, and proceed to one of the anchorages mentioned on page 558. A vessel of deep draught should approach the head of the loch with caution. 40

Chart 3564.

Plockton.—Plockton village consists of some stone houses, with a group of huts on Roinn an Fhaing, a promontory $2\frac{1}{2}$ cables southward of the northern extremity of Rubha Mòr. A stonc War memorial stands near the shore, about $1\frac{1}{2}$ cables west-south-westward of Plockton church. Two sewers extend about 600 feet ($182^{m}9$) eastward from the village. 45

The railway station is about half a mile from the village. There is a post and telegraph office at Plockton. Small quantities of provisions can be obtained here. 50

Stromeferry.—Stromeferry is situated on the southern side of Strome narrows.

Chart 3564.

There is a stone slipway for the ferry boat which plies across the narrows. There is an inn on each side of the ferry, and the ruins of Strome castle, are near the northern ferry inn.

5 Stromeferry is connected with the general railway system. There is a post and telegraph office here, which is connected with the general telephone system.

Chart 2639.

Lochcarron.—Lochcarron has a small pier projecting from the 10 shore at the north-eastern end of the village; water is laid on to the pier. Small quantities of provisions can be obtained here.

There is a post and telegraph office.

Chart 3302.

Anchorages in Inner sound.—Beacons.—Lights.—The anchorages at the southern end of Inner sound were described on page 550.

Camas na Geadraig, at the north-western end of Scalpay (*Lat. 57° 18' N., Long. 5° 58' W.*), is a shallow bight; its head dries out about half a cable. Moderate-sized vessels can obtain temporary anchorage off the entrance during southerly winds, with a cottage 20 near the beach at the head of the bight, $2\frac{1}{2}$ cables south-south-eastward of Rubh' a' Chinn Mhòir, the north-eastern entrance point, bearing 126° , and the northern extremity of Scalpay 070° , in a depth of 6 fathoms (11^m0), sand; the 3-fathom (5^m5) line is only three-quarters of a cable inside this position. Foul ground and a bank, with depths 25 of less than 3 fathoms (5^m5) over it, extend about three-quarters of a cable north-westward from Rubh' a' Chinn Mhòir.

Chart 2498.

Loch Toscaig, which is entered about one mile north-westward of Rubha na h-Uamha, on the eastern side of Inner sound, near its 30 southern end, is a narrow inlet, rather open to south-westerly winds; it has moderate depths, and the holding ground is good. The best anchorage is well up the loch, in a depth of about 10 fathoms (18^m3).

Bo Du, lying in the centre of the entrance to Loch Toscaig, and the rocks extending south-south-westward from the western entrance point 35 of the loch, are described on page 547.

Leading lights are exhibited at the head of Loch Toscaig; the front light, at an elevation of 9 feet (2^m7), situated $9\frac{1}{2}$ cables northward of Bo Du; the rear light, at an elevation of 24 feet (7^m3), nearly one cable northward of the front light. These two lights are in line 40 bearing 354° .

Poll Domhain, on the eastern side of the southern part of Inner sound, is an inlet on the eastern side of Airdban promontory, and is easy of access. The head of this inlet dries out about one cable; foul ground and a shoal bank extend a short distance offshore from both 45 sides of the inlet. An Ruadh eilean, situated in the entrance, about $4\frac{1}{2}$ cables southward of the southern extremity of Eilean nan Naomh (page 547), is an above-water and sunken reef protecting the entrance. There is a channel on either side of An Ruadh eilean, leading to an anchorage, about half a cable southward of this reef, in a depth of 50 5 fathoms (9^m1).

Poll Creadha, on the eastern side of Aird Dhubbh, a peninsula, the northern extremity of which is situated $6\frac{1}{2}$ cables north-north-eastward of the northern extremity of Airdban promontory, is a narrow inlet affording anchorage to small vessels with local knowledge, in depths

Chart 2498.

of from $2\frac{1}{2}$ to 3 fathoms ($4^m 6$ to $5^m 5$). The head of this inlet dries out about $3\frac{1}{2}$ cables.

Sgeir Ghoblach, situated in the entrance to Poll Creadha, about 3 cables eastward of the northern end of Eilean nan Naomh (Lat. $57^{\circ} 24' N.$, Long. $5^{\circ} 49' W.$), is a reef marked by a beacon, both at its northern and its southern end. There are three beacons marking rocks, lying eastward of Sgeir Ghoblach, and two beacons marking the coastal reef extending northward and north-eastward from the northern extremity of Aird Dhubb. These beacons should not be depended on. There are channels on either side of Sgeir Ghoblach, with depths of 2 fathoms ($3^m 7$), but these channels are very intricate.

Applecross bay, south-westward of Applecross church (page 548), is an open bay, unsuitable for anchorage; the head of the bay dries out about $5\frac{1}{2}$ cables. There are two small piers at the southern end of this bay, about $6\frac{1}{2}$ and $10\frac{1}{2}$ cables southward of the church. There is a row of cottages along the south-eastern shore, and the manse is situated close westward of the church. There is regular communication by sea with Kyle of Lochalsh.

Temporary anchorage can be obtained in Applecross bay anywhere along the shore, in depths of from 5 to 10 fathoms ($9^m 1$ to $18^m 3$), but the westernmost pier should be given a berth of one cable.

Charts 2551, 2498.

Directions (continued from page 542).—Inner sound is a more open and better channel than the Sound of Raasay (page 564) for a vessel bound northward from Kyle Akin.

When a vessel is in deep water and northward of the dangers in the western approach to Kyle Akin she should steer to pass about half a mile westward of Crowlin islands, and thence northward through the sound in mid-channel.

At night a vessel, after passing westward of Crowlin Islands light, should keep Rona Island light in sight, bearing not more than 358° , and when within about 3 miles of this latter light should keep in mid-channel, as directed above.

Charts 3302, 2498.

A vessel bound through the Sound of Raasay is advised to pass eastward and northward of Sgeir Thraid (page 548), and thence steer through Caol Mòr (page 546).

At night the southern limit of the white sector of Eyre Point light (page 544), between the bearings of 215° and 260° , leads northward of Sgeir Thraid.

The directions for a vessel proceeding northward through the Sound of Raasay, after passing through Caol Mòr, are given on page 573.

Charts 3421, 2498, 2551.

There is a channel south-westward of Longay (Lat. $57^{\circ} 19' N.$, Long. $5^{\circ} 53' W.$), Gulnare rock, and Sgeir Thraid. A vessel taking this route should, when northward of the dangers in the western approach to Kyle Akin, steer to pass northward of Pabay, taking care to avoid the coastal reef, the clearing mark for which was given on page 545. A berth of about a quarter of a mile should be given to the western side of Longay, and the vessel should then steer with the south-western extremity of Longay in line with Beinn na Caillich, bearing 121° , astern, which leads through the fairway of this channel.

Charts 2551, 2475, 3674, 2635.

Charts 3302, 3421, 2498, 2551.

CAOLAS SCALPAY AND LOCH NA CAIRIDH.—Beacon.—The channel between the Isle of Skye and the southern and western sides of Scalpay has a least width of $2\frac{1}{2}$ cables near its south-eastern end, about $2\frac{1}{2}$ miles west-north-westward of Rubh' an Eireannaich (page 551), where a reef extends from the Isle of Skye north-north-eastward across the channel and nearly meets a reef extending south-south-westward from the opposite shore; the south-western edge of this latter reef is marked by a small iron beacon, 6 feet (1^m8) high, surmounted by a ball. These narrows have a least depth of one foot (0^m3), and should not be attempted except by small vessels with local knowledge near high water.

Caolas Scalpay, the south-eastern part of the channel between the Isle of Skye and Scalpay, is easy of access, and has moderate depths and good holding ground. With most winds the squalls in this part of the channel are very heavy and uncertain in direction blowing from off the high cliffs and mountains on either side.

Loch na Cairidh is that portion of the channel between the Isle of Skye and Scalpay north-westward of the narrows. Loch Ainort is entered about $1\frac{1}{2}$ miles north-westward of the narrows, from the south-western side of Loch na Cairidh.

Tidal streams.—See page 550.

Chart 3421.

Island and dangers.—Between Ruhh' an Eireannaich (Lat. $57^{\circ} 15' N.$, Long. $5^{\circ} 54' W.$), and Rubha na Sgianadin, $1\frac{1}{2}$ miles west-north-westward, on the south-western side of the eastern approach to Caolas Scalpay, foul ground and a bank, with depths of less than 3 fathoms (5^m5) over it, extend about one cable offshore.

Guillamon island, on the northern side of the eastern entrance to Caolas Scalpay, about 4 cables from the south-eastern end of Scalpay, is 70 feet (21^m3) high, the north-eastern coast consisting of broken cliffs. Guillamon island is fringed by a reef, and should not be approached within one cable. Sgeir Fasair choille, which dries about 8 feet (2^m4), is situated on the southern side of Caolas Scalpay, about $1\frac{1}{2}$ cables offshore and 3 cables westward of Rubha na Sgianadin, the eastern entrance point of Camas na Sgianadin, a small shallow bay.

Chart 2551.

Reefs fringe both sides of Loch na Cairidh, south-eastward of the entrance to Loch Ainort, extending a short distance offshore.

Chart 2498.

From Maol Bàn, the north-western entrance point of Loch Ainort, a bank with depths of less than 5 fathoms (9^m1) over it, extends about 2 cables offshore.

About one mile south-south-westward of Rubh' a' Chonnaidh, the south-western entrance point of Camas na Geadaig (page 560), a bank, with depths of from $4\frac{1}{2}$ to 7 fathoms (7^m8 to 12^m8) over it, extends about 4 cables offshore.

Charts 3421, 2551.

50 Anchorage.—Beacon.—Anchorage can be obtained in Caolas Scalpay with the iron beacon on the northern side of the narrows in line with the schoolhouse on the south-western shore of Loch na Cairidh, one mile south-eastward of the south-eastern entrance point of Loch Ainort, in depths of from 5 to 6 fathoms (9^m1 to 11^m0).

Charts 2475, 3674, 2635.

Chart 2551.

Good anchorage can be obtained off the schoolhouse, in a depth of 5 fathoms (9^m1).

Loch Ainort, a narrow inlet sheltered by Scalpay (*Lat. 57° 18' N., Long. 5° 58' W.*), is surrounded by mountains of unusual shape, forming ravines through which the wind becomes concentrated into fierce and dangerous squalls and flurries which render it an unsafe place for a vessel.

Charts 3302, 2498.

Loch Sligachan.—Loch Sligachan, on the western side of the northern entrance to Loch na Cairidh, has a narrow entrance, which is encumbered by rocks and shoals extending from both shores, reducing the navigable channel to a width of about a quarter of a cable, with a least depth of 2 $\frac{1}{2}$ fathoms (5^m0) in the fairway. The loch is notorious for very heavy squalls. 15

A ferry crosses the mouth of the loch just within the entrance.

The whole of the loch affords good anchorage, so far as the depths and the nature of the bottom are concerned.

Tidal streams.—See page 550.

Aspect.—Loch Sligachan is surrounded on all sides by steep mountains. An Coileach, on the southern side of the loch, about one mile south-south-westward of Rubha Garbh, the southern entrance point, is 2,205 feet (672^m1) high. Sgurr Mhairi, 6 cables west-south-westward of An Coilcach, attains an elevation of 2,530 feet (771^m1). 20

Sconser lodge, a large cottage with a few trees around it, is situated on the southern side of the entrance, immediately within Ruhha Garbh, and a jetty extends about 90 yards (82^m3) north-north-eastward from the shore in this vicinity. 25

Rubh' an Tòrra Mhoir, the northern entrance point, 3 $\frac{1}{2}$ cables north-north-westward of Sconser lodge, is low and grassy. 30

Dangers.—Directions.—Bo Sligachan, about 4 $\frac{3}{4}$ cables north-eastward of Sconser lodge, is awash, and lies near the northern edge of a reef which extends from the southern shore, eastward of the entrance to Loch Sligachan. A bank, with depths of less than 5 fathoms (9^m1) over it, extends about 1 $\frac{1}{2}$ cables northward and 3 cables eastward from Bo Sligachan. 35

An Corran, a bank of sand and shingle, which dries, extends 2 cables south-eastward from Rubh' an Tòrra Mhoir (*Lat. 57° 19' N., Long. 6° 06' W.*). For about 4 cables north-north-eastward of Rubh' an Tòrra Mhoir this bank of sand and shingle extends from about three-quarters of a cable to 1 $\frac{3}{4}$ cables offshore, on the north-western side of the approach to Loch Sligachan. About one cable west-north-westward of the south-eastern extremity of this bank a bar, with a depth of 2 $\frac{1}{2}$ fathoms (5^m0) over it, in the fairway, stretches across the channel. 40

Foul ground and a bank, with depths of less than 3 fathoms (5^m5) over it, extend about 1 $\frac{1}{2}$ cables offshore in places. 45

Sgeir Dhubh, on the northern side of the loch, about one cable westward of Ruhh' an Tòrra Mhoir, is 2 feet (0^m6) high.

A shoal, with a least depth of 4 $\frac{1}{2}$ fathoms (7^m8) over it, is situated in the fairway of the loch, about 8 $\frac{1}{2}$ cables west-south-westward of Sgeir Dhubh. 50

The head of the loch dries out about 7 $\frac{1}{2}$ cables, exposing a flat of sand and mud, forming oyster-beds.

The western extremity of Sconser lodge in line with Sgùrr Mhairi,

Charts 2475, 3674, 2635.

Charts 3302, 2498.

bearing 215° , leads from north-eastward through the fairway of the approach to Loch Sligachan to within about $1\frac{1}{2}$ cables from the lodge, whence a vessel should steer into the loch. No vessel without local knowledge should attempt to enter.

Chart 2551.

SOUND OF RAASAY.—The sound of Raasay, between the Isle of Skye on the west, and the Islands of Raasay and Rona on the east, is, with the exception of the Narrows of Raasay, about 2 miles from its southern extremity, a wide and deep channel. It is connected with Inner sound at its southern end by Loch na Cairidh and Caolas Scalpay. Caol Mòr and Caol Rona, southward and northward, respectively, of the Island of Raasay, also connect the Sound of Raasay with Inner sound.

15 Chart 3302.

Aspect.—Immediately northward of the entrance to Loch Sligachan, on the western side of the southern entrance to the Sound of Raasay, is a grassy peninsula, with a cliffy face eastward, attaining an elevation in Tòrr Mòr, $3\frac{1}{2}$ cables north-north-eastward of Rubh' an 20 Tòrra Mhoir, of 105 feet (32^m0).

An Aird (*Lat. $57^{\circ} 21' N.$, Long. $6^{\circ} 06' 11'$.*), a peninsula, the south-eastern extremity of which is situated $9\frac{1}{2}$ cables north-north-eastward of Tòrr Mòr, is connected with the Isle of Skye by an isthmus. There is a hillock, 80 feet (24^m4) high, at the south-eastern end of this 25 peninsula.

Charts 3302, 2498, 2551.

The aspect of the Island of Raasay is described on page 546. Suisnish cottage, about one mile north-westward of Rubha na Cloiche, the southern extremity of the Island of Raasay, is a two-storied dwelling. 30 An Aird, the northern entrance point of Churchton bay, $1\frac{1}{2}$ miles north-westward of Rubha na Cloiche, is 85 feet (25^m9) high and wooded.

Raasay house stands on slightly rising ground about $3\frac{1}{2}$ cables north-eastward of the southern extremity of An Aird, and is protected from 35 northward by a wooded hill. Other buildings, including a post and telegraph office, are situated close eastward of Raasay house. The school, an Elizabethan cottage, stands near the coast $3\frac{1}{4}$ cables south-eastward of Raasay house. A knoll with a flagstaff is situated $1\frac{3}{4}$ cables south-south-westward of Raasay house.

40 Between An Aird, on the eastern side of the Sound of Raasay, and Manish point, 7 miles northward, the coast consists of sloping braes, with patches of trees and cultivation, and occasional small gravel beaches. Oskaig point, $9\frac{1}{2}$ cables northward of An Aird, is a projecting grassy headland 62 feet (18^m9) high; about $9\frac{1}{2}$ cables 45 north-north-eastward of Oskaig point and near the beach is Holoman kirk and manse, 3 cables west-north-westward of which is Holoman island, 50 feet (15^m2) high and covered with heather and grass.

Charts 3302, 2498.

The eastern coast of the Isle of Skye, from the head of Camas a' 50 Mhòr bheoil, which bay is entered close westward of An Aird, on the western side of the sound, as far northward as the head of Tianavaig bay, $2\frac{1}{2}$ miles north-north-westward, has a moderately steep slope. Numerous cottages are scattered along the braes; the school and

Charts 2475, 3674, 2635.

Charts 3302, 2498.

post office of Upper Ollach, are situated near the shore, about 7 cables west-north-westward of the northern extremity of An Aird.

Charts 1839, 2498.

Between the north-eastern entrance point of Tianavaig bay and An Tom, 2 miles northward, the coast is the base of Beinn Tianavaig, 9 cables southward of An Tom, is 1,345 feet (409^m9) high. Its cliffs as seen from the sound are remarkable, the upper parts having pinnacles and overhanging stones, and the lower parts being perforated deeply with caves. 5 10

Chart 2551.

Eilcan Fladday (*Lat. 57° 29' N., Long. 6° 02' W.*), the southern extremity of which is situated 1½ miles north-eastward of Manish point, on the eastern side of the sound, is flat-topped and 133 feet (40^m5) high. Towards its south-eastern end is a village, with a little cultivation. About 2½ cables north-north-eastward of its southern extremity it is connected with the Island of Raasay by a reef that dries. Beinn na h-Iolaire, 6¾ cables east-north-eastward of the southern extremity of Eilean Fladday, is 821 feet (250^m2) high, rocky and sterile, except for a few patches of ferns which grow in the niches of the rock. 15 20

Eilean Tigh, the north-western extremity of which is situated one mile north-north-eastward of the northern extremity of Eilean Fladday, is rugged, rocky, and 356 feet (108^m5) high. Its south-eastern end is connected with the Island of Raasay by a reef that dries, but separated from it at high water by a narrow cut a few yards wide, close to which, on Eilean Tigh, are a few cottages. 25

The Storr, a mountain, 2,353 feet (717^m2) high, with high cliffs and pillars near the top, is situated 6½ miles north-north-westward of An Tom and 1½ miles from the western side of the sound. 30

Loch Leathan waterfall, 1½ miles south-eastward of The Storr, discharges a considerable body of water from Loch Leathan over a high cliff into the sound; this waterfall is open when bearing 217°, and is visible when a vessel is over half a mile offshore and southward of Rubha nam Braithairean, 5 miles north-north-eastward of The Storr, 35 when bearing not less than 217°.

At and near Rigg burn, about 1¾ miles northward of Loch Leathan waterfall, there is some sloping grassy land terminating in low cliffs. Farther northward, near Rubha nam Braithairean, the coast consists of low cliffs showing specimens of columnar trap half-way down, and 40 terminating at the sea in steep sloping bracs.

Rubha nam Braithairean is a peninsula terminating in a pinnacle-shaped rock, on which is a dome or lump, 113 feet (34^m4) high; its peculiar character is very noticeable on north-westerly bearings.

The aspect of the Island of Rona, on the eastern side of the sound, 45 is described on page 548.

Meall nan Suireamach (page 485), on the western side of the sound, at its northern end, is the northernmost mountain in the Isle of Skye. Rubha na h-Aiseig, the north-eastern extremity of the Isle of Skye, is a rather low flat point with Beinn Volovaig, 357 feet (108^m8) high, 50 5 cables south-south-westward of it. Eilean Trodday (*Lat. 57° 43' N., Long. 6° 18' W.*), on which there is a lighthouse, 8 cables northward of Rubha na h-Aiseig, is described on page 514.

Tidal streams.—The streams are very weak but increase towards

Charts 2475, 3674, 2635.

Chart 2551.

the southern end of the sound, as the Narrows of Raasay are approached. On the average the south-going stream begins about + 0515 Stornoway (+ 0100 Dover), and the north-going stream begins about - 0045 Stornoway (- 0500 Dover); the streams begin rather earlier at the northern end of the sound and rather later at the southern end.

The streams are imperceptible in the lochs on the eastern side of the sound.

- 10 See also Table of tidal streams for station K03 in Tidal Streams European Waters, Part II, 1948.

Chart 3302.

Submarine cables.—Beacons.—A submarine power cable, indicated on the chart, is laid across the southern end of the Narrows of 15 Raasay from a position about $4\frac{1}{2}$ cables southward of the northern extremity of An Aird, on the western shore, to a position 8 cables north-westward of Rubha na Cloiche (page 564); the landing places are each marked by a beacon.

Submarine cables, indicated on the chart, cross the Narrows of 20 Raasay between a position on the eastern side of Skye, nearly $1\frac{1}{2}$ miles north-westward of the northern extremity of An Aird and a position on the opposite shore, about $1\frac{1}{2}$ miles east-south-eastward; the landing places of the cables are each marked by a telegraph beacon, 17 feet (5^m2) high. See page 7.

25 **Islets and dangers in southern part of Sound of Raasay.**—
Buoyage.—Beacons.—For about 4 cables north-north-eastward of Ruhh' an Tòrra Mhoir, on the western side of the Sound of Raasay, a bank of sand and shingle extends from about three-quarters of a cable to $1\frac{1}{2}$ cables offshore. A bank, with depths of less than 3 fathoms (5^m5) over it, extends about $2\frac{1}{2}$ cables offshore in this vicinity.

Between Tòrr Mòr and the south-eastern extremity of An Aird, a bank with depths of less than 3 fathoms (5^m5) over it, extends in places about $2\frac{1}{2}$ cables offshore; the north-eastern side of An Aird is fringed by a reef, which extends about half a cable offshore.

35 Between Rubha na Cloiche and Suisnish point, $6\frac{1}{2}$ cables west-north-westward, on the eastern side of the southern entrance to the Sound of Raasay, a reef extends about half a cable offshore, and a bank, with depths of less than 3 fathoms (5^m5) over it, about half a cable farther. Between Suisnish point and the south-eastern entrance point 40 of Churchton bay, abreast Suisnish cottage, $4\frac{1}{2}$ cables north-north-westward, the coast is fringed by a reef, and a bank, with depths of less than 3 fathoms (5^m5) over it, extends about one cable offshore.

Jackal rock, about $3\frac{1}{2}$ cables west-south-westward of Suisnish cottage (*Lat.* $57^{\circ} 21' N.$, *Long.* $6^{\circ} 04' W.$), has a least depth of 45 $2\frac{1}{2}$ fathoms (4^m1) over it, and is marked at its south western end by a red can buoy. Shoals, with least depths of $4\frac{1}{2}$ and 3 fathoms (8^m2 and 5^m5) over them, lie about $3\frac{1}{2}$ cables west south westward and $2\frac{1}{2}$ cables westward, respectively, of Suisnish cottage; a shoal, with a depth of 5 fathoms (9^m1) over it, lies close eastward of the $4\frac{1}{2}$ -fathom (8^m2) 50 shoal.

The whole of the south eastern side of Churchton bay is foul and shallow; rocks, with a depth of 3 feet (0L9) over them, lie from about one cable westward to $1\frac{1}{2}$ cables north westward of Suisnish cottage.

Rainy rocks, situated on the south western side of the channel,

Chart 3302.

about $1\frac{1}{2}$ cables north eastward of the south-eastern extremity of An Aird, are a group of rocks, some of which dry one foot (0^m3); close south-south-eastward of Rainy rocks are shoals, with a least depth of 2 fathoms (3^m7) over them. Westward of Rainy rocks, about midway between them and the shore, is a rock, 17 feet (5^m2) high, lying on the coastal reef. A vessel should give a berth of about $2\frac{1}{2}$ cables to the coast in this vicinity. 5

Charts 3302, 2498.

The western extremity of Eilean Aird nan Gobhar (see below), in line with Sgeir Chnapach (page 568), bearing 358° , leads close eastward of Rainy rocks and the shoals in that vicinity in a least depth of 7 fathoms (12^m8). 10

Chart 3302.

Penfold rock, about $2\frac{1}{2}$ cables north-north-eastward of the south-eastern extremity of An Aird, has a least depth of $1\frac{1}{2}$ fathoms (3^m2) over it, and is marked on its north-eastern side by a black conical buoy. A shoal, with a depth of $4\frac{1}{2}$ fathoms (8^m7) over it, lies about midway between Penfold rock and the coastal reef south-westward; a shoal, with a depth of $2\frac{1}{2}$ fathoms (4^m6) over it, lies about $1\frac{1}{2}$ cables east-south-eastward of the northern extremity of An Aird and about three-quarters of a cable offshore. 15 20

Foul ground and a shoal bank extend about half a cable north-north-westward from the northern extremity of An Aird.

Eilean Aird nan Gobhar (*Lat. $57^\circ 21' N.$, Long. $6^\circ 05' W.$*), about $7\frac{1}{2}$ cables north-westward of Suisnish cottage and half a cable offshore, is 25 feet (7^m6) high, and is connected with the southern extremity of An Aird by a reef, that dries. Perch rocks, two detached rocks about $1\frac{1}{2}$ cables eastward of Eilean Aird nan Gobhar, dry 8 feet (2^m4), and are each marked by a perch. A shoal, with a least depth of one fathom (1^m8) over it, is situated about one cable west-south-westward of Eilean Aird nan Gobhar. 25 30

An Aird, on the north-eastern side of the Narrows of Raasay, has foul ground and a shoal bank extending about half a cable from its western side and about three-quarters of a cable north-north-westward from its northern extremity. 35

A shoal, with a least depth of $2\frac{1}{2}$ fathoms (4^m6) over it, lies about $2\frac{1}{2}$ cables west-north-westward of Eilean Aird nan Gobhar. McMillan's rock, lying in the northern entrance to the Narrows of Raasay, about $5\frac{1}{2}$ cables west-north-westward of Eilean nan Gobhar, has a least depth of 2 feet (0^m6) over it, and is marked on its western side by a can light-huoy, painted red and exhibiting a *white group flashing* light showing *two flashes every twelve seconds*. 40

The south-western extremity of Eilean Aird nan Gobhar in line with Suisnish cottage, bearing 123° , leads close north-eastward of the $2\frac{1}{2}$ -fathom (4^m6) shoal and McMillan's rock. 45

Sgeir Dhuhh, situated on the south-western side of the fairway, about $3\frac{1}{2}$ cables north-westward of the northern extremity of An Aird, is a bare islet about 10 feet (3^m0) high; foul ground and a bank with depths of less than 3 fathoms (5^m5) over it, extend about half a cable eastward, southward, and westward from it. There is a channel with depths of from 5 to 12 fathoms (9^m1 to 21^m9) between Sgeir Dhuhh and the western shore. 50

A shoal, with a depth of 3 fathoms (5^m5) over it, lies about half a cable

Chart 3302.

from the eastern shore, $3\frac{1}{2}$ cables northward of the northern extremity of An Aird; and a shoal, with a depth of $4\frac{1}{2}$ fathoms (7^m8) over it, lies about $4\frac{1}{2}$ cables northward of the same point, and $1\frac{1}{2}$ cables offshore. Long rock, 5 cables northward of the same point and about $1\frac{1}{2}$ cables offshore, is 9 feet (2^m7) high, and is fringed by a bank, with depths of less than 3 fathoms (5^m5) over it, extending about half a cable from its western side.

Chart 2498.

- 10 Ebbing rock, about $1\frac{1}{2}$ cables north-north-westward of Oskaig point (*Lat. $57^{\circ} 22' N.$, Long. $6^{\circ} 05' W.$*), dries 8 feet (2^m4), and a shoal, with a depth of $2\frac{1}{2}$ fathoms (4^m1) lies close south-eastward of this rock. Sgeir Chnapach, about $3\frac{1}{2}$ cables north-westward of Oskaig point, is a small round rock 10 feet (3^m0) high; it is situated on a reef which dries from 2 to 11 feet (0^m6 to 3^m4); a ridge, with a least depth of 6 fathoms (11^m0) over it, joins Sgeir Chnapach and Ebbing rock. Patches, with depths of from 6 to 9 fathoms (11^m0 to 16^m5) over them, lie from about $1\frac{1}{2}$ to $2\frac{1}{2}$ cables south-westward and westward, and a bank, with a depth of 8 fathoms (14^m6) over it, lies $4\frac{1}{2}$ cables south-westward of Sgeir Chnapach.

Holomon island, about one mile northward of Oskaig point and one cable from the eastern shore, to which it is joined by a reef that dries, has foul ground extending about half a cable south-south-westward from it; a rocky spit, with a least depth of $1\frac{1}{2}$ fathoms (3^m2) over it, extends one cable north-north-westward from this island.

Charts 1839, 2498.

- For about $1\frac{1}{2}$ miles northward of Tianavaig bay, to Clach Dhuhli, 6 feet (1^m8) high, there are no dangers off-lying the western shore of 30 the sound. Pin rock, about 6 cables north-westward of Clach Dhuhli and about half a cable offshore, is 2 feet (0^m6) high. Between Clach Dhuhli and Pin rock are several rocks, which dry, extending in places about one cable offshore.

Chart 1839.

- 35 Between Pin rock and An Tom, foul ground and a bank, with depths of less than 3 fathoms (5^m5) over it, extend in places about three-quarters of a cable offshore.

*Chart 2551.***Islands and dangers in northern part of Sound of Raasay.—**

- 40 Between An Tom and Rubha nam Braithairean, about 11 miles northward there are, with two exceptions, no dangers off-lying the western shore of the sound.

Holm island, $4\frac{1}{2}$ miles northward of An Tom and about $2\frac{1}{2}$ cables offshore, is small, grassy-topped, and 89 feet (27^m1) high; the channel 45 westward of Holm island is almost completely blocked by rocks which dry. About 6 cables north-north-westward of Holm island, rocks, which dry 4 feet (1^m2), extend about $1\frac{1}{2}$ cables offshore.

Manish island, situated close off the eastern shore, about $2\frac{1}{2}$ cables south-westward of Manish point, is connected with the shore by a 50 reef that dries. A rock, with a depth of 2 feet (0^m6) over it, lies 6 cables south-south-westward of Manish island and about 2 cables offshore. Comet rock, $1\frac{1}{2}$ cables south-westward of Manish island and about three-quarters of a cable offshore, is awash.

Manish point (*Lat. $57^{\circ} 28' N.$, Long. $6^{\circ} 03' W.$*) is long and low

Charts 2551, 2475, 3674, 2635.

Chart 2551.

with more rock than herbage on it; rocks, which dry, extend about half a cable northward and north-westward from the point.

Glas eilean, about $9\frac{1}{2}$ cables north-eastward of Manish point and 3 cables offshore, is 22 feet (6^m7) high. Fraoch eilean and several rocks lie between Glas eilean and the shore south-eastward. Bo Leachan, about $4\frac{1}{2}$ cables north-westward of Glas eilean and $3\frac{1}{2}$ cables from the western side of Eilean Fladday, has a depth of 4 feet (1^m2) over it. A shoal, with a depth of $2\frac{1}{2}$ fathoms (4^m6) over it, and a shoal, with a depth of 4 fathoms (7^m3) over it, lie about $5\frac{1}{2}$ and $6\frac{1}{2}$ cables, 10 respectively, north-north-westward of Glas eilean.

Griana-sgeir, a small rocky islet, 20 feet (6^m1) high, with a grassy top, lies $7\frac{1}{2}$ cables north-north-westward of Glas eilean, and 2 cables from the western side of Eilean Fladday; its western coast is steep-to. Bo na Currachie, about 2 cables northward of Griana-sgeir, is awash. 15 Bo na Faochag, about $2\frac{1}{2}$ cables from the northern extremity of Eilean Fladday, has a depth of 6 feet (1^m8) over it.

The western extremity of the Island of Raasay, bearing 201° and open westward of Griana-sgeir, leads close westward of Bo na Faochag.

A reef extends about three-quarters of a cable northward from the 20 north-western extremity of Eilean Tigh.

Eilean Garbh, about one mile northward of the northern extremity of Eilean Tigh and about three-quarters of a cable offshore, is 124 feet (37^m8) high, and is covered with heath. A chain of rocks and islets lies close offshore, from about half a cable to $6\frac{1}{2}$ cables northward of 25 Eilean Garbh (*Lat. $57^{\circ} 32' N.$, Long. $6^{\circ} 00' W.$*).

The western side of the northern part of the Island of Rona, for about $1\frac{1}{2}$ miles from its northern end, is foul for about 2 cables offshore.

Sgeir Shuas, about $1\frac{1}{2}$ cables offshore, westward of the northern 30 extremity of the Island of Rona, is a double-headed above-water rock. A rock, with a depth of 12 feet (3^m7) over it, lies 3 cables south-westward of Sgeir Shuas, in the entrance to Loch a' Bhràige.

The rocks extending northward from the northern end of the Island of Rona are described on page 549.

Foul ground extends about $2\frac{1}{2}$ cables south-south-eastward from Rubha nam Braithairean, on the western side of the sound; Valtos rocks, about $6\frac{1}{2}$ cables north-westward of Rubha nam Braithairean and $1\frac{1}{2}$ cables offshore, dry.

Staffin island, about $3\frac{1}{2}$ miles north-north-westward of Rubha nam 40 Braithairean and 3 cables offshore, is 46 feet (14^m0) high, flat, grassy, and moderately bold, but the channel southward of it is so encumbered with rocks that it can only be used by boats.

Eilean Flodigarry, about one mile north-north-westward of Staffin island and half a mile offshore, is steep-to on its eastern side; the 45 eastern coast of this islet is a basaltic cliff, 174 feet (53^m0) high. Sgeir Eirin, lying close off the north-eastern side of Eilean Flodigarry, is a narrow bare rock, with foul ground extending about one cable north-westward and 2 cables south-eastward from it. Sgeir Eirin is covered by the green sector of Eilean Trodday light, between the 50 bearings of 322° and 062° .

Clacla nan Ràmh, about 6 cables west-north-westward of Sgeir Eirin and 2 cables offshore, dries 11 feet (3^m4); it is steep-to, and its black head generally shows. The south-western extremity of Staffin

Chart 2551.

island, bearing about 151° and just open south-westward of Eilean Flodigarry, leads close north-eastward of Clach nan Ràmh.

Northward of Clach nan Ràmh the western shore of the sound is fringed by several detached rocks or columns.

Off-lying bank.—A bank, with a depth of 8 fathoms ($14^{\text{m}}6$) over it, which, in 1945, had not been examined, lies about $3\frac{1}{2}$ miles eastward of Eilean Flodigarry.

*Chart 3302.***10 Anchorage in southern part of Sound of Raasay.—Pier.—**

Light.—Temporary anchorage can be obtained on the eastern side of the southern entrance to the Sound of Raasay anywhere off the coast, between Eyre point and Suisnish point, about $2\frac{1}{2}$ cables offshore, in depths of from 12 to 15 fathoms ($21^{\text{m}}9$ to $27^{\text{m}}4$).

15 About $1\frac{1}{2}$ cables south-eastward of Suisnish point (*Lat.* $57^{\circ} 20' N.$, *Long.* $6^{\circ} 04' W.$) is a pier with a T head, extending nearly to the 3-fathom ($5^{\text{m}}5$) line.

Balmeanach bay is entered between Tòrr Mòr and An Aird peninsula on the western side of the southern entrance to the Narrows of Raasay. **20** It affords good anchorage in the northern part of the bay, except during south-easterly winds, in depths of from 8 to 10 fathoms ($14^{\text{m}}6$ to $18^{\text{m}}3$); the best berth is with the salient point, $5\frac{1}{2}$ cables northward of Tòrr Mòr, bearing 245° , distant $1\frac{1}{2}$ cables. The southern portion of this bay is shallow, depths of 3 fathoms ($5^{\text{m}}5$), extending about **25** 2 cables offshore, and increasing suddenly to over 10 fathoms ($18^{\text{m}}3$).

Churchton bay, south-eastward of Eilean Aird nan Gobhar, on the eastern side of the Narrows, is only suitable for anchorage in summer, the squalls in winter from the mountains of the Isle of Skye being at **30** times of great violence, and even during summer it is sometimes necessary to leave.

On the south-eastern side of the knoll which is situated $1\frac{1}{2}$ cables south-south-westward of Raasay house, is a slip for boats, and on its north-western side a pier, which projects westward and affords good **35** shelter for landing during south-westerly winds, but it dries alongside.

The dangers in Churchton bay were described on page 566.

The best anchorage for small vessels in Churchton bay is with the flagstaff on the knoll bearing 353° , distant about $2\frac{1}{2}$ cables, in a depth of $5\frac{1}{2}$ fathoms ($10^{\text{m}}1$), clay and sand. Between Perch rocks and **40** Eilean Aird nan Gobhar the holding ground is also good, but this anchorage is restricted.

There is regular communication by sea with Kyle of Lochalsh and Portree. The post and telegraph office is connected with the general telephone system.

45 Camas a' Mhòr bheoil, on the western side of An Aird, on the south-western side of the Narrows of Raasay, is open to northerly winds, which send in a heavy sea; the head of the bay dries out about one cable, and a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extends about 2 cables farther northward.

50 The Bow, a narrow reef, lying in the centre of the bay with its northern end $2\frac{1}{2}$ cables south-westward of the northern extremity of An Aird (*Lat.* $57^{\circ} 21' N.$, *Long.* $6^{\circ} 06' W.$), dries 3 feet ($0^{\text{m}}9$).

Charts 3302, 2498.

A small vessel can obtain shelter during westerly or northerly winds

Charts 3302, 2498.

on the eastern side of the sound, southward of Oskaig point, between that point and Long rock.

Chart 2498.

Tianavaig bay, on the western side of the sound, affords temporary anchorage during westerly winds, in a depth of $4\frac{1}{2}$ fathoms (7^m8), sand. 5

Chart 1839.

Portree harbour.—Portree harbour, on the western side of the Sound of Raasay, lies about 20 miles southward of the northern extremity of the Isle of Skye. The harbour is the inner part of a bay, 10 which is entered between An Tom (page 565) and Rubha na h-Airde Glaise, $1\frac{1}{2}$ miles northward. The harbour is well sheltered, the Island of Raasay protecting it from easterly winds. The mountains on each side are crowned with dark trap cliffs, and as the land at the head of the bay is much lower, the entrance can be identified on a dark 15 night. With strong westerly winds violent squalls may be expected.

About $5\frac{1}{2}$ cables westward of An Tom is the mouth of Scorr burn; there is a small extent of sloping cultivated land in this vicinity. Westward of this burn the coast forms a sandy bay; Vriskaig point, the western entrance point of this bay, is a raised terrace 150 feet 20 (45^m7) high; it is steep-to on its northern and eastern sides. Loch Portree, an inlet on the western side of Vriskaig point, is filled by an extensive flat composed of sand, mud and stones, which dries.

Tidal streams.—The streams in Portree harbour are imperceptible.

See page 549.

25

Regulation.—Ashes must not be discharged into the harbour westward of a line drawn south-eastward from Sgeir Mhòr (*see below*).

Light.—A light is periodically exhibited, at an elevation of 22 feet (6^m7), from a post, situated on the pier-head at the head of the harbour.

Dangers.—The southern shore of the bay, in the entrance to 30 Portree harbour, is fringed by a reef, and a bank, with depths of less than 3 fathoms (5^m5) over it, extends in places about three-quarters of a cable offshore. Scorr skerry, close offshore, about $5\frac{1}{2}$ cables westward of An Tom (*Lat. $57^{\circ} 24' N.$, Long. $6^{\circ} 08' W.$*), dries.

Viewfield house stands on rising ground 7 cables westward of Vriskaig 35 point, and is partly surrounded by a plantation; this house bearing 268° and well open northward of Vriskaig point, leads northward of Scorr skerry and the shoal bank extending from the southern shore.

The northern shore is also fringed by a reef.

Viewfield rock, about one mile south-westward of Rubha na h-Airde 40 Glaise and three-quarters of a cable offshore, has a depth of less than 6 feet (1^m8) over it. Sgeir Mhòr, about a quarter of a mile farther south-westward and half a cable from the northern shore, to which it is joined by a reef, which dries, is a black rock 8 feet (2^m4) high.

Anchorages.—Directions.—In 1934, H.M.S. *Harebell* found an-45 chorage, with good holding ground, with the pier-head bearing 278° , distant 7 cables.

In 1953, H.M.S. *Cook* found fairly good anchorage, in a depth of 20 fathoms (36^m6), with the pier-head light structure bearing 290° , 50 distant $5\frac{1}{2}$ cables, but it was not sheltered from the northerly swell.

The opening between the high land on each side of Portree harbour shows by day or at night, and a vessel should steer in giving both shores in the entrance a berth of 2 cables.

Portree.—Pier.—The town of Portree is situated at the head of the

Chart 1839.

harbour, the houses being built both on the shore and on the brae above, where they are partially obscured by trees. Portree (*Lat. 57° 24' N., Long. 6° 11' W.*) is the capital of the Isle of Skye, and had a population of 1766 in 1951. The exports are cattle and sheep, and the principal imports coal and salt.

The pier, on the north-eastern side of, and protected by Meall na h Acairseid, has depths of from 3 to 5 feet (0^m9 to 1^m5) alongside; the bottom is smooth, and a vessel can take the ground with safety.

- 10 Portree lodge is situated on a hill, 62 feet (18^m9) high, 4½ cables north-westward of Sgeir Mhòr. Meall na h Acairseid, a projecting bluff, 120 feet (36^m6) high, is close southward of the town; it is wooded and on it stands an ornamental tower.

Communications.—There is regular communication by sea with 15 Mallaig, via Kyle of Lochalsh, with the Outer Hebrides, and with Loch Inver. There is a regular motor coach service with Kyleakin.

There is a post and telegraph office at Portree, which is connected with the general telephone system.

- 20 **Life-saving.**—A line-throwing apparatus is stationed at Portree. See page 9.

Port facilities.—Small quantities of provisions and ship's stores can be obtained here. Water is laid on to the pier.

A moderate quantity of coal can be obtained.

Chart 2551.

- 25 **Anchorages in northern part of Sound of Raasay.—Beacon.**—Loch Arnish, on the eastern side of the sound, is entered between Manish point and Ard an Torrain, 9 cables east-north-eastward. It is open north-westward, is too deep for anchorage, and the bottom is rocky and uneven.

- 30 A rocky spit, with a depth of 6 feet (1^m8) over it, extends about 1½ cables north-eastward from the southern shore of the loch, about 5 cables east-south-eastward of Manish point.

Trees and cultivated patches skirt the eastern shore of the loch, and Arnish village stands on the rising ground above.

- 35 Fladday harbour, on the eastern side of the southern end of Eilean Fladday, is a narrow inlet affording secure anchorage, in depths of from 3' to 10 fathoms (5^m5 to 18^m3). It is approached from south-westward, between Ard an Torrain (*Lat. 57° 28' N., Long. 6° 02' W.*) and Fraoch eilean; this channel is about half a cable wide, with a least 40 depth of 3 fathoms (5^m5), but should not be attempted without local knowledge.

- Acairseid Mhòr, the principal entrance to which is south-eastward of Eilean Garbh, on the western side of the Island of Rona, has a very narrow entrance, with depths of from 2 to 6 fathoms (3^m7 to 45 11^m0), but inside there is more room with good anchorage. There is a channel northward of Eilean Garbh, but it is difficult to make out; there are rocks, which dry, on the northern side of this entrance, and rocks also extend about half a cable north-eastward from the north-eastern side of Eilean Garbh.

- 50 A vessel without local knowledge should not enter this harbour except in case of necessity; the entrance is very blind, as Eilean Garbh is similar in appearance to the adjacent land.

A rock, which dries 9 feet (2^m7), is situated in the fairway, about one cable north-eastward of the eastern extremity of Eilean Garbh.

Chart 2551.

A small solitary cottage on the north-western side of the harbour, $5\frac{1}{2}$ cables north-eastward of the eastern extremity of Eilean Garbh, bearing 040° and just open south-eastward of the north-western shore of Acairseid Mhor (*see* view facing page 548), leads through the fairway south-eastward of Eilean Garbh and close south-eastward of the rock which dries 9 feet (2^m7), one cable east-north-eastward of which there is anchorage in a depth of $3\frac{1}{2}$ fathoms (6^m4), mud. Small craft can anchor near the head of the harbour, in a depth of 2 fathoms (3^m7), sheltered from wind and sea. 10

Acairseid Thioram (*Lat. $57^\circ 33' N.$, Long. $5^\circ 59' W.$*), the southern entrance point of which is situated $6\frac{1}{2}$ cables northward of Eilean Garbh, is a bay on the western side of the Island of Rona and is unsuitable for anchorage, but shelter can be found for boats in the north-eastern corner of the bay, where there is a small village of the same name. 15

Loch a' Bhraige, a bight on the western side of the northern end of the Island of Rona, is open north-north-westward.

Sgeir Shuas, on the north-eastern side of the entrance to Loch a' Bhràige, and the rock, with a depth of 12 feet (3^m7) over it, 3 cables south-westward, are described on page 569. 20

When entering the loch a vessel should give its north-eastern shore a wide berth, as several rocks lie nearly one cable off it, and should anchor, in a depth of 10 fathoms (18^m3), one cable from the south-western shore, with Rona lighthouse bearing about 070° .

There is a small pier in a cove on the eastern side of Loch a' Braige, about $1\frac{1}{2}$ cables west-south-westward of Rona lighthouse. 25

Staffin bay, westward of Staffin island (page 569), is open northward, and much swell sets in; the large smooth boulders on the shore make landing difficult. The best anchorage is abreast the middle of the island, about 2 cables offshore, in depths of from 5 to 7 fathoms (9^m1 to 30^m8), mud. There is a telegraph beacon at the head of the bay, about one mile west-south-westward of Staffin island.

There is communication by sea with Portree and Gairloch.

Kilmaluag bay is entered about 8 cables south-south-eastward of Rubha na h-Aiseig (page 514); it affords anchorage to small vessels during westerly winds, in depths of from 3 to 5 fathoms (5^m5 to 9^m1), sand. A reef fringes the southern side and the head of the bay. A rock, which dries, is situated about one cable north-westward of the southern entrance point, and a sunken rock lies on the northern side of the bay, near its head. 40

Charts 3302, 2498.

Directions (continued from page 561).—A vessel entering the Sound of Raasay from Caol Mòr should keep about 3 cables from the southern and western coasts of the Island of Raasay.

A vessel should pass westward of Jackal Rock buoy; the western extremity of Eilean Aird nan Gobhar in line with Sgeir Clinapach, bearing 358° , leads eastward of Rainy rocks. This transit should be held until the schoolhouse at Upper Ollach bears 282° and is just open northward of the northern extremity of An Aird.

The vessel should then steer to pass northward of Penfold rock and between Sgeir Dhubh and McMillan's rock; a large vessel should not pass eastward of McMillan's rock, on account of the $2\frac{1}{2}$ -fathom (4^m6) shoal lying in the fairway. After passing McMillan's rock she should steer through the sound to abreast Portree. 50

Chart 2551.

A vessel continuing northward through the sound should, from abreast Portree, steer for a position about $1\frac{1}{2}$ miles eastward of Rubha nam Braithairen. At night Holm is and is difficult to distinguish under the high land. Rona light is not visible when bearing less than 050° , which line of bearing passes close north-westward of the rocks abreast Loch Leathan waterfall.

Chart 2638.

LOCH TORRIDON.—Loch Torridon is entered between Rubha na Fearn (*Lat. $57^\circ 35' N.$, Long. $5^\circ 49' W.$*) (page 549) and Red point, 3 miles northward; the central part of the loch is named Loch Shieldaig, above which the loch is known as Upper Loch Torridon.

The channel leading from Loch Shieldaig to Upper Loch Torridon is about 2 cables wide, but both shores are steep-to, and there are 15 depths of from 11 to 13 fathoms (20^m1 to 23^m8) in the fairway.

Aspect.—Rubha na Fearn has an undulating outline, and the south-western shore of the loch, between this point and Ardheslaig, a peninsula $3\frac{1}{2}$ miles east-south-eastward, is indented by a number of small creeks and bays, which are too open for anchorage. Ardheslaig rises to a hill of irregular outline, 279 feet (85^m0) high, $4\frac{1}{2}$ cables south-south-eastward of its northern extremity, and the isthmus connecting it with the mainland southward is low, narrow, and cultivated.

Red point is 120 feet (36^m6) high and the termination of slightly 25 sloping land; on its eastern side is a sandy bay.

The north-eastern shore of the loch between Red point and Rubha na h-Airde, $5\frac{1}{2}$ miles south-eastward, is barren and bleak; the peninsula, of which Rubha na h-Airde is the northern extremity, is rugged and rocky, and attains an elevation of 460 feet (140^m2).

Between Rubha na h-Airde and Rubha na h-Airde Glaist, about 2 miles south-eastward, the north-eastern shore of Loch Shieldaig is rocky and indented. Rubha na h-Airde Glaise (*Lat. $57^\circ 33' N.$, Long. $5^\circ 40' W.$*) is the north-western entrance point of the channel leading to Upper Loch Torridon.

35 The Upper loch is surrounded by hills and mountains.

Tidal streams.—The streams are very weak except in the narrows between Loch Shieldaig and Upper Loch Torridon, where the in-going stream begins about — 0610 Stornoway (+ 0200 Dover), and the out-going stream begins about — 0010 Stornoway (- 0425 Dover); 40 the spring rate in each direction is about 2 knots. See also Table of tidal streams for station K03 in Tidal Streams European Waters, Part II, 1948.

Islets, dangers, and banks.—Sgeir Ghlas, on the north-eastern side of the entrance to Loch Torridon, about 4 cables east-south-eastward of Red point, is 4 feet (1^m2) high. Foul ground and a bank, with depths of less than 3 fathoms (5^m5) over it, extend about three-quarters of a cable southward and one cable westward from Sgeir Ghlas. About $2\frac{1}{4}$ cables north-eastward of Sgeir Ghlas and about three-quarters of a cable offshore, at the edge of the coastal reef, is 50 an above-water rock named Eilean Tioram.

Sgeir na Trian, in the entrance to the loch, about $1\frac{1}{2}$ miles south-south-eastward of Red point, is a rock 7 feet (2^m1) high; foul ground and a shoal bank extend half a cable eastward, and three-quarters of a

Chart 2638.

cable southward and north-north-westward from it; a shoal, with a depth of 13 feet (4^m0) over it, lies $4\frac{1}{2}$ cables south-south-eastward of Sgeir na Trian. Sgeir na Trian and this 13-foot (4^m0) shoal are situated on a bank, with depths of from 31 feet to 20 fathoms (9^m1 to 36^m6) over it.

A bank, with depths of from 50 feet to 20 fathoms (15^m2 to 36^m6) over it, lies from about $8\frac{1}{2}$ cables to 2 miles south-south-eastward of Sgeir na Trian. About 3 miles south-eastward of Sgeir Ghlas, and from $1\frac{1}{2}$ to $3\frac{1}{4}$ cables offshore, are patches with depths of from 32 to 10 60 feet (9^m8 to 18^m3) over them.

A rock, which dries 6 feet (1^m8), is situated close offshore, on the north-eastern side of the loch, about $1\frac{1}{2}$ miles north-westward of Rubha na h-Airde.

Sgeir a' Ghair, extending about $1\frac{1}{2}$ cables north-eastward from Ruhha na Fearn, is one foot (0^m3) high.

Sgeir Dhubb, situated on the south-western side of the loch, about 2 miles south-eastward of Rubha na Fearn and one cable offshore, dries 15 feet (4^m6). A bank, with depths of less than 5 fathoms (9^m1) over it, extends about $1\frac{1}{2}$ cables north-north-eastward from Sgeir Dhubb. Eilean Mòr, lying about half a cable offshore, $2\frac{1}{2}$ miles south-eastward of Rubha na Fearn (*Lat.* $57^{\circ} 35' N.$, *Long.* $5^{\circ} 49' W.$), is 88 feet (26^m8) high.

Sgeir Dughall, on the north-eastern side of the loch, about 7 cables north-westward of Rubha na h-Airde and about 2 cables offshore, consists of two above water rocks, with a shoal bank extending about three-quarters of a cable westward and northward from them; the higher of these rocks is 20 feet (6^m1) high. About 2 cables north-westward of Ruhha na h-Airde is a shoal, with a depth of 25 feet (7^m6) over it, and between this shoal and Sgeir Dughall are patches, with depths of 51 and 60 feet (15^m5 and 18^m3) over them. Foul ground extends about one cable northward from Rubha na h-Airde.

Dubh sgeir, about $2\frac{1}{2}$ cables from the north-western side of Ardheslaig peninsula, is a small rock 5 feet (1^m5) high; a rock, with a depth of less than 6 feet (1^m8) over it, is situated half a cable north-north-westward, and a rock awash about $1\frac{1}{2}$ cables east-north-eastward of Dubh sgeir. Rocks, which dry from 5 to 11 feet (1^m5 to 3^m4), lie close off the north-western end of the Ardheslaig peninsula.

Sgeir Ghlas, on the south-western side of the loch, about $4\frac{3}{4}$ cables south-eastward of Eilean Mòr, lies close offshore on the coastal reef; foul ground, which dries 9 feet (2^m7), extends about one cable east-north-eastward from it.

Islets, dangers, and banks in Loch Shieldaig.—Dora rock, on the western side of Loch Shieldaig, about $1\frac{1}{2}$ miles south-south-eastward of the northern extremity of Ardheslaig peninsula and one cable offshore, has a depth of less than 6 feet (1^m8) over it. South-eastward of Dora rock are several islets and rocks, extending about $2\frac{1}{2}$ cables offshore.

Shieldaig island, the north-western extremity of which is situated about one mile southward of Rubha na h-Airde Glaise, is 134 feet (40^m8) high; foul ground and a bank, with a depth of 33 feet (10^m1) at its outer end, extend about $1\frac{1}{2}$ cables north-westward from its north-westward end. Between the south-eastern end of Shieldaig island and the mainland south-eastward there is a narrow shallow

Chart 2638.

channel, with a least depth of 9 feet (2^m7) in the fairway. A shoal, with a depth of 33 feet (10^m1) over it, lies about $2\frac{1}{2}$ cables south-south-westward of the south-eastern extremity of Shieldaig island (*Lat.* $55^{\circ} 57' 32'' N.$, *Long.* $5^{\circ} 39' W.$) and about $1\frac{1}{2}$ cables from the south-western shore of the loch.

Sgeir Dhubb, situated near the head of the loch, about 5 cables south-south-eastward of the south-eastern extremity of Shieldaig island, dries 9 feet (2^m7).

10 The head of Loch Shieldaig dries out about 2 cables.

Islet, dangers, and bank in Upper Loch Torridon.—Eilean a' Chaoil, on the southern side of the channel connecting Loch Shieldaig and Upper Loch Torridon, about $3\frac{1}{2}$ cables east-south-eastward of Rubha na h-Airde Glaise, is 92 feet (28^m0) high, and is connected with *15* the shore by a reef which dries; a spit extends about half a cable north-eastward from its north-eastern side.

The southern shore of Upper Loch Torridon is fringed by a reef which extends, in places about one cable offshore. Foul ground and gravelly spits fringe the northern shore of the loch, especially off the *20* mouths of burns, where shoal banks extend about 2 cables offshore, outside which the depths are rather great, so there is no good anchorage off that shore.

On the southern side of the loch, about one cable east-south-eastward of Eilean a' Chaoil, a spit, awash, extends about $1\frac{1}{2}$ cables north-eastward from the shore. About $7\frac{1}{2}$ cables east-south-eastward of Eilean a' Chaoil, at the edge of the coastal reef, about one cable offshore, is a rock, which dries 8 feet (2^m4).

A shoal, with a least depth of 9 feet (2^m7) over it, is situated on the southern side of the loch, about $1\frac{1}{2}$ cables north-north-eastward of *30* Rubha Molach Mòr, a point $2\frac{1}{4}$ miles east-south-eastward of Eilean a' Chaoil.

On the northern side of the loch, about $3\frac{1}{2}$ miles eastward of Rubha na h-Airde Glaise, foul ground and a shoal bank extend about 2 cables offshore.

35 River Torridon flows into the head of the loch, which dries out about $3\frac{1}{2}$ cables, and a bank, with depths of less than 3 fathoms (5^m5) over it, extends about 5 cables farther.

Anchorages.—Loch Diabaig, a bay on the north-eastern side of Loch Torridon, is entered northward of Rubha na h-Airde. It is *40* not a safe anchorage with winds from between west and north-west as there is little shelter, and the depths are rather great, except right at the head of the bay. The dangers in the entrance to this bay are described on page 575.

Loch a' Chracaich, which is entered between Sgeir Ghlas and Dubh *45* sgeir, on the south-western side of Loch Torridon, is the best anchorage in this loch, as it is protected from the swell. The best berth is about 2 cables south-south-westward of the north-western entrance point and $1\frac{1}{2}$ cables offshore, in a depth of 17 fathoms (31^m1), mud. Foul ground and a bank, with depths of less than 3 fathoms (5^m5) *50* over it, extend about one cable northward from the head of Loch a' Chracaich.

Small quantities of provisions might be obtained at Arinacrinachd, a village on the south-western shore of Loch Torridon, about one mile west-north-westward of Loch a' Chracaich.

Chart 2638.

Loch Beag, a narrow inlet on the western side of the head of Ardheslaig peninsula, is used by fishing vessels during the summer.

A vessel can anchor southward of Shieldaig island, in depths of from 10 to 13 fathoms (18^m3 to 23^m8), but the bottom is soft mud, through which the anchor easily drags.

Shieldaig village is situated on the shore, south-eastward of Shieldaig island, at the foot of Beinn Shieldaig, a steep solitary mountain which attains an elevation, one mile east-south-eastward of Shieldaig island, of 1,683 feet (513^m0). A war memorial stands in the northern part of the village, 3 cables east-north-eastward of the south-eastern extremity of Shieldaig island. There is a post and telegraph office here. Small quantities of provisions might be obtained at Shieldaig.

On the southern shore of Upper Loch Torridon are several small bays, and anchorage can be obtained off most of them in moderate depths.

The best anchorage in Upper Loch Torridon for small vessels is near the head of the loch, about 5 cables east-north-eastward of Sròn an Dubh-airde, a point on the southern shore 8½ cables east-north-eastward of Rubha Molach Mòr, and 3½ cables from the southern shore, in a depth of about 13 fathoms (23^m8).

There is a pier, which dries alongside, on the northern side of the loch, about 1½ miles from its head.

Directions.—A vessel approaching from southward or westward should be careful to avoid Murchadh Breac and the rocks in that vicinity, the clearing marks for which are given on page 549.

A vessel approaching from northward should steer to pass about three-quarters of a mile south-westward of Sgeir na Trian (*Lat. 57° 37' N., Long. 5° 48' W.*) so as to avoid the shoal with a depth of 13 feet (4^m0) over it, lying 4½ cables south-south-eastward of Sgeir na Trian, and thence steer up the loch.

If bound for Loch a' Chracaich she should pass westward of Dubh sgeir, giving Sgeir Ghlas a berth of about 2 cables, and anchor as directed above.

A vessel bound to Shieldaig should, after passing north-eastward of Ardheslaig peninsula, steer to pass westward of Shieldaig island, and anchor with the inn, which is the southern house of Shieldaig village, bearing 070°, in a depth of about 13 fathoms (23^m8), mud.

Chart 2509.

Coast.—Between Red point (page 574) and Sròn na Carra, about 3½ miles northward, there are no dangers beyond one cable offshore. A bank, with depths of less than 5 fathoms (9^m0) over it, extends in places about 1½ cables offshore.

Chart 2551.

Tidal streams between the north-eastern coast of the Isle of Skye and the mainland.—The stream is very weak and more or less rotatory clockwise. At a position in mid-channel 6 miles 341° from Rona lighthouse, the south-going stream, spring rate 0·2 knot, begins about + 0340 Stornoway (- 0035 Dover) and runs in directions which change irregularly from about east, through south, to about west; the north-going stream, spring rate 0·3 knot, begins about - 0200 Stornoway (+ 0610 Dover) and runs in directions which change gradually from about west, through north, to about east.

Weak streams probably run south-south-eastward and north-north-

Chart 2551.

westward along the coast of Skye between Rubha nam Braithairean and Rubha na h-Aiseig, and southward and northward along the mainland coast between Longa island and Rubh' Ré (page 581) beginning about as in mid-channel. Northward of Rubha na h-Aiseig the east-going stream begins — 0355 Stornoway (+ 0415 Dover), and the west-going stream begins + 0230 Stornoway (- 0145 Dover); the spring rate in each direction is about 2·5 knots. Northward of Rubh' Ré the east-going stream begins — 0340 Stornoway (+ 0430 Dover),
 10 and the west-going stream begins + 0300 Stornoway (- 0115 Dover); the spring rate in each direction is about 3 knots. The streams which run close inshore round the points are not known. Between Rubha na h-Aiseig and Rubh' Ré the streams are probably very much weaker than off the points.

15 Off Rubh' Ré the north-east-going stream begins — 0340 Stornoway (+ 0430 Dover), the south-west-going stream begins + 0300 Stornoway (- 0115 Dover); the spring rate in each direction is about 3 knots. The streams lose strength quickly north-eastward of Rubha na h-Aiseig and south-westward of Rubh' Ré and are very weak midway
 20 between the points.

Charts 3441, 2509.

Loch Gairloch.—Loch Gairloch is entered between Sròn na Carra and Ruhha Bàn, $3\frac{1}{4}$ miles north-north-westward. With the exception of Nares rock (page 579) the outer part of the loch is free from dangers.
 25 Rubha Bàn (*Lat. 57° 45' N., Long. 5° 49' W.*) attains an elevation, about one mile inland, of 407 feet (124^m0).

There are several anchorages at the head of the loch; as the depths within the 10-fathom (18^m3) line around the loch shoal rapidly a vessel without local knowledge should approach these anchorages with care,
 30 and at night should not get into depths of less than 20 fathoms (36^m6).

Loch Shieldaig is the name given to the head of Loch Gairloch, at its south-eastern end.

Communications.—There is regular communication by sea with Staffin bay, and thence *via* Portree with Kyle of Lochalsh and the
 35 mainland southward. There is also communication by sea, with Loch Ewe.

Tidal streams.—The in-going stream begins about — 0610 Stornoway (+ 0200 Dover), and the out-going stream begins about — 0010 Stornoway (- 0425 Dover); the streams are very weak in
 40 the middle of the loch but attain spring rates in both directions of about one knot between Longa island and the land from 0·2 to 0·5 knot near the land on both sides of the loch, and from 0·5 to 0·8 knot in the channel between Eilean Horrisdale and the land.

Life-saving.—A line-throwing apparatus is maintained at Gairloch loch; see page 9.

Submarine cables.—**Beacon.**—Vessels are warned not to anchor in an area, the limits of which are indicated by pecked lines on the chart, on account of the existence of submarine cables. (See page 7.) The landing place of the cable is marked by a beacon.

50 **Islands and dangers.**—Longa island, on the northern side of the entrance to Loch Gairloch, is covered with grass and heather, and attains an elevation of 222 feet (67^m7). About 2 cables within the western end of the island it is almost divided by a low neck of land. It is separated from the mainland by Caolas Beag.

Charts 3441, 2509.

A bank, with depths of less than 5 fathoms ($9^{\text{m}}1$) over it, extends about $1\frac{1}{4}$ cables westward from the south-western extremity of Longa island, and a shoal, with a depth of $4\frac{1}{2}$ fathoms ($8^{\text{m}}7$) over it, lies about a quarter of a cable farther westward. The western coast of Longa island is foul for about three-quarters of a cable offshore. The reef which fringes Longa island extends about half a cable eastward from its north-eastern extremity, and a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extends about 3 cables farther east-south-eastward. 5

About 6 cables south-south-eastward of Rubha Bàn a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extends about $2\frac{1}{2}$ cables offshore on the northern side of Caolas Beag. Abreast the north-eastern extremity of Longa island the coastal reef extends about $1\frac{1}{2}$ cables offshore, and a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extends about one cable farther south-westward, leaving a very narrow channel, with a least depth of $3\frac{1}{2}$ fathoms ($5^{\text{m}}9$), between the shoal bank extending from the eastern end of Longa island and that extending from the north-eastern shore of Caolas Beag. 10

Nares rock (*Lat. $57^{\circ} 42' N.$, Long. $5^{\circ} 47' W.$*), on the southern side of the loch, $5\frac{1}{2}$ cables north-eastward of Sròn na Carra and $2\frac{1}{2}$ cables offshore, has a least depth of 3 fathoms ($5^{\text{m}}5$) over it. 20

Eilean Horrisdale, on the south-western side of the loch, about $2\frac{1}{2}$ miles east-north-eastward of Sròn na Carra and $1\frac{1}{2}$ cables offshore, is 119 feet ($36^{\text{m}}3$) high. A rock, with a depth of less than 6 feet ($1^{\text{m}}8$) over it, lies about half a cable north-north-westward of the north-western extremity. Several rocks and shoals lie off the northern side of Eilean Horrisdale; the northernmost of these shoals, with a depth of 3 fathoms ($5^{\text{m}}5$) over it, lies $1\frac{1}{2}$ cables northward of the northern extremity of the island. 25

Chart 3441.

Glas eilean, about $3\frac{1}{2}$ cables north-north-eastward of the north-eastern extremity of Eilean Horrisdale, is 24 feet ($7^{\text{m}}3$) high and conspicuous. A bank, with a depth of 8 fathoms ($14^{\text{m}}6$) over it, lies about $1\frac{1}{2}$ cables north-north-eastward, and a shoal, with a depth of $4\frac{1}{2}$ fathoms ($8^{\text{m}}2$) over it, about three-quarters of a cable southward of this islet. 30

Between Eilean Horrisdale and Fraoch eilean, about 5 cables east-south-eastward, there are several rocks and shoals; amongst these rocks may be mentioned Sgeir Dhuhb Beag, Sgeir Dhuhb Mòr, and Well rock. 35

Fraoch eilean, 34 feet ($10^{\text{m}}4$) high, lies about $1\frac{1}{2}$ cables from the southern shore of the loch; it is covered with heather and conspicuous. Foul ground, which dries from 2 to 5 feet ($0^{\text{m}}6$ to $1^{\text{m}}5$), extends about one cable south-south-westward from its southern end. 40

There is a channel, free from dangers, with a least depth of 11 fathoms ($20^{\text{m}}1$) in the fairway, westward of Fraoch eilean.

A rock, which dries one foot ($0^{\text{m}}3$), is situated close offshore about a quarter of a cable westward of the eastern entrance point of Loch Shieldaig. 45

Eilean an t Sabhail, situated in the centre of Loch Shieldaig, about 3 cables south-eastward of Fraoch eilean, is covered with heather, and is 19 feet ($5^{\text{m}}8$) high. Foul ground and a shoal bank surround this islet extending about half a cable offshore. There is a least

50

Chart 3441.

depth of 5 fathoms (9^m1) in the fairway eastward of Eilean an t Sabhail.

Eilean Shieldaig, lying three-quarters of a cable south-south-eastward of Eilean an t Sabhail, is covered with low trees and bushes, and is 38 feet (11^m6) high. Foul ground and a shoal bank lie between Eilean Shieldaig and the mainland southward.

Anchorages.—Directions.—Small vessels can anchor, during southerly gales, northward of Longa island, but they should proceed eastward through Caolas Beag should the wind veer westward.

- 10 H.M.S. *Stuart*, in 1932, anchored 7 cables east-south-eastward of the summit of Longa island, and found good holding ground and good shelter during a north-westerly gale.

Port Henderson, which is entered about half a mile eastward of Sròn na Carra, on the southern side of the loch, is a small bay, the head of which dries out about three-quarters of a cable; a bank, with depths of less than 3 fathoms (5^m5) over it, extends about three-quarters of a cable farther offshore.

Caolas Bad a Chrotha, on the western side of Eilean Horrisdale (*Lat.* $57^{\circ} 42' N.$, *Long.* $5^{\circ} 43' W.$), affords well-sheltered anchorage, much frequented by small vessels; there is a fish-curing station here. A vessel can enter this channel either westward, or southward of Eilean Horrisdale, but only the former entrance should be used by vessels without local knowledge. About $1\frac{1}{2}$ cables south-south-eastward of Rubha na Moine, the western entrance point of the western entrance, foul ground and a bank, with depths of less than 3 fathoms (5^m5) over it, extend about three-quarters of a cable eastward; a rock, 2 feet (0^m6) high, near the eastern edge of this shoal area, marks the western side of the fairway, which has a depth of $3\frac{1}{2}$ fathoms (6^m4) over it.

- 30 The anchorage is about three-quarters of a cable south-eastward of the rock 2 feet (0^m6) high in a depth of 3 fathoms (5^m5), mud, but it is obstructed by a pinnacle rock, with a depth of 4 feet (1^m2) over it, situated half a cable south-south-eastward of the rock 2 feet (0^m6) high. A vessel 150 feet (45^m7) long has room to swing if tautly moored.

- 35 Small craft can anchor or moor farther up the channel, south-eastward of Sgeir Ghlas, an islet, 10 feet (3^m0) high, situated about $1\frac{1}{2}$ cables south-south-eastward of the rock 2 feet (0^m6) high.

Badachro village, on the south-western shore of Caolas Bad a Chrotha, has a post and telegraph office. A small quantity of meat may be obtained here.

Strath bay, the southern entrance point of which, Sròn na h-Airde, is situated $4\frac{1}{2}$ cables eastward of Glas eilean, is a wide bay on the northern side of the loch, but being entirely unprotected from westward is unsuitable for anchorage.

- 40 The village of Strath Gairloch stands on the northern shore of Strath bay; a small quantity of fresh meat may be obtained here.

There is a conspicuous church on the north-eastern side of the bay near the beach, about one mile northward of Sròn na h-Airde. Gairloch hotel, $4\frac{1}{2}$ cables south-south-eastward of this church, another church about one cable southward of the hotel, and Cairn cottage about $1\frac{1}{2}$ cables north-north-westward of the hotel are conspicuous.

Birds Nest anchorage, between Sgeir Dhùibh Beag and Sgeir Dhùibh Mòr, on the west, and Well rock, on the east, affords anchorage with the eastern extremity of Eilean Horrisdale (*Lat.* $57^{\circ} 42' N.$, *Long.*

Chart 3441.

$5^{\circ} 43' W.$) bearing 346° and the southern extremity bearing 265° , in a depth of 12 fathoms (21^m9), mud.

Flowerdale bay, the northern entrance point of which, Seana chreag, is situated $1\frac{1}{2}$ cables south-eastward of Sròn na h-Airde, has very restricted anchorage, and the depths decrease suddenly from 14 to 6 fathoms (25^m6 to 11^m0). When entering this bay a vessel should give Seana chreag a berth of one cable, and anchor with the south-western extremity of this point in line with the north-eastern extremity of Glas eilean, bearing 293° , and the south-eastern corner of the pier, $2\frac{1}{2}$ cables east-north-eastward of Seana chreag, bearing about 050° , in a depth of 8 fathoms (14^m6); a good deal of swell is felt during westerly winds.

The pier, 260 feet (79^m2) long, has a depth of 13 feet (4^m0) alongside its western end, about 6 feet (1^m8) near the centre of the pier, $1\frac{1}{2}$ and almost dries at its eastern end.

The village of Gairloch, where a small quantity of fresh bread may be obtained, is situated at the head of Flowerdale bay. There is a conspicuous post and telegraph office at Gairloch village.

Loch Kerry, the southern entrance point of which, Rubha nan Eanntag, is situated about 6 cables south-south-eastward of Seana chreag, affords anchorage about $1\frac{1}{2}$ cables north-north-eastward of Ruhba nan Eanntag, in a depth of 5 fathoms (9^m1), sand, but a considerable swell sets in during north-westerly gales. The depths in the entrance to Loch Kerry decrease suddenly from about 16 to 6 fathoms (29^m3 to 11^m0).

A rock, with a depth of 5 feet (1^m5) over it, is situated about $1\frac{1}{2}$ cables east-north-eastward of Rubha nan Eanntag.

Camas na h Airidhe, on the southern side of Loch Gairloch, affords anchorage about $1\frac{1}{2}$ cables west-south-westward of the western extremity of Fraoch eilean, in a depth of 13 fathoms (23^m8), mud. There is rather more room at this anchorage than at Birds Nest anchorage.

Anchorage can be obtained in Loch Shieldaig with the north-eastern extremity of Eilean an t Sabhail bearing 310° and the north-western extremity of Eilean Shieldaig bearing 235° , in a depth of 5 fathoms (9^m1), mud; a vessel 200 feet (61^m0) long can moor here with room to swing.

Smaller vessels can anchor farther up the loch with the south-eastern extremity of Eilean Shieldaig bearing 240° , distant nearly one cable, in a depth of 3 fathoms (5^m5) mud.

The chart is a sufficient guide to enable a vessel to proceed by day to an anchorage, eastward of Eilean Horrisdale (*Lat. $57^{\circ} 42' N.$, Long. $5^{\circ} 43' IV.$*) in a depth of about 20 fathoms (36^m6). The anchorages described above are more difficult to enter without local knowledge.

Chart 2509.

Coast.—From Rubha Bàn (page 578) the coast trends about $6\frac{1}{2}$ miles northward to Rubh' Ré, whence it turns abruptly eastward. It is generally bold and rocky, but a bank, with depths of less than 2 fathoms (3^m7) over it, extends in places about $1\frac{1}{2}$ cables offshore.

Ruhh' Ré is the north-western point of a prominent headland, which rises at 2 miles south-eastward to An Cuaidh, 964 feet (293^m8) high, which has a flat outline. The western coast of the headland is cliffy with here and there a few sandstone cliffs and braes. Rubh' Ré is

Chart 2509.

bordered by foul ground, and depths of less than 3 fathoms ($5^m 5$) extend, in places, $1\frac{1}{2}$ cables offshore.

Light.—**Fog signal.**—**Storm signals.**—A light is exhibited, at an elevation of 120 feet ($36^m 6$), from a white tower, 83 feet ($25^m 3$) in height, situated on Rubh' Re (*Lat. $57^{\circ} 52' N.$, Long. $5^{\circ} 49' W.$*). (See view facing page 602). A fog signal is sounded from this light-tower. Storm signals are displayed ; see page 6.

Tidal streams.—See page 578.

Charts 2475, 2635.

CHAPTER XI

RUBH' RÉ TO CAPE WRATH

Charts 2475, 2386.

TIDAL STREAMS.—Neist point to Cape Wrath.—The streams run fairly strongly along the coast and off the salient points, but lose strength across the entrances to the lochs and inlets, and are very weak in the lochs. The times at which the streams are predicted to begin are rather irregular, especially between Rubh' Ré (*Lat. 57° 51' N., Long. 5° 48' W.*) and Cape Wrath. These irregularities are most likely to be caused by the fact that the predictions are based on an insufficient number of observations. 5

The streams are referred to according to the directions towards which they run, but are called in-going and out-going in the lochs.

North Minch.—The streams run in to and out from North Minch through Little Minch and round Butt of Lewis and Cape Wrath. These streams are subject to very great changes from hour to hour, and, at any time, may be very different in localities not far apart. The streams are weak everywhere, and nowhere, clear of the land, exceed a rate of about one knot at springs. 15

Chart 2509.

COAST.—Dangers.—Camas Mòr is entered between Rubh' Ré and Sròn a' Gheodha Dhuibh, $1\frac{1}{4}$ miles east-north-eastward. Black 20 bay is entered between Sròn a' Gheodha Dhuibh and Stac Ruadh, $1\frac{1}{2}$ miles eastward. Both bays are foul. Foul ground and a bank, with depths of less than 5 fathoms (9 m 1) over it, extends about $1\frac{1}{2}$ cables north-westward from Stac Ruadh, and a bank, with a depth of 8 fathoms (14 m 6) over it, lies about $6\frac{1}{2}$ cables north-north-westward of 25 the same point.

Eilean Furadh Mòr, about 3 cables east-north-eastward of Stac Ruadh and 2 offshore, is 61 feet (18 m 6) high, and shows a green, grassy summit. There is no channel for vessels southward of Eilean Furadh Mòr. The northern side of Eilean Furadh Mòr is fringed by a reef, 30 and a bank, with depths of less than 5 fathoms (9 m 1) over it, extends about $1\frac{1}{2}$ cables north-north-westward from its north-western extremity; a shoal, with depths of 2 fathoms (3 m 7) over it, lies about one cable northward of its north-eastern extremity.

Eilean Furadh Beag, about one cable east-south-eastward of Eilean Furadh Mòr, is 40 feet (12 m 2) high, and is connected with Eilean Furadh Mòr by a reef which dries and on which there are some rocks and boulders. Foul ground extends about half a cable eastward from Eilean Furadh Beag. 35

Sgeir Maol Mhoraidh, about 3 cables east-south-eastward of Eilean 40

Chart 2635.

Chart 2509.

Furadh Beag and about one cable from the shore, with which it is connected by a reef that dries, is a rocky islet, 23 feet ($7^{\text{m}0}$) high. Foul ground extends about $1\frac{1}{2}$ cables westward and north-westward, 5 and a shoal, with a depth of $2\frac{1}{2}$ fathoms ($5^{\text{m}0}$) over it, lies about $1\frac{1}{2}$ cables northward of Sgeir Maol Mhoraidh.

Between the foul ground westward of Sgeir Maol Mhoraidh and that eastward of Eilean Furadh Beag there is a channel about one cable wide.

Charts 3146, 2509.

- 10 Sgeir Maol Mhoraidh Shuas, about $3\frac{1}{2}$ cables south-eastward of Sgeir Maol Mhoraidh and three-quarters of a cable offshore, is a rocky islet 16 feet ($4^{\text{m}9}$) high. Sgeir Maol Mhoraidh Shuas is connected with the shore by a reef that dries, and foul ground extends about three-quarters of a cable north-north-westward and half a cable 15 eastward from it.

Chart 2475.

Tidal streams.—Between Rubli' Ré and Rhu Coigach, about 19 miles north-eastward, the streams run about north-north-eastward and south-south-westward between the points, but begin rather 20 irregularly. Off the entrance to Loch Ewe, as off Rubli' Ré, the north-north-east-going stream begins —0340 Stornoway (+0430 Dover), and the south-south-west-going stream begins +0300 Stornoway (-0115 Dover); the spring rate in each direction is from 2 to 2.5 knots. Off the Summer isles the north-north-east-going stream begins —0310 25 Stornoway (+0500 Dover), and the south-south-west-going stream begins +0315 Stornoway (-0100 Dover); the spring rate in each direction is from 1.5 to 1.8 knots. Off Rhu Coigach the north-north-east-going stream begins —0255 Stornoway (+0515 Dover), and the south-south-west-going stream begins +0415 Stornoway 30 (H.W. Dover); the spring rate in each direction is about 2 knots.

See also Table of tidal streams for station K02 in Tidal Streams European Waters, Part II, 1948.

Charts 3146, 2509.

- 35 **LOCH EWE.**—Loch Ewe is entered between Rubha nan Sasan (*Lat. $57^{\circ} 52' N.$, Long. $5^{\circ} 41' W.$*) and Ploc an Slagain, $1\frac{1}{4}$ miles north-eastward. River Ewe flows into its head connecting Loch Ewe with the fresh-water Loch Maree, $1\frac{1}{2}$ miles south-south-eastward. The coast, except for parts of Isle of Ewe, and in the vicinity of Aultbea 40 (page 585), is bordered by low cliffs.

Loch Ewe opens out into a basin, about $2\frac{1}{2}$ miles wide, a great part of which is occupied by the Isle of Ewe, the northern extremity of which, Gob na Lice, is situated about 2 miles south-south-eastward of Ploc an Slagain.

- 45 **Aspect.—Beacons.**—Rubha nan Sasan is a reddish rocky point, and is steep-to. Ploc an Slagain is a headland 219 feet ($66^{\text{m}8}$) high.

A rather steep hill is situated on each side of Slaggan bay, the bay on the northern side of Ploc an Slagain, and Hollow of Slaggan, the valley between them, trends about $2\frac{1}{2}$ miles eastward nearly to 50 Gruinard bay; it is a good mark from north-westward, and can be distinguished on clear nights.

Chart 3146.

The eastern shore of the loch between Ploc an Slagain and Rubh'

Chart 2635.

Chart 3146.

a' Choin, $1\frac{1}{2}$ miles south-south-eastward, is indented and generally cliffy. Rubh' a' Choin is a rocky point.

Sròn Meallan a' Ghambna, the north-eastern extremity of Mellangaun promontory, is situated on the western side of the loch, about $1\frac{1}{4}$ miles southward of Rubha nan Sasan. Mellangaun promontory rises to two steep summits, 177 and 184 feet (53^m9 and 56^m1) high, one and $2\frac{1}{2}$ cables south-south-westward, respectively, of Sròn Meallan a' Ghambna. There are two beacons with conical topmarks on Sròn Meallan a' Ghambna. 10

Isle of Ewe presents a bold steep appearance from northward. The highest part, at its north-western end, 5 cables south-south-westward of Gob na Lice, is 228 feet (69^m5) high. A beacon is situated about $2\frac{1}{2}$ cables south-south-westward of Gob na Lice. The central and southern portions of the island are undulating and cultivated, and there is a large farm building, about 3 cables northward of Gualann Mhòr, the south-eastern extremity of the island. 15

Between Rubh' a' Choin and Aird point, $1\frac{1}{2}$ miles south-eastward, the country on the north-eastern side of the loch is cultivated, and there are many cottages along the coast between these two points. 20 Aird point projects into the loch, and is 27 feet (8^m2) high. Aultbea church in Aultbea village, $2\frac{1}{2}$ cables north-north-eastward of Aird point (*Lat. $57^{\circ} 50' N.$, Long. $5^{\circ} 36' W.$*); Aultbea hotel, 3 cables east-south-eastward of the church; and Drumchork farm buildings on the slopes of the hills, 6 cables south-eastward of Aultbea church. 25

Ploc an Rubha, a promontory 272 feet (82^m9) high, $2\frac{1}{2}$ miles southward of Aird point, separates Loch Thuirnaig, on the eastern side of this promontory, from the head of Loch Ewe. Rubh' Ard na Ba is the north-western extremity of this promontory.

Charts 3146, 2509.

30

Tidal streams.—The in-going stream begins about -0600 Stornoway (+0210 Dover), and the out-going stream begins about H.W. Stornoway (-0415 Dover); the streams are inappreciable except in the entrance to the loch and in the narrower parts of the channels on both sides of Isle of Ewe, where the spring rate in both directions is about 0.5 knot. 35

In the inner part of the loch the streams may be affected by the overflow from Loch Maree.

Chart 3146.

Islands and dangers.—Beacons.—Sgeir Maol Mhoraidh Shuas, on the western side of the entrance to Loch Ewe, is described on page 584.

There are no dangers beyond three-quarters of a cable from the eastern side of Loch Ewe, between Ploc an Slagain and a point about $2\frac{1}{2}$ cables northward of Rubh' a' Choin. Off this latter point several rocks, which dry, extend about $1\frac{1}{2}$ cables offshore. 45

Eilean Rubh' a' Choin, lying close south-westward of Rubh' a' Choin, is 27 feet (8^m2) high, and foul ground extends about half a cable south-westward from it. A bank, with depths of less than 3 fathoms (5^m5) over it, extends about $2\frac{1}{2}$ cables offshore to a position about 3 cables south-eastward of Eilean Rubh' a' Choin. Depths of less than 5 fathoms (9^m1) extend about $2\frac{1}{2}$ cables westward and $2\frac{1}{2}$ cables southward from Eilean Rubh' a' Choin. A beacon with a conical topmark stands on Eilean Rubh' a' Choin, and another, without topmark about $2\frac{1}{2}$ cables north-eastward of it. 50

Chart 2635.

Chart 3146.

Between Rubha nan Sasan and Sròn nan Oban, $7\frac{1}{2}$ cables south-south-westward, the western shore of the loch is fringed by rocks, and a bank, with depths of less than 6 fathoms (11^m0) over it, extends as much as $1\frac{1}{2}$ cables offshore. A bank, with depths of from 11 to 32 feet (3^m4 to 9^m8) over it, extends $5\frac{1}{2}$ cables east-south-eastward from Sròn nan Oban and a detached bank, with a least depth of 19 feet (5^m8) over it, lies about $4\frac{1}{2}$ cables eastward of the same point. Two shoals, with depths of 20 and 26 feet (6^m1 and 7^m9) over them, lie about $2\frac{1}{2}$ and $1\frac{1}{2}$ cables, respectively, west-north-westward of Sròn Meallan a' Ghàmhna.

Sgeir an Araig, situated in the fairway of the loch, about $6\frac{1}{2}$ cables south-westward of Rubh' a' Choin (*Lat. $57^{\circ} 51' N.$, Long. $5^{\circ} 38' W.$*), consists of two islets, connected by a reef which dries. The northern islet has two summits, each about 36 feet (11^m0) high, with a cleft between them. The southern and smaller islet is a flat rock, 4 feet (1^m2) high; a spit, on which a rock which dries 6 feet (1^m8), extends about three-quarters of a cable southward from the southern islet, and a spit, with depths of less than 3 fathoms (5^m5) over it, extends about half a cable north-north-eastward from the northern islet.

There is a beacon on the northern end and two beacons on the southern end of Sgeir an Araig; each beacon has a conical topmark.

The north-eastern shore of The Sound, the channel between the mainland and the north-eastern side of Isle of Ewe, is bordered by a bank, which, with depths of less than 6 fathoms (11^m0) over it, extends in places as much as $3\frac{1}{2}$ cables offshore. Depths of less than 6 fathoms (11^m0) extend as much as 2 cables from the south-western shore of The Sound.

Sgeir a Bhuic, about $3\frac{1}{2}$ cables south-eastward of Sgeir an Araig and about half a cable from the western side of Isle of Ewe, with which it is connected by a reef that dries, is a rocky islet, 23 feet (7^m0) high. A bank, with depths of less than 5 fathoms (9^m1) over it, extends about half a cable westward from this islet.

A rocky spit, with a depth of 3 fathoms (5^m5) over its extremity, extends three-quarters of a cable northward from a position about 3 cables north-north-eastward of Sgeir a Bhuic.

The western shore of the loch between Sron Meallan a' Ghàmhna and An Sguiteach, $6\frac{1}{2}$ cables south-south-eastward, forms a bight, from the middle of the head of which, $3\frac{1}{2}$ cables west-south-westward of An Sguiteach, Eilean Tioram, 21 feet (6^m4) high, extends $1\frac{1}{2}$ cables; the head of this bight dries out $1\frac{1}{2}$ cables. A beacon, with a diamond-shaped topmark, stands on An Sguiteach. Two detached shoals, with depths of 15 and 23 feet (4^m6 and 7^m0) over them, lie, respectively, $1\frac{1}{2}$ and 2 cables northward of An Sguiteach. Foul ground extends about half a cable eastward from An Sguiteach, which should be given a berth of not less than one cable.

Foul ground and a bank, with depths of less than 3 fathoms (5^m5) over it, fringe the western side of the loch between An Sguiteach and Inverasdale pier, 2 miles southward, extending in places about 2 cables offshore.

The eastern shore of the loch, southward of Aultbea hotel, is steep, rocky, and bold as far as Rubha Thuirnaig, $2\frac{1}{2}$ miles southward.

Resolution rock, situated in the fairway, about $1\frac{1}{2}$ miles westward of Rubha Thuirnaig (*Lat. $57^{\circ} 48' N.$, Long. $5^{\circ} 36' W.$*), has a least

Chart 2635.

Chart 3146.

depth of 26 feet ($7^{\text{m}}9$) over it, sand, stones, and vegetable coral. Warburg rock, about 6 cables west-south-westward of Rubh' Ard na Ba and about $1\frac{1}{2}$ cables from the eastern shore, has a least depth of 13 feet ($4^{\text{m}}0$) over it. 5

Both the south-western and north-eastern shores of the loch from southward of Inverasdale pier and Warburg rock, respectively, are fairly steep-to.

Boor rocks, situated on the south-western side of the loch, about $1\frac{1}{2}$ miles south-eastward of Inverasdale pier and about $1\frac{1}{4}$ cables offshore, are a group of above-water and sunken rocks, the highest of which is 9 feet ($2^{\text{m}}7$) high; some of these rocks dry from one to 7 feet ($0^{\text{m}}3$ to $2^{\text{m}}1$).

An irregular line of shoal patches, with depths of from 8 to 18 feet ($2^{\text{m}}4$ to $5^{\text{m}}5$) over them, extends westward and north-westward, from $1\frac{1}{2}$ the eastern side of the loch eastward of Boor rocks, to a position about 3 cables northward of those rocks.

The head of the loch dries out about $1\frac{1}{2}$ cables, and a bank, with depths of less than 3 fathoms ($5^{\text{m}}5$) over it, extends about $5\frac{1}{2}$ cables farther to about abreast the southern end of Boor rocks. 20

Submarine cables.—Vessels are warned against anchoring within an area enclosed by pecked lines on the chart, in the entrance to Loch Ewe, owing to the existence of submarine cables. *See page 7.*

Piers.—Light.—Dolphins.—Beacon.—Big Sand bay is entered close eastward of Rubh' a' Choin; a pier extends about $1\frac{1}{4}$ cables from its head and a slipway is situated close westward of the pier. A light is occasionally exhibited at an elevation of 20 feet ($6^{\text{m}}1$), from a black hut on the pier-head. 25

Three concrete dolphins, situated about three-quarters of a cable offshore about $3\frac{1}{2}$ cables north-north-westward of Aird point, provide 30 a watering berth for H.M. ships, in a depth of about 20 feet ($6^{\text{m}}1$).

There is a pier extending south-eastward from Aird point, with a depth of 13 feet ($4^{\text{m}}0$) alongside its head.

There is a small concrete pier on the western side of Loch Ewe, at Inverasdale; it is marked by a beacon with a cylindrical topmark; 35 a black hut is situated close south-westward of the inner end of this pier.

Anchorages.—Mooring buoys.—Slaggan bay, on the northern side of Ploc an Slagain, has a sandy bottom, but affords no shelter, except during easterly winds.

Charts 3146, 2509. 40

Acairseid nan Uamh, a small rocky bay, is entered close northward of Sròn nan Oban. Cove village (*Lat. $57^{\circ} 51' N.$, Long. $5^{\circ} 42' W.$*) is situated at the head of this bay.

Chart 3146.

The Sound affords anchorage, with good holding ground, in depths of from about 4 to 17 fathoms ($7^{\text{m}}3$ to $31^{\text{m}}1$). It can be entered either from north-westward or south-eastward. With strong northerly winds the smoothest water is with Aultbea church bearing between 351° and 356° , in a depth of 9 fathoms ($16^{\text{m}}5$). With strong south-westerly winds a vessel should anchor from 2 to 3 cables from the north-eastern side of Isle of Ewe, in a depth of about 7 fathoms ($12^{\text{m}}8$). 45

There is anchorage about $1\frac{1}{2}$ miles southward of Aird Point pier-head with good holding ground. Between this position and Aird pier the holding ground is unreliable.

Chart 3146.

Anchorage, with good holding ground, may be found with the summit above Gualann Mòr, bearing 342° , distant 5 cables. Vessels anchored with this summit bearing between north-north-east and east-north-east and distant from 5 to 10 cables have been known to drag.

Several mooring buoys, the positions of which may best be seen on the chart, are laid in The Sound.

Loch Thuirnaig, entered north-eastward of Ploc an Rubha, has 10 moderate depths, but foul ground and a bank, with depths of less than 3 fathoms (5^m5) over it, extends about $1\frac{1}{2}$ cables from the eastern side of the loch. Small vessels moor to the rocks in a cove in the south-western corner of Loch Thuirnaig.

Large vessels can anchor with the northern end of Am Fiaclachan, 15 situated about 6 cables south-westward of Rubh' Ard na Ba bearing 090° , in a depth of about 11 fathoms (20^m1). The holding ground is not very good in places.

There is anchorage for small vessels anywhere between Boor rocks and the head of the loch, in depths of from 2 to $3\frac{1}{2}$ fathoms (3^m7 to 20 5^m9), mud and shells.

Charts 3146, 2509.

Directions.—A vessel approaching from westward, should steer to pass about half a mile northward of Eilean Furadh Mòr.

A vessel approaching from northward will be eastward of the dangers 25 between Eilean Furadh Mòr and Rubha nan Sasan when An Sguiteach bears about 169° and is open eastward of Rubha nan Sasan.

If proceeding to an anchorage in The Sound, when Gob na Lice (Lat. $57^{\circ} 51' N.$, Long. $5^{\circ} 38' W.$) bears 104° , she should steer south-eastward until the cleft between the two summits of Sgeir an Araig 30 is in line with the northern summit of Mellangaun promontory, bearing $251\frac{1}{2}^{\circ}$ astern (see view facing page 549), which leads between Gob na Lice and the shallow flat extending east-south-eastward from Eilean Rubh' a Choin.

When the eastern side of Isle of Ewe bears about 139° and is open 35 north-eastward of Gob na lice the vessel can steer south-eastward into The Sound.

Gob na Lice in line with the summit of Sgeir Maol Mhoraidh Shuas, bearing 305° , leads through the deepest part of the channel between Aird point and Isle of Ewe.

40 A vessel proceeding to the head of the loch can pass on either side of Sgeir an Araig, and westward of Sgeir a Bhuiic. After passing westward of Sgeir a Bhuiic she can steer direct for the head of the loch, but while Inverasdale Pier beacon bears between 249° and 263° Poolewe Free church, $1\frac{1}{2}$ miles south-south-eastward of Am Fiaclachan, should 45 be kept bearing about 151° and well open south-westward of Am Fiaclachan so as to pass westward of Resolution rock.

Chart 3146.

Aultbea.—Aultbea village is connected with Achnasheen railway station, about 42 miles south-eastward, by motor bus.

50 There is a post and telegraph office here.

Small quantities of provisions can be obtained at Aultbea, and water is laid on to Aird Point pier.

Poolewe.—Poolewe village stands at the head of Loch Ewe, and principally on the western bank of River Ewe. The hotel, on the

Chart 3146.

western side of the entrance to the river, is a conspicuous white-washed building. Pool house, three-quarters of a cable eastward of the hotel, is a large house on the eastern entrance point of the river.

There is a post and telegraph office here.

Small quantities of provisions can be obtained at Poolewe (*Lat. 57° 46' N., Long. 5° 36' W.*).

5

Chart 2509.

COAST.—The coast between Gob a' Gheodha, the northern entrance point of Slaggan bay (page 587) and Greenstone point, about 10 2½ miles north-north-eastward, is fairly steep-to.

Greenstone point, the northern extremity of the promontory dividing Loch Ewe from Gruinard bay, is low and flat. It rises gradually to hills from about 70 to 165 feet (21^m3 to 50^m3) high, and shows up well on easterly bearings.

15

A large and conspicuous square stone is situated close westward of Greenstone point.

The coast between Greenstone point and Rubha Beag, about 1½ miles east-south-eastward, is indented. A spit, with a depth of 1¼ fathoms (3^m2) over it, extends about three-quarters of a cable offshore, 20 3½ cables east-south-eastward of Greenstone point.

Charts 2500, 2509, 2475.

Gruinard bay.—Dangers.—Prohibited landing.—Gruinard bay is entered between Rubha Beag and Stattic point, 4½ miles eastward, but has no good anchorage. The south-western shore of the bay is 25 fringed by a reef, which extends, in places, about 1¾ cables offshore.

Chart 2509.

Creag an Eilean is situated close off the northern extremity of Rubha Beag. Leac an Fhaobhair is situated half a mile south-eastward of Creag an Eilean.

30

Carrag Mòr and Carrag Beag, a group of rocks lying about 3 cables south-eastward of Leac an Fhaobhair, and 1¼ cables offshore, dry 11 feet (3^m4). Camas a Charraig is entered close south-westward of Carrag Mòr and Carrag Beag; it is encumbered with rocks, some of which are awash.

35

Udrigle house, near the coast, 1¾ miles southward of Leac an Fhaobhair, bearing 186° and just open eastward of An Dubh Airde, a point 8½ cables southward of Leac an Fhaobhair, leads close eastward of Carrag Mòr and Carrag Beag.

Charts 2500, 2509.

40

Gruinard island is situated with its north-western extremity about 3 miles east-south-eastward of Creag an Eilean, on the eastern side of Gruinard bay. The island rises to a dune or barrow, 338 feet (103^m0) high, and is covered with grass. Landing on Gruinard island is prohibited.

45

Chart 2500.

Gruinard island (*Lat. 57° 53' N., Long. 5° 28' W.*) is fringed by rocks, which extend, in places, about one cable offshore. Stirk rock, a detached rock 1½ cables north-north-westward of the north-western extremity of Gruinard island, is awash.

50

Douran rocks, about 1½ miles south-south-westward of Stattic point and 1¾ cables offshore, dry 7 feet (2^m1); these rocks lie in the entrance to Ragh Mhungasdail, a small sandy bay.

Chart 2635.

Chart 2500.

Gruinard river, a rapid mountain stream, flows into the bay about 7 cahles south-eastward of the south-eastern extremity of Gruinard island. The gravel brought down by freshets in this stream forms a 5 shoal extending about $3\frac{1}{2}$ cahles offshore; Gruinard house is situated on the north-eastern entrance point of Gruinard river.

Charts 2500, 2509.

An t Saothair, about $2\frac{1}{2}$ miles south-eastward of An Dubh Airde and about 3 cables from the south-western side of Gruinard bay, is 10 awash.

Tidal streams.—The streams are imperceptible in Gruinard bay. Streams, with spring rates up to about 0·5 knot, run in the channels between the Summer isles, and between the isles and the land, but their directions, and the times at which they begin, are irregular and 15 uncertain.

See also Table of tidal streams for station K02 in Tidal Streams European Waters, Part II, 1948.

Chart 2500.

Little Loch Broom.—**Light.**—Little Loch Broom is entered 20 between Stattic point and Cailleach head, about $1\frac{1}{2}$ miles north-north-eastward. The loch is subject to heavy squalls, especially in its upper part; the most dangerous are those which sweep through the valley between Sail Mòr, $5\frac{1}{4}$ miles south-eastward of Stattic point, and Mac' us Mathair, 2 miles farther east-south-eastward, during south-westerly 25 winds; these form regular whirlwinds over the loch.

A light is exhibited at an elevation of 196 feet (59^m7), from a white tower, 19 feet (5^m8) in height, on Cailleach head.

Aspect.—Stattic point is low. Leac an lme, a point 8 cables east-south-eastward of Stattic point, consists of dark rock.

30 Cailleach head is bold, broad, and smooth-sided, with a cliff fronting seaward, the northern part of which is rock, and the southern part earth cliffs and steep banks from 50 to 150 feet (15^m2 to 45^m7) high; the summit of the head is 372 feet (113^m4) high. The point about one mile south-south-eastward of the lighthouse on Cailleach head 35 (*Lat. $57^{\circ} 56' N.$, Long. $5^{\circ} 24' W.$*) rises steeply to a conical hill, 76 feet (23^m2) high; Corran Sgoraig, about 3 cables east-south-eastward of this point, is low, with a low boundary wall running round it, and a boulder and shingle beach. Scattered villages are situated on both shores of the loch; there is a slipway at Badluchrach, about $1\frac{1}{2}$ miles east-south-40 eastward of Stattic point.

The land on the south-western side of the loch rises abruptly, $9\frac{1}{2}$ cables southward of Stattic point, to Carn Dearg an Droma, 601 feet (183^m2) high, from which a ridge extends along the south-western side of the loch to Sail Mòr, a round-topped mountain 2,501 feet (762^m3) 45 high.

The peninsula on the north-eastern side of the loch, and which separates it from Loch Broom, rises in Beinn Ghobhlach, $4\frac{1}{2}$ miles east-south-eastward of Cailleach head, to an elevation of 2,075 feet (632^m5). The peninsula between Beinn Ghobhlach and Cailleach head 50 is comparatively low.

Submarine cable.—**Beacons.**—A submarine cable, indicated on the chart, crosses the loch about $1\frac{1}{2}$ miles inside the entrance. The landing places of the cable are each marked by a beacon. See page 7.

Tidal streams.—In both Little Loch Broom and Loch Broom the

Chart 2500.

in-going stream begins about -0600 Stornoway (+0210 Dover), and the out-going stream begins about H.W. Stornoway (-0415 Dover); the streams are very weak except in the entrance to Little Loch Broom, and in the narrows off Corry point in Loch Broom; 5 the spring rate in each direction is in both localities from 0·8 to one knot.

Dangers.—Ardross rock, on the south-western side of the entrance to Little Loch Broom, about $3\frac{1}{2}$ cables east-north-eastward of Stattic point, is a flat rock, with a least depth of 2 feet (0^m6) over it. 10

A bank, with depths of less than 3 fathoms (5^m5) over it, extends $1\frac{1}{2}$ cables offshore between the point 76 feet (23^m2) high, situated about one mile south-south-eastward of the lighthouse on Cailleach head and Corran Sgoraig.

Conger Stack, situated in the fairway, about $1\frac{1}{2}$ miles northward of Mac'us Mathair (*Lat. $57^{\circ} 50' N.$, Long. $5^{\circ} 15' W.$*) has a least depth of $4\frac{1}{2}$ fathoms (7^m8) over it, rising steeply from a depth of 20 fathoms (36^m6).

The head of the loch dries out about 7 cables.

Anchorage.—The loch is deep throughout in the fairway, and anchorage can only be obtained off Rhireavach village, on the north-eastern side of the loch, about $1\frac{1}{2}$ cables east-south-eastward of Corran Sgoraig, from 3 to 4 cables offshore, in depths of from 15 to 18 fathoms (27^m4 to 32^m9).

Charts 2501, 2500.

25

APPROACHES TO LOCH BROOM.—The western approach to Loch Broom between Cailleach head and Priest island, $3\frac{1}{2}$ miles west-north-westward, is the only approach for large vessels.

Dorney sound, the channel northward of Tanera Mòr, an island, about 4 miles northward of Cailleach head, is used by small vessels 30 approaching Loch Broom from northward.

Tidal streams.—See pages 584 and 590.

Chart 2501.

Aspect.—*Western approach.*—Priest island is 76^m8 high; on southerly bearings it appears smooth-topped with two summits 35 near its eastern end, but on north-easterly bearings its outline is rugged; the island is generally covered with heather. Glasleac Beag about 9 cables northward of Priest island, is narrow, flat, and 95 feet (29^m0) high; on a fine day it has a bright green appearance, owing to its being covered with sea grass. 40

Charts 2501, 2500.

Carn Dearg, on the southern side of the western approach to Loch Broom, about $8\frac{1}{2}$ cables east-north-eastward of Cailleach head, is a rugged promontory with several summits, the highest of which is 341 feet (103^m9) high; this promontory has steep rocky coasts. 45 Between Leac Dhonn, the northern extremity of Carn Dearg, and Rubha Camas a' Mhaoraich, the south-western entrance point of Loch Broom, 4 miles east-south-eastward, the coast forms Annat bay; the shore of the eastern part of this bay is high and bold, rising steeply to Beinn Ghobhlach (page 590). 50

Chart 2500.

Isle Martin (*Lat. $57^{\circ} 57' N.$, Long. $5^{\circ} 13' W.$*), about $1\frac{1}{2}$ miles north-north-eastward of Rubha Camas a' Mhaoraich, is 391 feet (119^m2)

Chart 2500.

high in its western part; it is reddish in colour and of a sterile appearance, but at times it scarcely shows against the background of hills behind it. The western and northern coasts of the island are rocky cliffs; on its eastern side is a small bay, on the shore of which, in 1908, stood a large stone salmon-curing house in ruins.

Charts 2501, 2500.

Rubha Dubh Ard, about 3 miles north-eastward of Leac Dhonn, ends in a low cliff; on south-easterly bearings it shows as a bold cliffy point, 82 feet (25^m0) high.

From Rubha Dubh Ard the north-eastern side of the approach to Loch Broom trends about $4\frac{1}{2}$ miles east-south-eastward to Ruhha Meallain Bhuidhe, a promontory $3\frac{1}{2}$ cables eastward of the eastern extremity of Isle Martin; it is for the most part high. The central part of this coast, for about 2 miles, consists of cliffs, rising abruptly and forming the sides of Beinn Mòr Coigach, $2\frac{1}{2}$ miles north-north-westward of Rubha Meallain Bhuidhe. Beinn Mòr Coigach is a sharp mountain ridge showing, on easterly bearings, as a cone, 2,396 feet (730^m3) high. The true summit, situated a little inland along the ridge, is 2,430 feet (740^m6) high.

Chart 2501.

Northern approach.—Eilean Mullagrach, on the north-eastern side of the northern approach to Loch Broom, about $3\frac{1}{2}$ miles north-north-eastward of Glasleac Beag, is 150 feet (45^m7) high, and has a flat summit at each end. Meall an Fheadain, a hill on the mainland, $2\frac{1}{2}$ miles eastward of Eilean Mullagrach, is 656 feet (199^m9) high, and has a truncated top; it is higher and steeper than any of the adjacent hills, and is a good mark.

Tanera Mòr, on the south-western side of the northern approach to Loch Broom, is 399 feet (121^m6) high, and shows a flat summit on southerly bearings.

Rubha Dunan, on the eastern side of the northern approach to Loch Broom, about $8\frac{1}{2}$ cables eastward of the south-eastern extremity of Tanera Mòr, is a greenish point with low red sandstone cliffs. It is steep-to, and on the coast about half a mile eastward of it are the remains of a Pictish tower, a part of the wall of which still stands. Eastward of the point, and stretching along the coast northward is Achiltibuie village (*Lat. 58° 01' N., Long. 5° 20' W.*), with scanty patches of cultivation.

40 Islands and dangers in western approach.—Priest island, is described on page 591.

Na Finlaichean, one mile eastward of Priest island, is a group of islets and rocks; the islets are bold and rocky, with precipitous cliffs on their western and northern sides. Carn Iar, $1\frac{1}{2}$ miles east-north-eastward of Priest island, is the northernmost and highest of these islets, and attains an elevation of 162 feet (49^m4).

Sgeir Mòr, situated $5\frac{1}{2}$ cables westward of the northern extremity of Carn Iar, dries 12 feet (3^m7). Sgeir Beag, about $3\frac{1}{2}$ cables northward of Carn Iar, dries 3 feet (0^m9). Twelve-feet rock, with a depth of 2 fathoms (3^m7) over it, lies about midway between Sgeir Mòr and Sgeir Beag.

Eilean Dubh, the southern extremity of which is situated $4\frac{1}{2}$ cables east-north-eastward of Carn Iar, is 287 feet (87^m5) high, covered with heather, and steep-to. Sgeir nam Malt, about 4 cables west-north-

Chart 2501.

westward of Eilean Dubh, consists of three steep-to rocks, connected by a reef which dries; the largest rock is 67 feet ($20^{\text{m}}4$) high.

Meall an Fheadain, bearing 030° and open north-westward of Sgeir Neogluasadach, (see below), leads north-westward of Sgeir Mòr, 5 Twelve-feet rock, Sgeir Beag, and Sgeir nam Mult.

There is a channel about half a cable wide, with a depth of 7 fathoms ($12^{\text{m}}8$) in the fairway, southward of Eilean Dubh.

Stac Mhic Aonghais, about $1\frac{1}{2}$ miles eastward of Glasleac Beag, is 80 feet ($24^{\text{m}}4$) high; a reef extends about half a cable south-westward 10 from its south-western end. A shoal, with a least depth of 4 feet ($1^{\text{m}}2$) over it, lies about $2\frac{1}{2}$ cables west-south-westward of the south-western extremity of Stac Mhic Aonghais, and another shoal, with a least depth of 4 feet ($1^{\text{m}}2$) over it, lies $1\frac{1}{2}$ cables north-westward, of the same point. 15

Sgeir Neogluasadach, about $5\frac{1}{2}$ cables eastward of Stac Mhic Aonghais, shows a vertical face northward. Foul ground extends about half a cable north-westward from this rock, and about the same distance east-north-eastward from its north-eastern extremity.

Sgeir Revan (*Lat. $58^{\circ} 00' N.$, Long. $5^{\circ} 26' W.$*), situated $3\frac{1}{2}$ cables 20 east-north-eastward of Sgeir Neogluasadach, is 25 feet ($7^{\text{m}}6$) high, and steep-to; a rocky shoal, with a depth of $4\frac{1}{2}$ fathoms ($7^{\text{m}}8$) over it, lies about three-quarters of a cable westward of it. There is a deep channel northward of Sgeir Revan.

Horse island, the southern extremity of which is situated about 25 $2\frac{1}{2}$ miles eastward of Eilean Dubh, is 162 feet ($49^{\text{m}}4$) high. Meall nan Gabhar, the northern part of Horse island, is connected with the main part of the island by a reef which dries 7 feet ($2^{\text{m}}1$). The western coast of Horse island is steep-to, and its southern end consists of rocky cliffs.

Horse sound, eastward of Horse island, is deep.

Iolla Mòr, about $1\frac{1}{2}$ cables south-south-eastward of the southern extremity of Horse island, is a large flat rock, which dries 11 feet ($3^{\text{m}}4$), and then shows a surface about one cable in extent; the rock shelves gradually southward, but there is a deep channel between it and the island. 30

Mary rock, about $2\frac{1}{2}$ cables west-south-westward of Rubha Dubh Ard, dries one foot ($0^{\text{m}}3$). Iolla Beag, about $1\frac{1}{2}$ cables south-eastward of Mary rock and 2 cables offshore, dries 9 feet ($2^{\text{m}}7$).

The northern extremity of Stac Mhic Aonghais, bearing 283° and open southward of Horse island (see view on chart 2501), leads south- 40 ward of Iolla Beag. Ruhha Dunan in line with Meall an Fheadain, bearing 331° , leads south-westward of Iolla Beag and Mary rock.

Carn skerries, $1\frac{1}{2}$ miles south-south-westward of Horse island, are a group of grass-covered islets and rocks. The northern islet, Carn nan Sgeir, 85 feet ($25^{\text{m}}9$) high, is divided into two parts, which 45 are connected by a shingle beach, which dries 14 feet ($14^{\text{m}}3$). The south-western coast of Carn nan Sgeir is cliffy, and several rocks extend about one cable, south-westward and south-eastward from it. A shoal bank extends about three-quarters of a cable north-north-westward from Carn nan Sgeir. 50

Meall a' Chaoruinn, the southern islet of this group, $1\frac{1}{2}$ cables southward of Carn nan Sgeir, is 40 feet ($12^{\text{m}}2$) high, and covered with grass; a shoal, with a depth of 4 fathoms ($7^{\text{m}}3$) over it, lies about $1\frac{1}{2}$ cables east-north-eastward of it.

Chart 2501.

There is a channel, with depths of from 7 to 9 fathoms (12^m8 to 16^m5), between Meall a' Chaoruinn and Carn nan Sgeir.

Iol' a' Chairn Deirg, about three-quarters of a cable northward of Leac Dhonn (*Lat.* $57^{\circ} 56' N.$, *Long.* $5^{\circ} 22' W.$), is 2 feet (0^m6) high; a considerable area of the base of this rock dries.

The direct route to Loch Broom is between Iol' a' Chairn Deirg and Meall a' Chaoruinn, the channel having a least width of $5\frac{1}{2}$ cables between the 20-fathom (36^m6) lines.

10 Charts 2501, 2500.

Martin bank, with depths of less than 20 fathoms (18^m3) over it, extends about $3\frac{1}{2}$ miles west-north-westward from the south-western side of Isle Martin; this bank has a least depth of 8 fathoms (14^m6) over it.

15 Chart 2501.

Islets and dangers in northern approach.—Summer isles consist of a group of islands, islets and rocks situated on the northern side of the approach to Loch Broom. The principal islands of this group are Eilean Mullagrach, Isle Ristol, Glasleac Mòr, Tanera Beag, Eilean a' Char, Eilean Fada Mòr and Tanera Mòr. Eilean Mullagrach is fringed on its south-western and western sides by rocks, which dry, and foul ground extends about three-quarters of a cable northward from its northern extremity. About $3\frac{1}{4}$ cables west-north-westward of the southern extremity of Eilean Mullagrach and one cable from its western side is a large square rock, which dries 11 feet (3^m4). The western coast of this island should not be approached within 2 cables.

Isle Ristol, about $2\frac{1}{2}$ cables eastward of Eilean Mullagrach, is 226 feet (68^m9) high; the north-eastern end of this island is connected with the mainland eastward by a reef that dries. Foul ground extends about $2\frac{1}{2}$ cables northward from the northern side of Isle Ristol.

The channel between Eilean Mullagrach and Isle Ristol is free from dangers in the fairway, but neither shore should be closely approached.

Glasleac Mòr, about 8 cables south-south-westward of Eilean Mullagrach, is 94 feet (28^m7) high, and steep-to; a shoal, with a depth of $4\frac{1}{2}$ fathoms (7^m8) over it, lies about $1\frac{1}{2}$ cables east-south-eastward of its north-eastern extremity. West Black rock, about $1\frac{1}{2}$ cables eastward of the south-eastern extremity of Glasleac Mòr, and Sgeir Dhubb, $3\frac{1}{2}$ cables farther east-north-eastward, are from 10 to 12 feet (3^m0 to 3^m7) high.

Tanera Beag (*Lat.* $58^{\circ} 01' N.$, *Long.* $5^{\circ} 27' W.$), the north-western extremity of which is situated about $7\frac{1}{2}$ cables south-eastward of Glasleac Mòr, is about 261 feet (79^m9) high, and is steep-to on its southern and western sides. Numerous islets and rocks lie between the eastern side of Tanera Beag and the western side of Tanera Mòr, $4\frac{1}{2}$ cables eastward. There is a narrow channel westward of Tanera Mòr, with a least depth of 6 fathoms (11^m0) in the fairway.

Eilean a' Char, about $1\frac{1}{2}$ cables northward of Tanera Beag, is 95 feet (29^m0) high; several rocks extend about one cable from its western side, and foul ground extends $2\frac{1}{2}$ cables north-north-eastward from its northern end. Sgeir Iasgaich, the northern end of this foul area, dries 9 feet (2^m7).

A shoal, with a depth of $4\frac{1}{2}$ fathoms (8^m7) over it, lies in the fairway of Dorney sound, about 6 cables south-eastward of the southern

Chart 2501.

extremity of Isle Ristol and about 2 cables from Rubh a' Mhadaidh ruaidh, the northern entrance point of Dorney sound. Iolla a' Mealan, situated in the fairway, about $4\frac{1}{2}$ cables east-south-eastward of Rubh a' Mhadaidh ruaidh, dries one foot (0^m3). Sgeir a' Chapuill, on the south-western side of the channel, about one cable east-north-eastward of the northern end of Tanera Mòr, dries 6 feet (1^m8).

The southern extremity of Eilean Mullagach (*Lat. $58^{\circ} 03' N.$, Long. $5^{\circ} 28' W.$*), bearing 297° and just open south-westward of Isle Ristol, leads between the $4\frac{1}{4}$ -fathom (8^m7) shoal south-south-westward of Rubh a' Mhadaidh ruaidh, and Sgeir a' Chapuill on the south-west and Iolla a' Mealan, on the north-east.

The islets and dangers south-westward of Tanera Mòr are described on page 593.

Anchorages and inlets in western approach.—Camas na Ruthaig, on the western side of Carn Dearg (page 591), is a small open bay affording no shelter.

Chart 2500.

Annat bay is open northward and eastward. The shore of the western part of the bay is more or less sloping, so that temporary anchorage can be obtained at from one to 3 cables offshore, in depths of from 7 to 17 fathoms (12^m8 to 31^m1). The best anchorage for small vessels is in Féith an Fléoir, a small bight in the western side of the bay. The south-eastern side of Annat bay is steep-to.

Charts 2501, 2500.

Between Rubha Dubh Ard and Rubha Meallain Bhuidhe, about $4\frac{1}{2}$ miles east-south-eastward, the depths are too great for convenient anchorage.

Chart 2500, plan of Loch Kanaird.

Loch Kanaird.—**Dangers.**—Loch Kanaird, between the mainland and the eastern side of Isle Martin, is almost landlocked. The centre of this loch is deep, but in the eastern part, between Rubha Meallain Bhuidhe and Ard na h-Eighe, a low projecting point 5 cables south-south westward, the depths within the 10-fathom (18^m3) line shoal rapidly.

Ardmair, a small village, is situated on the southern shore of the loch, about a quarter of a mile within Ard na h-Eighe. River Kanaird flows into Loch Kanaird on the south-eastern side of Rubha Meallain Bhuidhe. The eastern shore of the loch, northward of Rubha Meallain Bhuidhe (*Lat. $57^{\circ} 57' N.$, Long. $5^{\circ} 12' W.$*), is low, with sand and shingle beaches, and intervening rocky points.

Foul ground extends three-quarters of a cable eastward from the south-eastern extremity of Isle Martin, also about $2\frac{1}{2}$ cables west-north-westward from Ard na h-Eighe, and between these two foul areas is a bar, with depths of from three-quarters of a fathom to $2\frac{1}{2}$ fathoms (1^m4 to 4^m6) over it.

From the northern side of Ard na h-Eighe a rocky spit extends about 2 cables northward. Sgeir Beag, situated on this rocky spit, one cable northward of the point, dries about 9 feet (2^m7), and Sgeir Mòr, about $1\frac{1}{2}$ cables northward of the point, is a small rock $1\frac{1}{2}$ feet (0^m5) high.

There is a flat of sand and gravel at the mouth of River Kanaird.

A rocky shoal, with a depth of 2 fathoms (3^m7) over it, lies about three-quarters of a cable north-westward of Rubha Meallain Bhuidhe.

Charts 2386, 2475, 2635.

Chart 2500, plan of Loch Kanaird.

Anchorages.—Directions.—Anchorage can be obtained in the small bay on the eastern side of Isle Martin. The best berth is with the ruin of the curing house (page 592), bearing 235° , in depths of from 5 to 10 fathoms (12^m8 to 18^m3).

There is a good anchorage for moderate-sized vessels in the eastern part of the loch between Ard na h-Eighe and Rubha Meallain Bhuidhe, in depths of from 3 to 5 fathoms (5^m5 to 9^m1), mud.

The principal entrance to Loch Kanaird is from northward. A vessel should steer in mid-channel between the northern side of Isle Martin and the mainland northward, and, rounding the north-eastern end of the island at a convenient distance, steer for the desired anchorage.

There is an entrance for small vessels from southward; Rubha Giubhais, the eastern extremity of Isle Martin, in line with a dark diagonal streak on the mainland cliffs northward of Isle Martin, bearing 000° , leads across the bar in a least depth of $1\frac{1}{2}$ fathoms (2^m7), but the dark streak is not easily identified.

Chart 2501.

Anchorages in northern approach to Loch Broom.—Caolas Eilean Ristol, the channel between the mainland and the eastern side of Isle Ristol, affords anchorage to small vessels near its northern end, in a depth of 3 fathoms (5^m5), but the entrance to this anchorage is narrow and can only be approached from southward. There is a storehouse and a pier on the eastern side of Isle Ristol (*Lat. $58^{\circ} 03' N.$, Long. $5^{\circ} 26' W.$*), about $3\frac{1}{2}$ cables from its southern end.

Badentarbat bay is entered between Rubha Dunan and Rubhan na Buaile, $1\frac{1}{2}$ miles north-north westward, on the eastern side of the northern approach to Loch Broom; it has moderate depths with sandy bottom for about 3 cables offshore.

There is a pier on the northern shore of Badentarbat bay, about 2 cables eastward of Rubhan na Buaile. There is regular communication by sea with other ports on the mainland.

There is a well-sheltered bay in the eastern side of Tanera Mòr, with a pier projecting from the shore about $4\frac{1}{2}$ cables south-westward of the northern entrance point of this bay; there is a large house just within this pier. The best anchorage is in the southern part of the bay, with the large house bearing 238° , in depths of 12 to 14 fathoms (21^m9 to 25^m6). A small vessel, with local knowledge, can anchor within the two islets lying close offshore on the southern side of the bay, in a depth of 4 fathoms (7^m3), where smoother water will be found during north-easterly winds; the depths here are shoaler. A vessel entering this latter anchorage should take care to avoid some rocks, which dry, and extend a short distance from the south-eastern and south-western shores of this anchorage.

45 Charts 3192, 2500.

LOCH BROOM.—Light.—Loch Broom is entered between Rubha Camas a' Mhaoraich (page 591) and Rubha Cadail, $6\frac{1}{2}$ cables north-eastward. The village and port of Ullapool are situated on the north-eastern shore, about $2\frac{1}{2}$ miles within the entrance. About $1\frac{1}{2}$ miles south-eastward of Ullapool are the narrows off Corry point, where the loch has a least width of about $2\frac{1}{2}$ cables.

A light is exhibited, at an elevation of 35 feet (10^m7), from a white tower, 29 feet (8^m8) in height, on Rubha Cadail.

Charts 3192, 2500.

The loch is generally free from dangers, but is subject to squalls from the surrounding mountains.

The land is mountainous on both sides of the loch, and trees are few until near the head. The principal summits are Beinn nam Ban, 1,894 feet (577^m3), on the south-western side of the loch, about $3\frac{1}{4}$ miles south-south-eastward of Ruhha Camas a' Mhaoraich; and Beinn Eili-deach, 1,822 feet (555^m3), on the north-eastern side of the loch, about $2\frac{1}{2}$ miles eastward of Ullapool point (*Lat. $57^{\circ} 54'$ N., Long. $5^{\circ} 10'$ W.*).

Tidal streams.—See pages 584 and 590.

10

Chart 2500.

Dangers and bank.—From about $1\frac{1}{2}$ cables westward of Rubha Cadail, Cadail bank, with depths of less than 20 fathoms (36^m6) over it, and a least depth of 9 fathoms (16^m5), extends about $2\frac{1}{4}$ miles westward.

15

Eilean na Mile lies close offshore about $2\frac{1}{2}$ cables westward of Rubha Camas a' Mhaoraich, and a shoal, with a depth of $1\frac{1}{2}$ fathoms (2^m7) over it, is situated close north-eastward of it. A shoal, with a depth of 3 fathoms (5^m5) over it, lies on the north-eastern side of the loch about 8 cables south-eastward of Rubha Cadail and about $1\frac{3}{4}$ cables 20 offshore.

Charts 3192, 2500.

Buckle patch, about 2 miles south-eastward of Rubha Camas a' Mhaoraich and about half a cable from the south-western shore, has a least depth of $4\frac{1}{2}$ fathoms (8^m2) over it.

25

Chart 3192.

From the mouth of Ullapool river, which flows into the north-eastern side of the loch, about 5 cables northward of Ullapool point, an extensive flat of sand, shell and stones, some of which dries, extends, with depths of less than 3 fathoms (5^m5) over it, about 3 cables offshore. The navigable channel for large vessels is here narrowed to about $2\frac{1}{2}$ cables.

30

Charts 3192, 2500.

From the south-western side of the loch, about 3 miles south-eastward of Rubha Camas a' Mhaoraich a flat, with a depth of $4\frac{1}{2}$ fathoms (8^m7) over it, at its northern end, extends about $2\frac{1}{2}$ cables north-north-eastward reducing the width of the channel southward of Ullapool point, for large vessels, to about 2 cables.

Chart 3192.

Otter bank, situated in the fairway of the loch, about $0\frac{1}{2}$ cables south-eastward of Ullapool point (*Lat. $57^{\circ} 54'$ N., Long. $5^{\circ} 10'$ W.*), has a least depth of $4\frac{1}{2}$ fathoms (8^m7) over it.

The head of the loch dries out about $8\frac{1}{2}$ cables.

Submarine cables.—Beacons.—Two submarine cables, the directions of which are indicated on the chart, cross the loch from Ullapool point; their landing places are marked by a beacon.

45

Anchorages.—Piers.—Lights.—Between Ullapool and the narrows off Corry point there is good anchorage for large vessels, in depths of from 5 to 16 fathoms (9^m1 to 29^m3), sand and stones.

There is good anchorage for small vessels in a small bay on the south-western side of the loch, just above the narrows at Corry point, in a depth of about 3 fathoms (5^m5). The northern entrance point of this bay is covered with grass; a white cottage about 2 cables westward of the point is a conspicuous mark.

Chart 3192.

There is also good anchorage at the head of the loch, in depths from 12 to 15 fathoms (21^m9 to 27^m4), mud.

On the north-eastern side of the loch, about 2½ cables east-north-eastward of Ullapool point, there is a pier with a T head, with depths of from 8 to 16 feet (2^m4 to 4^m9) alongside. About 1½ cables eastward of this pier is a concrete jetty, with a depth of 3 feet (0^m9) alongside its outer end.

A light is exhibited, at an elevation of 20 feet (6^m1), from a white post, 12 feet (3^m7) in height, situated on Ullapool point.

A light is exhibited, at an elevation of 21 feet (6^m4), from a mast, 18 feet (5^m5) in height, on the south-western corner of the T-headed pier at Ullapool.

Braemore pier, a wooden pier with a T head, is situated on the eastern shore, about 7½ cables from the head of the loch; this pier was in disrepair in 1934.

Charts 3192, 2500.

Directions.—It is advisable for a vessel drawing more than 27 feet (8^m2) to enter the loch at half flood.

20 A vessel should keep about 2 cables from the south-western shore until Ullapool point is in line with the bridge over the burn, situated 5½ cables eastward of Ullapool pier, bearing about 085°, which leads southward of the bank off Ullapool river. She should then alter course sharply eastward, and, passing Ullapool point at the distance of about 25 one cable, anchor as convenient southward of the village.

Chart 3192.

Ullapool.—Ullapool stands on a flat projecting terrace from 30 to 45 feet (9^m1 to 13^m7) high; the houses are visible from seaward.

30 There is motor communication with Garve, a village about 32 miles south-eastward, which is connected with the railway system.

There is regular communication by sea with other ports on the mainland, whence there is communication by sea with the Hebrides.

There is a post and telegraph office at Ullapool (*Lat.* 57° 54' *N.*, *Long.* 5° 10' *W.*), which is connected with the general telephone system.

Provisions may be obtained in small quantities. Fresh water is laid on to the pier.

A small supply of coal is usually in stock.

Life-saving.—A line-throwing apparatus is maintained at Ullapool.

40 See page 9.

Chart 2501.

COAST.—The coast between Rubh' a' Mhadaidh ruaidh (page 595) and the southern entrance point of Loch an Alltair Duibh, about one mile northward, is fronted by Eilean Mullagrach and Isle of Ristol. 45 The coast between the northern entrance point of Loch an Alltair and Rhu Coigach, about 3 miles northward, is rather low, rocky, and indented by several small bays, all of which are open westward and north-westward.

Rhu Coigach is a rocky point, 60 feet (18^m3) high; it is the termination of a long flat promontory which extends about 4 miles north-north-westward from the base of Meall an Fheadain.

Dangers.—White rock, about 8½ cables north-north-eastward of the northern extremity of Eilean Mullagrach and 1½ cables offshore,

Chart 2501.

dries 2 feet (0^m6). It is situated in the entrance to Reiff bay and near the centre of a shoal, with depths of from 1½ to 2 fathoms (2^m7 to 3^m7) over it.

From the western entrance point of Reiff bay, Clach na h-Iolla, a reef of large stones, extends 2½ cables southward. A rock, with a depth of less than 6 feet (1^m8) over it, is situated close south-eastward of the southern end of Clach na h-Iolla.

Sgeir Golach, about one mile northward of the western entrance point of Reiff bay and one cable offshore, consists of two above-water rocks, with some rocks, which dry, in their vicinity.

Rocks, which dry, extend about three-quarters of a cable northward and north-north-eastward from Rhu Coigach.

Loch an Alltain Duibh and Reiff bay.—Loch an Alltain Duibh has depths of from 1½ to 6 fathoms (2^m7 to 11^m0), good holding ground, but it is open north-westward, and it is not recommended as an anchorage. The foul ground extending northward from Isle Ristol, on the southern side of the entrance to the loch, is described on page 594.

Reiff bay is shallow, and on its north-eastern shore is the small village of Reiff.

Charts 1953, 2501, 2386.

20

Coast.—Enard bay is entered between Rhu Coigach and Kirkaig point (*Lat.* 58° 08' N., *Long.* 5° 18' W.), the southern entrance point of Loch Inver, 4½ miles east-north-eastward. There are several small bays and inlets on the shores of Enard bay, occasionally used by small vessels, but none is of any importance.

Suilen, a conspicuous, tooth-shaped peak, 2,392 feet (729^m1) high, lies about 5 miles east-south-eastward of Kirkaig point.

Charts 1953, 2501.

Dangers.—Beacon.—There are several islands, islets, and rocks, extending as much as 7 cables from the south-eastern side of Enard bay.

A' Chleit (Clette), an island situated about 1½ miles west-south-westward of Kirkaig point, rises nearly vertically to an elevation of 112 feet (34^m1). The northern and southern sides of the island are steep-to. Foul ground and a shoal bank extend about 1½ cables south-eastward and three-quarters of a cable eastward from the eastern extremity of this island. There are some shoals, with a least depth of 25 feet (7^m6) over them, lying within 2 cables east-south-eastward of the eastern extremity of A' Chleit. A rock, with a depth of 4 fathoms (7^m3) over it, on which the sea breaks in northerly gales, lies 4 cables northward of the western extremity of this island.

Chart 1953.

Sgeir Mòr, lying in the entrance to Loch Kirkaig, about 8 cables south-south-eastward of Kirkaig point, is 14 feet (4^m3) high; foul ground and a bank, with depths of less than 3 fathoms (5^m5) over it, extend about half a cable north-westward and three-quarters of a cable north-north-eastward from it. A shoal, with a depth of 3 fathoms (5^m5) over it, lies about 2 cables north-westward of Sgeir Mòr.

Chart 2386.

Tidal streams.—Off Cluas Deas (page 602) and Point of Stoer (page 602), as off Rhu Coigach, the north-going stream begins —0255 Stornoway (+0515 Dover), and the south-going stream begins +0415 Stornoway (H.W. Dover); the spring rate in each direction is about 2·5 knots. The streams are probably weak between the points.

Charts 2475, 2635.

Chart 2386.

The streams are inappreciable in Enard bay and Loch Inver and along the coast between Loch Inver and Cluas Deas, but there may be continuous out-going streams in the lochs.

5 Chart 1953.

LOCH INVER.—Loch Inver is entered between Kirkraig point and Rubba Rodha, one mile north-north-westward. A' Chleit and Soyea island (*Lat. 58° 09' N., Long. 5° 19' W.*), $8\frac{1}{2}$ cables north-eastward of it, break during westerly gales.

- 10 Several small bays indent the southern shore of Loch Inver, but Loch Bad nam Ban, south-eastward of Eilean Bad nam Ban, 7 cables eastward of Kirkraig point, is the only one available for anchorage for small vessels.

Culag hotel, situated on the south-eastern shore of the loch, about 15 2 miles east-north-eastward of Kirkraig point, is conspicuous; in front of the hotel is a mound. Lochinver church, 2 cables north-north-eastward of Culag hotel, and a grey stone house on the north-western shore, about $2\frac{1}{2}$ cables west-north-westward of the church, are conspicuous.

Tidal streams.—See page 599.

- 20 **Islands and dangers.—Beacons.**—Soyea island lies in the entrance to Loch Inver, with its eastern extremity about 5 cables west-north-westward of Kirkraig point. From northward the island shows two hillocks, the higher, at its eastern end, being 118 feet (36^m0) high and covered with heather. The southern coast is moderately steep-to, but foul ground and a bank, with depths of less than 5 fathoms (9^m1) over it, extend about $1\frac{1}{2}$ cables eastward from its eastern extremity.

Bogha Leathan, about one cable north-eastward of the eastern extremity of Soyea island, dries 15 feet (4^m6). There is foul ground between Bogha Leathan and the island, but in good weather, at high water, small boats can use this channel. Bo Caolas, about 3 cables north-eastward of the eastern extremity of Soyea island, dries 9 feet (2^m7), and is marked at its western end by a red iron beacon, surmounted by a cage, 30 feet (9^m1) high. A shoal, with a depth of 18 feet (5^m5) over it, and a shoal, with a depth of 27 feet (8^m2) over it, lie about half a cable west-north-westward and 2 cables north-eastward, respectively, of the beacon.

Bomore Stigh, about $2\frac{1}{2}$ cables northward of the eastern extremity of Soyea island, has a least depth of 2 feet (0^m6) over it. A rocky shoal, with a least depth of 21 feet (6^m4) over it, lies in the fairway of the northern entrance to Loch Inver, about $2\frac{1}{2}$ cables north-north-westward of Bo Caolas beacon.

A spit, with a depth of 15 feet (4^m6) over it, extends nearly half a cable westward from Rubha Rodha, and foul ground extends nearly 45 one cable westward from the point about $1\frac{1}{2}$ cables south-eastward of Rubha Rodha.

Kirkraig rock, about $1\frac{1}{2}$ cables north-north-eastward of Kirkraig point (*Lat. 58° 08' N., Long. 5° 18' W.*) and a quarter of a cable offshore, dries 4 feet (1^m2). The channel between Kirkraig rock and the shoal hank 50 east-south-eastward of the eastern extremity of Soyea island is about $3\frac{1}{2}$ cables wide.

A shoal, with a depth of 32 feet (9^m8) over it, is situated $4\frac{1}{2}$ cables north-eastward of Kirkraig point and three-quarters of a cable offshore;

Chart 1953.

a bank, with a depth of 57 feet ($17^{\text{m}}4$) over it, lies one cable farther north-eastward.

Priest rocks, about $8\frac{1}{2}$ cables east-south-eastward of Rubha Rodha and $1\frac{1}{2}$ cables from the northern shore, dry 5 feet ($1^{\text{m}}5$). A shoal with a depth of 36 feet ($11^{\text{m}}0$) over it, lies about 2 cables southward of Priest rocks. 5

Bogh' an Tairbh, about 5 cables east-north-eastward of Kirkraig point and three-quarters of a cable from the southern shore, is one foot ($0^{\text{m}}3$) high. A shoal, with a depth of 16 feet ($4^{\text{m}}9$) over it, lies 10 about 2 cables eastward of Bogh' an Tairbh, and about $1\frac{1}{2}$ cables offshore.

Eilean Bad nam Ban, about $2\frac{1}{2}$ cables east-south-eastward of Bogh' an Tairbh, is 18 feet ($5^{\text{m}}5$) high, and is fringed by a reef which extends half a cable north-westward from its western extremity. Sgeir 15 Bhuidhe, about half a cable east-north-eastward of Eilean Bad nam Ban, and the same distance offshore, is an above-water and sunken reef. A bank, with depths of less than 6 fathoms ($11^{\text{m}}0$) over it, extends about half a cable north-north-westward from Sgeir Bhuidhe.

Woman rocks, about $1\frac{1}{2}$ miles east-south-eastward of Rubha Rodha, 20 extend about half a cable from the northern shore and dry 2 feet ($0^{\text{m}}6$). A shoal bank extends about a quarter of a cable south-south-westward from these rocks. From the point on the northern shore immediately eastward of Woman rocks a spit, with a depth of 14 feet ($4^{\text{m}}3$) over it, extends about three-quarters of a cable south-south-westward. 25

Glas Leac, about $1\frac{1}{2}$ miles eastward of the eastern extremity of Soyea island and 2 cables from the northern shore, is a green-topped islet, 19 feet ($5^{\text{m}}8$) high. Foul ground, on which are two rocks, each of which dries 3 feet ($0^{\text{m}}9$), and a shoal bank, extend about half a cable northward from Glas Leac, and a shoal bank extends about a quarter of 30 30 a cable south-eastward from its eastern end. A shoal, with a least depth of 34 feet ($10^{\text{m}}4$) over it, and a shoal, with a depth of 31 feet ($9^{\text{m}}4$) over it, lie about three-quarters of a cable and $2\frac{1}{2}$ cables east-north-eastward, respectively, of Glas Leac.

Between Glas Leac (*Lat. $58^{\circ} 09' N.$, Long. $5^{\circ} 16' W.$*) and the spit 35 extending south-south-westward from the point on the northern shore immediately eastward of Woman rocks there are depths of from 24 to 40 feet ($7^{\text{m}}3$ to $12^{\text{m}}2$). This passage should only be used by small vessels.

A shoal, with a depth of 31 feet ($9^{\text{m}}4$) over it, lies about $2\frac{1}{2}$ cables south-eastward of Glas Leac and half a cable from the southern shore. 40

A shoal, with a depth of 10 feet ($3^{\text{m}}0$) over it, is situated about $5\frac{1}{2}$ cables eastward of Glas Leac and about three-quarters of a cable from the south-eastern shore; a shoal, with a depth of 9 feet ($2^{\text{m}}7$) over it, lies close north-eastward of the 10-foot ($3^{\text{m}}0$) shoal.

Foul ground, which dries 6 feet ($1^{\text{m}}8$) at its northern end, extends 45 half a cable northward from Aird Ghlas, a salient point $6\frac{1}{2}$ cables east-north-eastward of Glas Leac. The northern end of this foul ground is marked by a perch.

Anchorage.—Pier.—There is anchorage anywhere between Glas Leac and the head of the loch. The best berth for a small vessel is 50 50 with the flagstaff of Culag hotel bearing 117° and Lochinver church bearing 067° , in depths of from 4 to 5 fathoms ($7^{\text{m}}3$ to $9^{\text{m}}1$), mud; in this position the holding ground is good, but during westerly gales this anchorage is exposed, the wind blowing with full force up the loch.

Chart 1953.

Close northward of Culag hotel is a pier with a depth of 7 feet ($2^{\text{m}}1$) alongside.

Charts 1953, 2501.

- 5 Directions.**—A vessel approaching from south-westward should steer to pass half a mile northward of Rhu Coigach, and thence half a mile southward of A' Chleit; thence she should steer in mid-channel between Kirkaig point and Soyea island.

Only vessels drawing less than 15 feet ($4^{\text{m}}6$) should use the entrance 10 northward of Soyea island, on account of the 21-foot and 27-foot ($6^{\text{m}}4$ and $8^{\text{m}}2$) shoals in the fairway.

In proceeding up the loch vessels should pass southward of Glas Leac (*Lat. $58^{\circ} 09' N.$, Long. $5^{\circ} 16' W.$*).

Chart 1953.

- 15 Lochinver.**—Lochinver village, at the head of Loch Inver, has a post and telegraph office.

There is regular communication by sea with other ports on the mainland, whence there is communication by sea with the Hebrides.

Small quantities of provisions might be obtained at Lochinver.

- 20 Life-saving.**—A line-throwing apparatus is maintained at Lochinver; see page 9.

Chart 2386.

COAST.—Between Rubha Rodha (page 600) and Cluas Deas, about $5\frac{1}{2}$ miles north-north-westward, the coast is indented by several small 25 bays, none of which is suitable for anchorage.

Chart 2502.

Point of Stoer, about $1\frac{3}{4}$ miles north-north-eastward of Cluas Deas, is a bold headland, 523 feet ($159^{\text{m}}4$) high, but declining on its southern side so as to appear from a distance as an island. It presents a cliffy 30 face north-westward, and near its north-eastern extremity is a remarkable detached column, which is best seen from north-eastward.

Light.—Storm signals.—Point of Stoer light is exhibited, at an elevation of 195 feet ($59^{\text{m}}4$), from a white tower, 47 feet ($14^{\text{m}}3$) in height, situated on Cluas Deas. See view facing this page.

- 35 Storm signals** are displayed from a flagstaff close to the lighthouse.

Tidal streams.—See page 599.

Chart 1953.

Loch Roe.—Dangers.—Loch Roe, entered northward of Rubha Rodha, has a very narrow and tortuous navigable channel, in places 40 only 30 yards ($27^{\text{m}}4$) wide.

Bo Burrick, about half a cable north-north-westward of Rubha Rodha, dries 12 feet ($3^{\text{m}}7$).

Ondine rocks (*Lat. $58^{\circ} 10' N.$, Long. $5^{\circ} 19' W.$*), about 3 cables north-westward of Rubha Rodha and 2 cables offshore, have a least depth of 45 24 feet ($7^{\text{m}}3$) over them.

About $2\frac{1}{2}$ cables east-north-eastward of the northern entrance point of the loch, McAllister rock, which dries 7 feet ($2^{\text{m}}1$), extends about a quarter of a cable southward from the northern shore.

Port an t Seilisdeire, a cove on the north-western side of the loch, 50 about $4\frac{1}{2}$ cables within its entrance, has depths of from 14 to 21 feet ($4^{\text{m}}3$ to $6^{\text{m}}4$); there is a small boat landing on the western side of this cove. Achmelvich village is situated about half a mile north-eastward of the northern entrance point of Loch Roe.

Chart 2635.



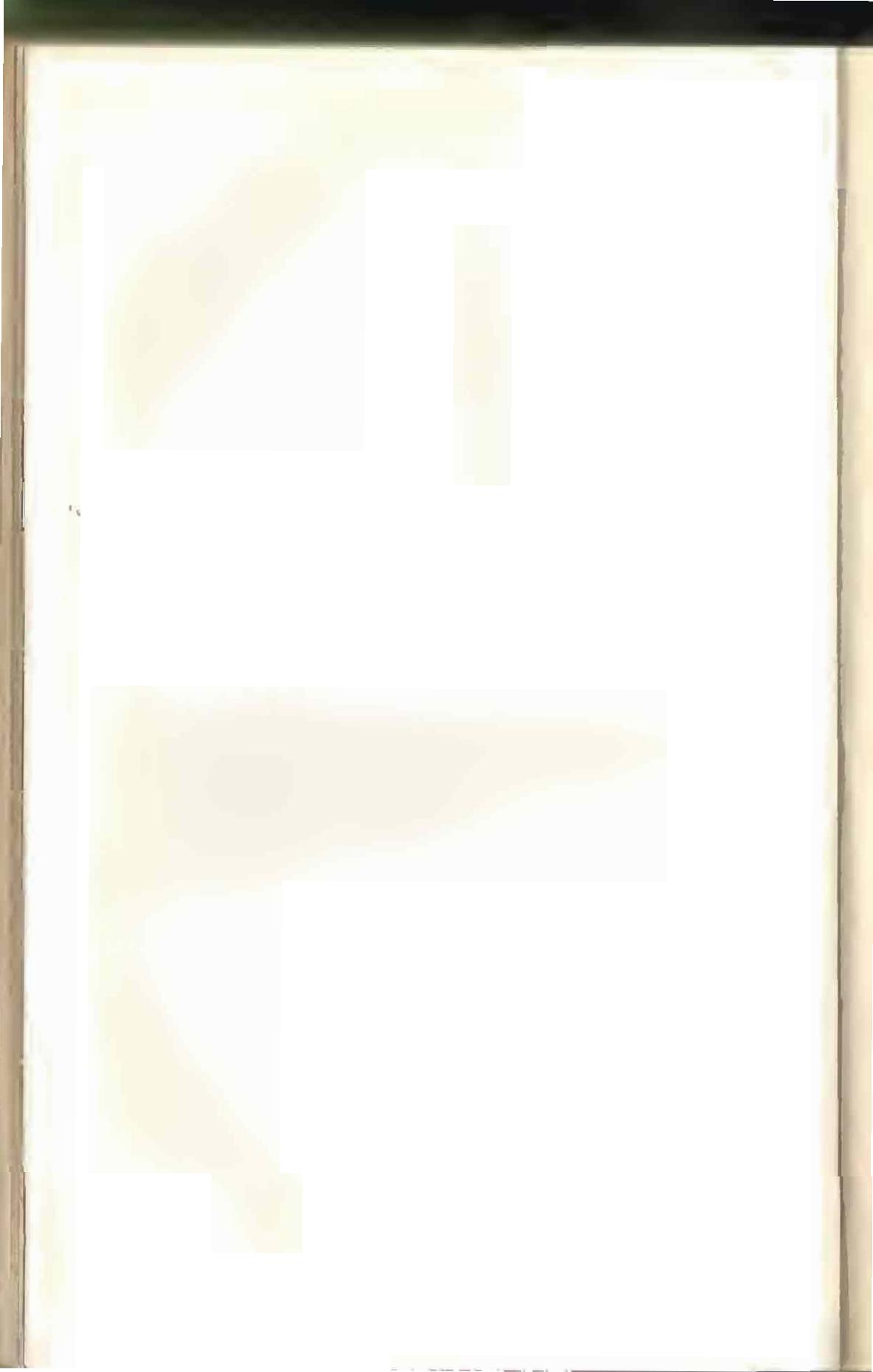
Rubh' Rô lighthouse, bearing 103°.
(Original dated 1925.)



Am Bulg, bearing 215° and just open north-westward
of Cape Wrath.
(Original dated 1915.)



Point of Sleat lighthouse from south-westward.
(Original dated 1913.)



Charts 2502, 2386.

EDDRACHILLIS BAY.—Eddrachillis bay is entered between Point of Stoer and Handa island, $8\frac{1}{2}$ miles north-eastward. At its head is the entrance to Loch Cairnbawn. There are several anchorages, both on the southern and eastern sides of this bay, the best one being Badcall bay, which is entered about $7\frac{1}{2}$ miles east-north-eastward of Point of Stoer, but it is not easy of access without local knowledge. 5

There is communication by sea between Loch Nedd, on the southern side of Eddrachillis bay, about 6 miles eastward of Point of Stoer, and Oban and Stornoway. 10

Tidal streams.—Off Handa island the north-going stream begins —0155 Stornoway (—0610 Dover), the south-going stream begins +0415 Stornoway (H.W. Dover); the spring rate in each direction is about 2 knots.

The streams across the entrance to Eddrachillis bay are probably 15 weak.

The streams are imperceptible in the outer part of Eddrachillis bay and along the coast and between the islands and rocks eastward of Point of Stoer and southward of Sound of Handa, but become gradually appreciable closer inshore and attain a spring rate of about one knot 20 in both directions in Loch Cairnbawn. In mid-channel in Caolas Cumhann, the in-going stream, spring rate 2·5 knots, begins —0550 Stornoway (+0220 Dover), the out-going stream, spring rate 2·4 knots, begins +0035 Stornoway (—0340 Dover); there are dangerous eddies on both sides of the channel when the streams are running strongly. 25

See also Table of tidal streams for station Loch Cairnbawn "A" in Tidal Streams European Waters, Part II, 1948.

Coast.—Aspect.—The shores of Eddrachillis bay are rocky.

Between Point of Stoer and Oldany island, 3 miles eastward, the southern shore of Eddrachillis bay forms a bight, at the head of 30 which is Clachnessie bay.

Chart 2502.

Between Oldany island (*Lat. 58° 15' N., Long. 5° 15' W.*) and the entrance to Loch Nedd the coast consists of steep grassy slopes, thence to the entrance of Loch Cairnbawn it is covered with heather. 35

Between the entrance of Loch Cairnbawn and Badcall bay the eastern shore of Eddrachillis bay is much indented, and the coast consists mainly of heather-covered slopes with a few stunted trees and bushes.

Between the north-western entrance point of Badcall bay and Meall Dearg, one mile northward, the coast presents a barren front with patches of heather on the higher slopes, but from Meall Dearg to Rubha Shios, one mile north-north-westward, there are grassy slopes on the tops of the cliffs. This part of the coast consists of a series of rocky points and bights. 40

Islands and dangers on the southern and eastern sides of Eddrachillis bay.—Between Point of Stoer and Oldany island there are no dangers outside one cable offshore except off Rubh an Dunain, a rocky point about $1\frac{1}{2}$ miles east-south-eastward of Point of Stoer, and for about half a mile southward of Rubh an Dunain on its eastern side. 50 A reef, which dries, extends about three-quarters of a cable northward from, and a patch, with a depth of 3 fathoms (5^m5) over it, lies about $1\frac{1}{2}$ cables northward of Rubh an Dunain. Southward of this point, Culkein bay is fronted by a rocky stony bank, which dries, and a bank,

Chart 2502.

with depths of less than 3 fathoms (5^m5) over it, which extends from $1\frac{1}{2}$ to 2 cables offshore.

There is a small pier which dries on the north-western side of Culkein bay.

Oldany island is 320 feet (100 $m3$) high and covered with grass. The passage between it and the coast, southward, is very narrow and can only be used by small boats. About midway along the south-western side of the island a bank, with depths of less than 5 fathoms (9^m1) over it, extends about $2\frac{1}{2}$ cables offshore; on it lie an islet, close offshore, and some patches of rocks, which dry.

Eilean Chrona, 50 feet (15 $m2$) high, is situated about half a mile south-westward of Rubha nan Cosan, the western extremity of Oldany island. The north-western and south-eastern sides of the island are steep-to; foul ground, on which are some rocks which dry, extends about one cable and half a cable, respectively, from its south-western and north-eastern sides.

The channel between Eilean Chrona and Rubha nan Cosan (*Lat. $58^{\circ} 15' N.$, Long. $5^{\circ} 17' W.$*) is divided into two narrow but deep passages by foul ground. Bogha Mòr, a rock which dries 9 feet (2^m7), lies about 2 cables north-eastward of Eilean Chrona, at the western end of the foul ground, and a rock, 10 feet (3^m0) high, situated about $1\frac{1}{2}$ cables westward of Rubha nan Cosan, lies at its eastern end. A rock, 10 feet (3^m0) high, lies close south-westward of Rubha nan Cosan and a rock, which dries, lies about one cable northward of the same point and about three-quarters of a cable offshore.

An island lies close offshore westward of the northern extremity of Oldany island. A rock, which dries 12 feet (3^m7), lies about half a cable westward and rocks, which dry 8 and 10 feet (2^m4 and 3^m0), respectively, lie within three-quarters of a cable northward of the northern extremity of Oldany island. Eilean nan Uan, about 7 cables east-south-eastward of the northern extremity of Oldany island, is connected, southward, with the north-eastern extremity of that island, by foul ground; the southern end of the bight thus formed is obstructed by islets and by sunken rocks, some of which dry.

Numerous islets, covered with grass, and above-water and sunken rocks, lie within 5 cables offshore between the eastern end of Oldany island and the entrance to Loch Nedd; only the outer islets and dangers will be described.

A rock, with a depth of less than 6 feet (1^m8) over it, lies about 3 cables east-south-eastward; and an islet, 67 feet (20^m4) high, with foul ground and shoal depths extending about half a cable northward from it, lies about 7 cables east-south-eastward of the north-eastern extremity of Oldany island. A shoal, with a depth of 30 feet (9^m1) over it, lies about $1\frac{1}{4}$ cables northward of the islet, 67 feet (20^m4) high, and two rocky patches, with depths of 51 and 52 feet (15^m5 and 15^m8) over them, lie, respectively, about $6\frac{1}{2}$ and 5 cables northward of the same islet.

Sgeir Liath, 75 feet (22^m9) high, about 3 cables north-westward of Rubh' Dhubhard (*Lat. $58^{\circ} 15' N.$, Long. $5^{\circ} 11' W.$*), the western entrance point of Loch Nedd, is barren with patches of moss; it lies at the eastern end of the foul area mentioned above, and on the eastern side of foul ground which extends about half a cable northward and $1\frac{1}{2}$ cables south-westward from it.

Chart 2502.

Bogout rock, which dries one foot (0^m3), lies about 2 cables westward of Sgeir Liath; a shoal, with a depth of 27 feet (8^m2) over it, lies nearly one cable north-westward of Bogout rock.

A rocky shoal, with a depth of 29 feet (8^m8) over it, lies about $6\frac{1}{2}$ cables north-north-eastward, and two banks, with depths of 50 and 49^m feet (15^m2 and 14^m9) over them, respectively, lie about 3 and $7\frac{1}{2}$ cables northward, of Sgeir Liath. 5

Loch Dhrombaig and Loch Nedd are described on page 609.

Between Rubha na Maoile, the eastern entrance point of Loch 10 Nedd, and Rubha nam Fias, the southern entrance point of Loch Cairnbawn, the coast is much indented.

The entrance to Camas nam Bad, close south-eastward of Rubha na Maoile, is obstructed by a rock, which dries 11 feet (3^m4), situated on a shoal bank about $2\frac{1}{2}$ cables east-south-eastward of Ruhha na Maoile. 15 Foul ground, on which is an islet, extends about one cable westward from the north-eastern shore of the bay.

Foul ground, terminating eastward, with rocks which dry 14 and 8 feet (4^m3 and 2^m4), situated about $8\frac{1}{2}$ cables eastward of Rubha na Maoile, obstructs the western side of the entrance to Loch Airdbhair, a 20 long narrow loch again obstructed about a quarter of a mile within its entrance by a peninsula and foul ground which extend across the loch. Two pools southward of the peninsula are also separated from each other by foul ground.

Edean Rairidh, separated from the shore, south-eastward, by a 25 narrow passage which dries, lies about one mile east-north-eastward of Rubha na Maoile; its north-western end is foul for about half a cable offshore. A rock, with a depth of less than 6 feet (1^m8) over it, lies about a quarter of a cable off its northern side, and foul ground, on which there are sunken rocks, some of which dry, extends one cable 30 northward from its north-eastern end (*Lat. 58° 16' N., Long. 5° 07' W.*).

A shoal, with a depth of 43 feet (13^m1) over it, lies about $2\frac{1}{2}$ cables north-westward of the western extremity of Eilean Rairidh.

A rock, with a depth of less than 6 feet (1^m8) over it, lies about midway between Eilean Rairidh and Rubha nam Fias, and about half a 35 cable offshore.

Meall Mòr, the westernmost of the islands fronting the eastern side of Edrachillis bay, is situated about 2 miles north-eastward of the northern extremity of Oldany island. It is 136 feet (41^m4) high and covered with grass. A shoal, with a depth of 32 feet (9^m8) over it, lies 40 about three-quarters of a cable westward of the south-western extremity of the island. A shoal, with a depth of 8 feet (2^m4) over it, with an islet as its north-western end, lies about three-quarters of a cable eastward of the eastern side of Meall Mòr.

Meall Beag, 147 feet (44^m8) high and covered with grass, lies about 45 $1\frac{1}{2}$ cables east-south-eastward of Meall Mòr. The navigable passage between these two islands is reduced to about half a cable by the 8-foot (2^m4) shoal described above.

Sgeir a' Chlaidbeimh, about 4 cables east-south-eastward of Meall Beag is barren, with patches of moss, and is 35 feet (10^m7) high. A 50 bank, on which is a reef that dries 8 feet (2^m4), extends about three-quarters of a cable southward from, and a shoal, with a depth of 15 feet (4^m6) over it, lies about half a cable south-westward of Sgeir a' Chlaidbeimh. A rocky shoal, with a depth of 33 feet (10^m1) over it,

Chart 2502.

lies about 3 cables south-south-eastward of Sgeir a' Chlaidheimh.

Laelien shoal, about $7\frac{1}{2}$ cables south-eastward of Sgeir a' Chlaidheimh, has a depth of 8 feet (2^m4) over it, and the sea breaks over it during heavy gales. A shoal, with a depth of 20 feet (6^m1) over it, lies about $1\frac{1}{2}$ cables northward, and a shoal, with a depth of 34 feet (10^m4) over it, about one cable south-south-westward of Lachen shoal. A shoal, with a depth of 42 feet (12^m8) over it, lies about $2\frac{1}{2}$ cables west-south-westward of Lachen shoal. The north-eastern extremities of Sgeir a' Chlaidheimh and Meall Beag in line, bearing 308° , lead close north-eastward of the 42-foot (12^m8) shoal and close south-westward of the 34-foot (10^m4) shoal.

Ravens rock, about $1\frac{1}{4}$ miles east-south-eastward of Sgeir a' Chlaidheimh, dries 5 feet (1^m5). A bank, with a depth of 13 feet (4^m0) over its southern extremity, extends about three-quarters of a cable south-eastward from Ravens rock.

Point of Stoer just open of the northern extremity of Oldany island, bearing 265° , leads close southward of the 13-foot (4^m0) bank.

A rocky shoal, with a depth of 31 feet (9^m4) over it, lies about $1\frac{1}{2}$ cables north-north-westward of Ravens rock; and a rocky bank, with a depth of 51 feet (15^m5) over it, lies about midway between Ravens rock and Lachen shoal.

Calva Beag (*Lat. $58^\circ 17' N.$, Long. $5^\circ 09' W.$*), the north-western extremity of which is situated about $8\frac{1}{2}$ cables eastward of Sgeir a' Chlaidheimh, is 126 feet (38^m4) high and covered in grassy slopes. A rock, 4 feet (1^m2) high, and a rock, with a depth of less than 6 feet (1^m8) over it, lie about half a cable northward of the northern end of Calva Beag.

Foul ground, on which lie two islets and a rock, extends about one cable south-eastward from the southern side of Calva Beag.

Calva Mòr, about one cable eastward of Calva Beag, is 213 feet (64^m9) high and covered with grassy slopes; its eastern extremity is so nearly joined to the mainland eastward as to leave only a narrow channel, which is available for small boats after half-tide. Foul ground extends about three-quarters of a cable southward from the south-western side of Calva Mòr, and there is a rocky spit which extends about three-quarters of a cable southward from the middle of the southern side of this island.

The narrow channel between Calva Mòr and Calva Beag has a least depth of 6 fathoms (11^m0); in the southern entrance to this channel, about three-quarters of a cable south-westward of the south-western point of Calva Mòr is a shoal with a depth of 16 feet (4^m9) over it.

Badcall islands are a group of islands, islets, and rocks extending about 2 miles north-eastward from Meall Mòr and Meall Beag. These islands are divided into two groups, Meall Mòr and Meall Beag forming the south-western group, and lying about $8\frac{1}{2}$ cables from the north-eastern group. The four larger islands of the north-eastern group are Eilean na Rainich, Ceannamhor, Eilean na Bearachd, and Eilean Garbh.

Ox rock, about 7 cables north-eastward of Meall Beag, is a bare rock, 27 feet (8^m2) high, with a rock, 6 feet (1^m8) high, close off its eastern end. Foul ground extends nearly one cable from the eastern end and a reef which dries extends about half a cable west-south-westward from

Chart 2502.

the western end of Ox rock. A shoal, with a depth of 31 feet ($9^{\text{m}}4$) over it, lies about $1\frac{1}{4}$ cables westward of Ox rock.

Clansman shoal, with a depth of 15 feet ($4^{\text{m}}6$) over it, lies about 4 cables east-north-eastward of Ox rock. A shoal, with a depth of 29 feet ($8^{\text{m}}8$) over it, lies within 2 cables north-eastward of Clansman shoal. 5

Eilean a' Bhreitheimh, about $8\frac{1}{2}$ cables north-north-eastward of Meall Mòr, is 81 feet ($24^{\text{m}}7$) high; it is covered with grass, except on its western side, which is bare. A spit, with a depth of 24 feet ($7^{\text{m}}3$) 10 over its extremity, extends about one cable westward from the western extremity of Eilean a' Bhreitheimh (*Lat. $58^{\circ} 18' N.$, Long. $5^{\circ} 11' W.$*), and on this spit, about midway between its western extremity and the islet, is a rock, which dries 3 feet ($0^{\text{m}}9$), and close westward of this rock is another rock, with a depth of less than 6 feet ($1^{\text{m}}8$) over it. 15 A shoal, with a least depth of 14 feet ($4^{\text{m}}3$) over it, lies one cable north-westward of the western extremity of Eilean a' Bhreitheimh. Close northward of Eilean a' Bhreitheimh is Meall Tuath, a rocky islet, 20 feet ($6^{\text{m}}1$) high. Half a cable eastward of the north-eastern end of Eilean a' Bhreitheimh is a shoal with a least depth of 34 feet ($10^{\text{m}}4$) over it. 20

Eilean na Rainich, about $4\frac{1}{2}$ cables eastward of Eilean a' Bhreitheimh, is 55 feet ($16^{\text{m}}8$) high and covered with heather. Between the southern ends of Eilean na Rainich and Eilean a' Bhreitheimh is Dubh sgeir, consisting of two small barren rocky islets, 13 and 21 feet ($4^{\text{m}}0$ and $6^{\text{m}}4$) high, with several rocks, which dry, and foul ground, extending about one cable southward, 2 cables south-eastward, 3 cables east-south-eastward and 3 cables east-north-eastward from the western extremity of the south-western islet. Rocks, which dry, lie about half a cable westward of the north-western and south-western ends of Eilean na Rainich. 30

Ceannamhor, about one cable northward of Eilean na Rainich, is 138 feet ($42^{\text{m}}1$) high and has patches of grass and heather on it. An islet, 40 feet ($12^{\text{m}}2$) high, and two rocks lie close off the south-western extremity, and a shoal, with a depth of 7 feet ($2^{\text{m}}1$) over it, lies about one cable northward of the north-western extremity of Ceannamhor. 35

Eilean na Bearachd, the western extremity of which lies about one cable eastward of Ceannamhor, is 138 feet ($42^{\text{m}}1$) high and is covered with heather. A shallow hank, on which are an islet, 55 feet ($16^{\text{m}}8$) high, and a rock, extends about three-quarters of a cable westward and south-westward from the western extremity; a bank, with a depth of 10 feet ($3^{\text{m}}0$) at its southern end, on which there is a rock which dries 2 feet ($0^{\text{m}}6$), extends about one cable southward from the southern extremity; and a rocky spit, most of which dries, extends about three-quarters of a cable northward from the northern extremity of Eilean na Bearacbd (*Lat. $58^{\circ} 19' N.$, Long. $5^{\circ} 10' W.$*). 40

Sgeir an Tairbh, about three-quarters of a cable south-eastward of the eastern extremity of Eilean na Bearachd, is a barren rock, 3 feet ($0^{\text{m}}9$) high, which lies at the south-western end of foul ground which extends about half a mile north-north-eastward into Badcall bay and about 3 cables east-north-eastward to the mainland. An island, 50 89 feet ($27^{\text{m}}1$) high, lies about one cable north-eastward of Sgeir an Tairbh and a similar distance eastward of the north-eastern extremity of Eilean na Bearachd. A shoal, with a depth of 35 feet ($10^{\text{m}}7$) over it, lies about 2 cables south-eastward of Sgeir an Tairbh. 45

Chart 2502.

Sgeir an Tairbh, the western shore of the 89-foot ($27^{\text{m}}1$) island and the western edge of the foul ground northward of it form the eastern side of South channel leading into Badcall bay, *see page 603.*

- 5 Eilean Garbh, the southern end of which lies about $1\frac{1}{2}$ cables northward of the western extremity of Eilean na Bearachd, consists of two islands almost joined together, 102 and 74 feet ($31^{\text{m}}1$ and $22^{\text{m}}6$) high, respectively. A bank, with a depth of 47 feet ($14^{\text{m}}3$) over it, lies about $1\frac{1}{2}$ cables westward of the southern extremity of Eilean Garbh;
 10 foul ground, on which is an islet 17 feet ($5^{\text{m}}2$) high, extends about one cable northward from the northern end of the northern island.

Eilean Riabhach, 82 feet ($25^{\text{m}}0$) high, lies about one cable northward of the southern island of Eilean Garbh.

- About 4 cables northward of Eilean a' Bhreithheimh there is a group of 15 islets and rocks, Glas Leac, the northernmost and largest, being 80 feet ($24^{\text{m}}4$) high and covered with heather. Foul ground, on which there are several sunken rocks, some of which dry, and, at the southern end of which lies an islet 17 feet ($5^{\text{m}}2$) high, extends about $1\frac{1}{2}$ cables southward from Glas Leac. A shoal, with a depth of 15 feet ($4^{\text{m}}6$) over it, lies 20 close off the northern end of Glas Leac. Meall Earca, the south-westernmost islet of the group, 67 feet ($20^{\text{m}}4$) high and barren, lies about one cable south-westward of Glas Leac. A rocky shoal, with a least depth of 10 feet ($3^{\text{m}}0$) over it, lies about $2\frac{1}{2}$ cables westward of Meall Earca. The western extremity of Ox rock, bearing 138° and 25 open south-westward of Eilean a' Bhreithheimh (*Lat. $58^{\circ} 18' N.$, Long. $5^{\circ} 11' W.$*), leads south-westward of this 10-foot ($3^{\text{m}}0$) shoal.

There are several channels between the Badcall islands leading to Badcall bay, the principal of which are:—South channel, eastward of Eilean na Bearachd. The channel between Eilean na Rainich and 30 Eilean na Bearachd, on the south-east, and Eilean a' Bhreithheimh, Ceannamhor, and Eilean Garbh, on the north-west. Main channel, between Eilean a' Bhreithheimh and Ceannamhor, on the south, and Glas Leac group and Eilean Garbh, on the north, and thence between Eilean na Bearachd and Eilean Garbh. Leopach channel, between 35 Eilean Riabhach and the mainland north-eastward. South channel is the safest channel for a vessel without local knowledge to use, as the islands are not easily identified.

In addition to the dangers already described, a rock, with a depth of 8 feet ($2^{\text{m}}4$) over it, lies in the north-western entrance to Leopach 40 channel, about one cable northward of Eilean Riabhach. The dangers, other than those already described, can best be seen on the chart.

Islands and dangers in the northern part of Eddrachillis bay.—From the northern entrance point of Camas an Tairidh, about $1\frac{1}{2}$ miles north-north-westward of the north-western entrance point of 45 Badcall bay, several rocks, from 8 to 12 feet ($2^{\text{m}}4$ to $3^{\text{m}}7$) high, extend about $3\frac{1}{2}$ cables south-westward.

Charts 2502, 2503.

Eilean a' Bhui, about $1\frac{1}{2}$ cables north-north-westward of Rubha Slios (page 603), is 55 feet ($16^{\text{m}}8$) high; foul ground extends about $1\frac{1}{2}$ 50 cables south-westward from this islet, and the channel between Eilean a' Bhui and the mainland east-south-eastward is foul.

Chart 2503.

Handa island (page 603) lies about 2 cables offshore; it attains an elevation of 406 feet ($123^{\text{m}}7$) in its north-western part, but its northern

Chart 2503.

part is nearly as high, and the island slopes gradually to its southern coast. The northern and western coasts of the island consist of precipitous, dark red and brown sandstone cliffs from 200 to 370 feet (61^m0 to 112^m8) high; numerous sea birds, chiefly guillemots and kittiwakes, resort to them during the breeding season, and whiten them in horizontal lines. Several detached rocks, which dry, lie less than one cable off the cliffs. 5

Bogha Mòr, about 1½ cables south-westward of the western extremity of Handa island (*Lat. 58° 23' N., Long. 5° 12' IV.*), is a group of rocks, 10 which dry from 5 to 7 feet (1^m5 to 2^m1). The rocks are always marked by breakers, except with very high tides and smooth water. They are steep-to on their seaward side, and can be approached to within one cable. Stafford Arms hotel, at the head of Scourie bay, 1½ miles south-eastward of the southern extremity of Handa island, 15 bearing 121° and just open south-westward of Pairec a' Chladaich, leads south-westward of Bogha Mòr.

Glas Leac, an islet situated about 4½ cables eastward of the southern extremity of Handa island, is 43 feet (13^m1) high, and its summit is covered with grass; the north-western coast of this islet is cliffy. 20 A ledge of rock, which dries, extends about one cable northward, and several rocks, some of which dry, lie about 2 cables eastward, of the north-eastern end of Glas Leac.

Chart 2502.

Anchorages and lochs on southern side of Eddrachillis bay.—25
Directions.—Between Oldany island and the entrance to Loch Cairnbawn there are several small lochs and indentations in which a small vessel with local knowledge can obtain good anchorage, but these anchorages are generally not more than one cable in width, with several rocks in their entrances. The largest and most important are 30 Loch Dhrombaig, which is entered about one mile east-south-eastward of the eastern extremity of Oldany island, and Loch Nedd.

Loch Dhrombaig should be approached from north-eastward, taking care to avoid Bogout rock (page 605). Thence a vessel should pass close north-westward of Eilean an Achaidh and Eilean Dubh Chul 35 Cinn. Eilean an Achaidh (*Lat. 58° 15' N., Long. 5° 12' W.*) is situated about 3 cables west-south-westward of Sgeir Liath, and Eilean Dubh Chul Cinn lies close south-westward of Eilean an Achaidh.

Loch Nedd affords anchorage about 5 cables within the entrance, in a depth of 6½ fathoms (11^m9). A vessel entering this loch should be 40 careful to avoid a shoal, with a depth of 16 feet (4^m9) over it, lying on the western side of the fairway, about 2½ cables south-eastward of the western entrance point.

Small quantities of provisions might be obtained at Drumbeg, a village 4 cables southward of Eilean Dubh Chul Cinn. There is a post 45 and telegraph office here, which is connected with the general telephone system.

Loch Cairnbawn.—Dangers.—Anchorage.—Loch Cairnbawn is entered between Rubha nam Fias (page 605), and Duartmore point, about 2½ cables northward. Stack of Glencoul, a mountain 1,619 feet 50 (493^m5) high, about 7 miles east-south-eastward of Rubha nam Fias is visible from seaward over the entrance to the loch. Eilean a' Ghaghna (page 610) is conspicuous. The loch is deep and free from dangers in the fairway, but a shoal, with a depth of 40 feet (12^m2) over

Chart 2502.

it, lies close outside the entrance about 4 cables north-north-westward of Rubha nam Fias, and a bank, with a depth of 50 feet ($15^{\text{m}}2$) over it, lies the same distance north-westward.

- 5 Caolas Cumhann connects Loch Cairnbawn with the two inner lochs, Loch Glencoul and Loch Glendhu.

A shoal, with a depth of 14 feet ($4^{\text{m}}3$) over it, lies about $1\frac{1}{2}$ cables south-eastward of Rubha nam Fias and three-quarters of a cable from the south-western shore; from this shoal foul ground, on which are a group of sunken rocks, some of which dry, extends about $2\frac{1}{2}$ cables southward and south-south-westward across Kerracbar bay, which is entered about a quarter of a mile south-south-eastward of Rubha nam Fias.

From a position about 2 cables south-south-eastward of the northern entrance point of Kerrachar bay a group of above-water rocks extends about half a cable offshore.

Eilean a' Ghambna, about $1\frac{1}{4}$ miles south-eastward of Rubha nam Fias and $1\frac{1}{2}$ cables from the south-western shore, is 170 feet ($51^{\text{m}}8$) high and covered with grass and a few small bushes; in summer its colour 20 is much greener than that of the adjacent land. A spit, with a depth of 9 feet ($2^{\text{m}}7$) over it, extends about half a cable southward from the southern end of Eilean a' Ghambna; a shoal, with a depth of 31 feet ($9^{\text{m}}4$) over it, lies about one cable south-eastward of the same point.

- 25 Anchorage can be obtained southward of Eilean a' Ghambna (*Lat. $58^{\circ} 15' N.$, Long. $5^{\circ} 04' W.$*), in a depth of 7 fathoms ($12^{\text{m}}8$), good holding ground, but the anchorage space is restricted.

Caolas Cumhann.—Dangers.—Anchorage.—Caolas Cumhann, the narrows leading from Loch Cairnbawn into Lochs Glencoul and 30 Glendhu, has moderate depths, with a least width of half a cable. The north-western side of Caolas Cumhann is bounded by Garbh eilean, an islet 173 feet ($52^{\text{m}}7$) high, joined at its western end to the mainland north-westward by a reef which dries.

On the south-eastern shore of Caolas Cumhann, at its north-eastern 35 end, is an inn and a ferry-house. A ferry plies between the pier situated close to the inn and a point on the northern shore about $1\frac{1}{2}$ cables north-north-westward. On the northern shore, just within Caolas Cumhann, about $4\frac{1}{2}$ cables north-north-westward of the north-eastern point of Garbh eilean, is a house, with plantations around it; 40 several low flat islets front the shore in this vicinity, which should be given a berth of one cable.

Foul ground extends a short distance from the south-eastern shore of Caolas Cumhann for about $1\frac{1}{2}$ cables within its south-western entrance. The north-western shore is steep-to, with the exception of 45 a shoal, with a depth of 26 feet ($7^{\text{m}}4$) over it, situated a quarter of a cable southward of the south-western end of Garbh eilean; and a foul area close offshore between positions about $1\frac{1}{2}$ and 3 cables east-north-eastward of the south-western extremity of the island. A shoal, with a depth of 29 feet ($8^{\text{m}}8$) over it, lies nearly half a cable off the southern 50 shore about one cable east-south-eastward of the same extremity; a shoal, with a depth of 15 feet ($4^{\text{m}}6$) over it, lies in mid-channel, about halfway through Caolas Cumhann. A rock, with a depth of 4 feet ($1^{\text{m}}2$) over it, is situated about $2\frac{1}{2}$ cables east-north-eastward of the eastern extremity of Garbh eilean.

Chart 2502.

A vessel can anchor about $2\frac{1}{2}$ cables east-south-eastward of the eastern extremity of Garbh eilean, in the entrance to Camas na Cusgaig, an inlet on the south-eastern side of the peninsula bordering the south-western side of Caolas Cumhann, with the house described above bearing 326° and open north-eastward of the north-western entrance point of Camas na Cusgaig, out of the influence of the tidal streams, in a depth of 7 fathoms ($12^{\text{m}}8$). It is not advisable to anchor here at night, as if too far out the holding ground is had, and if too close in the space is very limited. 10

A vessel can anchor on the north-eastern side of the islets mentioned above, about $3\frac{1}{2}$ cables north-eastward of the eastern extremity of Garbh eilean, with the eastern extremity of the easternmost islet bearing 160° , in a depth of 8 fathoms ($14^{\text{m}}6$).

Submarine cable.—Beacons.—A submarine cable, marked by 15 beacons, crosses Caolas Cumhann about one cable eastward of Garbh eilean. *See page 7.*

Lochs Glencoul and Glendhu.—Dangers.—Anchorage.—Lochs Glencoul and Glendhu are separated from each other by the high land of Beinn Aird da Loch, which terminates in Aird da Loch (*Lat. $58^{\circ} 15' N.$, 20 $^{\circ} 59' 00' W.$*), $9\frac{1}{2}$ cables east-south-eastward of the eastern extremity of Garbh eilean. 20

Loch Glencoul, the southern arm, has moderate depths; its north-eastern shore is bold, but several rocks, which dry, lie off its south-western shore, the positions of which may be seen on the chart. 25

Loch Glendhu, the northern arm, is free from dangers, and affords anchorage throughout, in depths of from 6 to 11 fathoms ($11^{\text{m}}0$ to $20^{\text{m}}1$), mud, but the squalls in southerly and south-western gales are very heavy.

Tidal streams.—*See page 603.* There is little or no stream in 30 Lochs Glencoul and Glendhu.

Directions for Loch Cairnbawn and Caolas Cumhann.—A vessel bound for Loch Cairnbawn should pass southward of Meall Mòr, Meall Beag, Sgeir a' Chlaidheimh, and Ravens rock; thence she can steer into and up Loch Cairnhawn, keeping in mid-channel until 35 Caolas Cumhann opens out. She should keep close to the north-western side of the channel when passing through the narrows, taking care to avoid the shoal, with a depth of 26 feet ($7^{\text{m}}9$) over it, mentioned above. After passing through the narrows she can steer for the desired anchorage. 40

Anchorages on eastern side of Eddrachillis bay.—Dangers.—Directions.—Calva bay, on the north-eastern side of Calva Mòr, affords fair anchorage to small vessels.

A rock, which dries 9 feet ($2^{\text{m}}7$), is situated $1\frac{1}{2}$ cables south-eastward of the northern extremity of Calva Mòr and close off the eastern side of 45 that island; a shoal, with a depth of 29 feet ($8^{\text{m}}8$) over it, lies about one cable east-south-eastward of this rock.

The anchorage is off the eastern side of the island, about $2\frac{1}{2}$ cables south-eastward of its northern extremity, in a depth of about 8 fathoms ($14^{\text{m}}6$), with swinging room of three-quarters of a cable. 50

The shores of Badcall bay are fringed by islets and rocks, which dry; these islets are covered with patches of grass and heather. A vessel can obtain anchorage, in a depth of $7\frac{1}{2}$ fathoms ($13^{\text{m}}7$), mud and sand, with swinging room of about one cable. A fisherman, who would act

Chart 2502.

as a pilot, might be procured from the cottages on the mainland on the north-eastern side of Leopach channel.

A vessel bound for Badcall bay shoud pass northward of Meall 5 Mòr, and about $1\frac{1}{2}$ cables southward of Ox rock, thence she should steer for the entrance to South channel, passing about one cable north-westward of Clansman shoal, and south-eastward of the rock, which dries 2 feet ($0^{\text{m}}6$), three-quarters of a cable southward of the southern extremity of Eilean na Bearachd. She should pass north-westward of 10 Sgeir an Tairbh, and thence steer through South channel, which has a least width of rather less than three-quarters of a cable; thence she may steer for the anchorage, with the south-eastern extremity of Eilean Garbh, in line with a knoll on the slope of Ceannamhor, bearing 236° , astern, taking care to avoid Sgeir nam Fionnag, a small rock, 15 3 feet ($0^{\text{m}}9$) high, 2 cables north-eastward of the north-eastern extremity of Eilean na Bearachd.

Badcall hamlet is situated on the northern shore of Badcall bay; the church and manse are situated near the north-eastern corner of the bay; the latter is conspicuous. A small block of buildings is situated 20 on the eastern shore of the bay, about a quarter of a mile southward of Badcall church. Close to this block of buildings is a small stone pier, with a least depth of 2 feet ($0^{\text{m}}6$) alongside. Vessels from Oban and Stornoway call here.

Charts 2502, 2503.

25 Scourie bay is entered between Eilean a' Bhuic and Creag a' Mhàil (*Lat. $58^{\circ} 22' N.$, Long. $5^{\circ} 10' W.$*), 5 cables north-eastward. It is open north-westward, and the navigable channel into the bay is contracted to a width of about $1\frac{1}{2}$ cables by rocks extending from both sides; this bay is not recommended for anchorage.

30 There is a boat-slip on the northern side of the head of the bay. Mossman rock, about 3 cables east-north-eastward of the northern extremity of Eilean a' Bhuic and $1\frac{1}{4}$ cables from the southern shore, has a depth of 3 feet ($0^{\text{m}}9$) over it; a shoal, with a depth of 27 feet ($8^{\text{m}}2$) over it, and a shoal, with a depth of 21 feet ($6^{\text{m}}4$) over it, lie between 35 Mossman rock and the southern shore.

A rock, with a depth of 14 feet ($4^{\text{m}}3$) over it, is situated on the northern side of Scourie bay, about one cable southward of Creag a' Mhàil. A rock, with a depth of 5 feet ($1^{\text{m}}5$) over it, lies about $1\frac{1}{2}$ cables south-eastward of Creag a' Mhàil and three-quarters of a cable offshore; 40 a rock, with a depth of less than 6 feet ($1^{\text{m}}8$) over it, is situated about $2\frac{1}{2}$ cables south-eastward of the same point and about one cable offshore. A shoal, with a depth of 27 feet ($8^{\text{m}}2$) over it, lies in the middle of the bay, about 5 cables south-eastward of Creag a' Mhàil.

Scourie village is situated at the head of Scourie bay; the hotel is a 45 two-storeyed building. There is a post and telegraph office here. Small quantities of provisions can be obtained at Scourie.

Chart 2503.

COAST.—Northward of Handa island, which fronts the coast just northward of Creag a' Mhàil, the coast consists of dark and rugged rock 50 rising abruptly to hills from 300 to 450 feet ($91^{\text{m}}4$ to $137^{\text{m}}2$) high.

Handa island and the dangers off its southern side are described on page 608. A shoal bank extends about $1\frac{1}{2}$ cables from the eastern side of Handa island.

Chart 2503.

Sound of Handa.—Dangers.—Sound of Handa, the channel between Handa island (*Lat. 58° 23' N., Long. 5° 12' W.*) and the mainland, has a least width of about 2 cables, but it is contracted by Bogha Morair, which lies in mid-channel, about $3\frac{1}{2}$ cables south-south-eastward of Roinn Dubh, the eastern extremity of Handa island, and has a least depth of 6 feet (1^m8) over it. Shoals, with depths of $4\frac{1}{2}$ and $4\frac{1}{4}$ fathoms (8^m2 and 7^m8) over them, lie in the fairway, about 3 and 2 cables south-eastward, respectively, of Roinn Dubh. Bogha Iasg, about $1\frac{1}{2}$ cables north-eastward of Roinn Dubh, has a least depth of 7 feet (2^m1) over it. Sgeir Bellaire, about $3\frac{1}{2}$ cables north-eastward of Roinn Dubh, is 2 feet (0^m6) high, and a shoal bank extends about half a cable south-westward from it. A rock, which dries 3 feet (0^m9), lies about $1\frac{1}{2}$ cables west-north-westward of Sgeir Bellaire and about three-quarters of a cable south-westward of the south-western extremity of Eilean an Aigeich. Eilean an Aigeich is 80 feet (24^m4) high; about three-quarters of a cable northward of its western extremity is a shoal, with a depth of 5 fathoms (9^m1) over it.

Sgeiran Glasa lie close northward of Eilean an Aigeich; a shoal, with a depth of 5 fathoms (9^m1) over it, lies about $2\frac{3}{4}$ cables northward of Sgeiran Glasa and $1\frac{1}{2}$ cables offshore.

Between Sgeirean Glasa and Rubha Ruadh, about one mile north-north-eastward, are several banks, with a least depth of 7 fathoms (12^m8) over them, extending as much as 4 cables offshore.

Rubha Ruadh is rather low and of a remarkable reddish colour. Close offshore about 3 cables east-north-eastward of it, is Sgeir Ruadh, a small bare islet, 30 feet (9^m1) high.

Tidal streams.—The north-going stream begins —0410 Stornoway (+0400 Dover), the south-going stream begins +0215 Stornoway (-0200 Dover); the spring rate in each direction in the narrow part of the sound is from 2 to 3 knots. There are heavy overfalls on Bogha Morair.

These streams begin 2 hours or more earlier than the corresponding streams westward of Handa island and off the coast generally, and are probably affected by eddies which form northward of the island during about the second half of the north-going coastal stream, and southward of it during about the second half of the south-going coastal stream.

Directions.—A vessel should not attempt to navigate Sound of Handa without local knowledge as good leading marks cannot be given. When proceeding northward through the sound, a vessel should keep on the mainland side while passing Bogha Morair; thence she should steer with the summit of Eilean a' Bhuic, bearing 207° astern, and open north-westward of Creag a' Mhàil (*Lat. 58° 22' N., Long. 5° 10' W.*), which leads through the fairway of the north-eastern part of the sound. She should thence steer north-westward, between Bogha Iasg and Sgeir Bellaire, to the open sea.

Port of Tarbet.—Anchorage.—The Port of Tarbet is a small bight in the mainland, eastward of and sheltered by Eilean an Aigeich and the adjacent islets, where boats find tolerably good shelter. There are a few cottages on the shore of the bay.

There is temporary fine-weather anchorage, in depths of from 10 to 14 fathoms (18^m3 to 25^m6), mud, $1\frac{1}{2}$ cables south-eastward of the eastern end of Eilean an Aigeich.

Loch Laxford.—Anchorage.—Loch Laxford is entered between

Chart 2503.

a point $4\frac{1}{2}$ cables eastward of Rubha Ruadh and Ardmorc point, 6 cables eastward. There are several islets within the loch, and its shores are much indented.

5 There is good anchorage near the head of the loch. Loch a' Chadh-fi, a branch of Loch Laxford on its north-eastern side, is entered about $1\frac{1}{2}$ miles east-south-eastward of Ardmore point; it is a landlocked harbour for small vessels. There are several excellent anchorages for small vessels in the bays of Loch Laxford.

10 **Aspect.**—The shores of Loch Laxford are generally steep and bold, with hills from about 300 to 400 feet (91^m4 to 121^m9) high; there are a few cottages on the shores of the bays of the loch. Ardmore point is bold, and of a light tawny colour.

River Laxford flows into the head of the loch through a broad estuary.

15 **Tidal streams.**—There are no perceptible streams in Loch Laxford.

Islands and dangers.—Sgeir Ruadh, on the south-western side of the entrance to Loch Laxford, is described on page 613.

Dubh sgeirean, situated on the north-eastern side of the approach 20 to Loch Laxford from north-westward, about $1\frac{1}{2}$ miles northward of Rubha Ruadh, are a group of islets and rocks lying about 8 cables offshore. Whale islet, the south-western islet, $1\frac{1}{4}$ miles northward of Rubha Ruadh, is 55 feet (16^m8) high, dark in colour, and is the highest of the group. Whale Back, about $1\frac{1}{2}$ cables south-south-westward of 25 Whale islet, is a small rock, which dries 10 feet (3^m0); the sea always breaks on this rock, excepting at high water with a very smooth sea.

Bogha Druim, on the north-eastern side of the entrance to Loch Laxford, about 5 cables west-north-westward of Ardmore point (*Lat.* $58^{\circ} 25' N.$, *Long.* $5^{\circ} 07' W.$), is a rocky shoal, with a depth of 3 fathoms 30 (5^m5) over it. Bogha Maraich, about $4\frac{1}{2}$ cables north-westward of Ardmore point, is a rocky shoal, with a least depth of $4\frac{1}{2}$ fathoms (8^m7) over it.

Glas Leac, about $1\frac{1}{2}$ cables north-westward of Ardmore point, is 75 feet (22^m9) high; a shoal bank extends about three-quarters 35 of a cable westward from this islet. An islet, 28 feet (8^m5) high, lies close northward of Glas Leac, to which it is joined by a reef which dries. A rock, 20 feet (6^m1) high, is situated close offshore, three-quarters of a cable south-eastward of the south-eastern extremity, and foul ground, on which is a rock one foot (0^m3) high, extends about half 40 a cable southward from the southern end of Glas Leac.

From a position about 3 cables east-south-eastward of Sgeir Ruadh a chain of islet and rocks extends about one mile east-south-eastward, terminating in Eilean Ard, which is 228 feet (69^m5) high. There is a channel for small vessels between these islets and the south-western 45 shore, but there are several rocks in it, and it should not be attempted without local knowledge.

Eilean a' Mhadaidh, the north-western extremity of which is situated about $2\frac{1}{4}$ cables south-eastward of the south-eastern side of Eilean Ard, is 107 feet (32^m6) high at its eastern end. Foul ground, which dries 50 10 feet (3^m0), extends about half a cable northward from the northern side of Eilean a' Mhadaidh.

Eilean an Eireannaich, on the north-eastern side of the loch, abreast Eilean a' Mhadaidh, is 198 feet (60^m3) high, and its north-eastern end is connected with the mainland northward by a reef which dries; foul

Charts 2503.

ground extends about three-quarters of a cable west-south-westward from its southern extremity.

A shoal, with a depth of $3\frac{1}{2}$ fathoms (5^m9) over it, is situated about three-quarters of a cable south-south-westward of Rubh' na h Airde Beag, a point on the north-eastern side of the loch, about 2 cables east-south-eastward of the south-eastern extremity of Eòean an Eireannaich. Eilean Dubh nam Boe, lying in the entrance to Bagh na h Airde Beag, an inlet on the south-eastern side of Rubh' na h Airde Beag, is 68 feet (20^m7) high; a shoal, with a depth of 4 fathoms (7^m3) over it, lies 10 close south-westward of this islet, and a shoal, with a depth of $1\frac{1}{4}$ fathoms (2^m3) over it, close northward.

South-eastward of Eilean Dubh nam Boe (*Lat. $58^{\circ} 24'$ N., Long. $5^{\circ} 04'$ W.*) the north-eastern side of the loch is fringed by above-water and sunken rocks, extending as much as $1\frac{1}{2}$ cables offshore. From a 15 point on the south-western side of the loch, about $7\frac{1}{2}$ cables south-eastward of the eastern extremity of Eilean a' Mhadaidh, foul ground, which dries 2 feet (0^m6), extends about three-quarters of a cable northward.

A flat, with depths of from a quarter of a fathom to 3 fathoms 20 (0^m5 to 5^m5) over it, extends about $4\frac{1}{2}$ cables from the head of the loch, on its north-eastern side; on this flat are several islet and rocks, of which Eilean Meall a' Chaorainn, about $1\frac{1}{2}$ cables northward of the north-eastern entrance point of River Laxford, is the largest and is 25 62 feet (18^m9) high.

Eilean Port a' Choit, lying close off the south-western side of the head of the loch, is 62 feet (18^m9) high.

Anehorages.—Fanagmore bay, on the south-western side of the loch, abreast Eilean Ard, affords secure anchorage to small vessels, in depths of from 6 to 7 fathoms (11^m0 to 12^m8). On the western shore 30 of the bay is the little fishing village of Fanagmore. A vessel entering this bay should approach it south-eastward of Eilean Ard, where the channel is deep and free from dangers.

Bagh na Fionndalach Mòr, on the south-eastern side of Eilean a' Mhadaidh, affords anchorage to small vessels, in depths of from 10 to 35 12 fathoms (18^m3 to 21^m9), mud. The south-eastern side of Eòean a' Mhadaidh is nearly steep-to.

Loch a' Chadh-fi, on the north-eastern side of the loch, is entered between Eilean an Eireannaich and Rubh' na h Airde Beag, and affords landlocked anchorage to small vessels. Eòean a' Chadh-fi, lies in the 40 fairway about 6 cables within the entrance and is 100 feet (30^m5) high; a rock, about 20 feet (6^m1) high, lies about half a cable south-south-eastward of its southern extremity. There is shoal water between Eòean a' Chadh-fi and the mainland south-eastward.

The best anchorage in Loch a' Chadh-fi is close within its entrance, 45 in depths of from 9 to 10 fathoms (16^m5 to 18^m3), mud. Small craft anchor farther up the loch, in depths of from 3 to 4 fathoms (5^m5 to 7^m3). A vessel proceeding to this upper anchorage should pass westward of Eilean a' Chadh-fi (*Lat. $58^{\circ} 25'$ N., Long. $5^{\circ} 04'$ W.*), where the channel is about half a cable wide; the alteration of course east- 50 ward round the western end of the islet is sharp, but the channel being deep it presents no difficulties to a short handy vessel.

Bagh na h Airde Beag affords anchorage. The dangers in the entrance to this bay are described on page 614.

Chart 2503.

South-eastward of Bagh na Fionndalach Mòr and Bagh na h Airde Beag there is good anchorage in the centre of the loch, in depths of from $5\frac{1}{2}$ to 10 fathoms (10 m 1 to 18 m 3); during north-westerly gales 5 a slight swell comes in.

Weaver's bay, on the south-western side of the loch, is entered north-westward of Eilean Port a' Choit, and affords anchorage to small vessels, in depths of from $2\frac{1}{2}$ to 5 fathoms (4 m 6 to 9 m 1), mud.

Chart 2635.

10 Directions.—The locality of Loch Laxford, if the hills are clear of clouds, may be identified by the three mountains Beinn Stack, Beinn Arkle, and Foinaven. Beinn Stack is a prominent sharp conical peak, 2,357 feet (718 m 4) high, $7\frac{1}{2}$ miles south-eastward of Rubha Ruadh. Beinn Arkle is a remarkably smooth round-topped summit of a whitish colour, 2,573 feet (784 m 2) high, $2\frac{1}{2}$ miles north-eastward of Beinn Stack. Foinaven, 2,973 feet (906 m 2) high, shows as the end of a long ridge, $2\frac{1}{2}$ miles north-north-eastward of Beinn Arkle (*Lat. 58° 22' N., Long. 4° 54' W.*). See view on chart 2503.

Chart 2503.

20 A vessel approaching from southward should, after passing westward of Handa island, round Rubha Ruadh at a distance of about $2\frac{1}{2}$ cables, and steer into the loch, keeping the south-western extremity of Eilean an Eireannaich bearing not more than 120° and open south-westward of Ardmore point, which leads south-westward of Bogha Druim. **25** After passing south-westward of Bogha Druim the vessel can proceed through the fairway of the loch to the desired anchorage.

A vessel approaching from northward should, after passing westward of Eilean an Roin Mòr and Eilean an Roin Beag, $3\frac{1}{2}$ miles northward of Rubha Ruadh, steer to pass from 3 to 4 cables westward of Whale 30 islet, and, rounding Whale Back at a distance of not less than 2 cables, steer for Rubha Ruadh. When the south-western extremity of Eilean an Eireannaich is bearing not more than 120° and is open south-westward of Ardmore point, the vessel can proceed as directed above.

Loch Dughaill.—Loch Dughaill, on the northern side of the peninsula of which Ardmore point is the western extremity, being entirely open westward, does not afford anchorage.

Strangers should guard against mistaking this loch for Loch Laxford.

APPROACHES TO LOCH INCHARD.—Southern approach.

Coast.—From the north-western entrance point of Loch Dughaill, 40 $8\frac{1}{2}$ cables northward of Ardmore point, the coast trends about $1\frac{1}{2}$ miles north-eastward to Eilean Dubh, the southern entrance point of Loch Inchard; it is steep and rocky, rising abruptly to a succession of hills of from 300 to 400 feet (91 m 4 to 121 m 9) high. Fronting the south-western part of this coast, and extending about 9 cables offshore, are 45 two large groups of islets and rocks.

Dangers.—Eilean na Saille, close westward of the north-western entrance point of Loch Dughaill, is a double-topped island, 118 feet (36 m 0) high. The channel between the eastern side of Eilean na Saille and the mainland is foul; and foul ground and a shoal bank extend 50 about $2\frac{1}{2}$ cables north-north-eastward from its northern end. Eilean na Sumaid, about three-quarters of a cable north-westward of Eilean na Saille, is a steep islet, 65 feet (19 m 8) high. Sgeir Geinn, about $1\frac{1}{2}$ cables westward of Eilean na Sumaid, dries about 13 feet (4 m 0). A shoal,

Chart 2503.

with a depth of $2\frac{1}{2}$ fathoms ($5^{\text{m}0}$) over it, lies $1\frac{1}{2}$ cables north-north-eastward of Eilean na Sumaid.

Dubh sgeirean, the western of the two groups of islets and rocks, are described on page 614. Sgeirean Cruaidhe, the eastern group, lie about $2\frac{1}{2}$ cables offshore; the rocks are smaller and lower than those of Dubh sgeirean.

There is a deep navigable channel between Dubh sgeirean and Sgeirean Cruaidhe. Sgeir an Daimh, at the north-eastern end of this channel, about $6\frac{1}{2}$ cables northward of Eilean na Sumaid, is 6 feet ($1^{\text{m}8}$) high, and in line with the eastern end of the eastern sandy beach between Oldshore Mòr and Oldshore Beag, $2\frac{1}{2}$ miles north-north-eastward, bearing about 027° , leads through the fairway of this channel, passing about one cable north-westward of Sgeir Geinn.

Titling rock, about 8 cables north-eastward of Eilean na Saille (Lat. $58^{\circ} 26' N.$, Long. $5^{\circ} 07' W.$) and one cable offshore, has a least depth of 3 feet ($0^{\text{m}9}$) over it.

Glas Leac, about one cable west-north-westward of Eilean Dubh, consists of two small bare, rocky islets, 50 and 55 feet ($15^{\text{m}2}$ and $16^{\text{m}8}$) high, connected with each other by a reef which dries. Foul ground and a shoal bank extend about three-quarters of a cable south-westward from the south-western side of Glas Leac, and a shoal, with a least depth of 2 fathoms ($3^{\text{m}7}$) over it, lies about one cable farther south-westward; foul ground and a shoal bank extend about one cable from the mainland, abreast this latter shoal. The channel between Glas Leac and the mainland south-eastward has depths of from 7 to 10 fathoms ($12^{\text{m}8$ to $18^{\text{m}3}$).

Loch Ceann na Saile, which is entered southward of Glas Leac and Eilean Dubh, is a blind creek.

Northern approach.—Coast.—Between Am Meall, the mainland peninsula abreast the eastern end of Eilean an Roin Mòr (page 616), and the point $8\frac{1}{2}$ cables east-south-eastward, the coast forms two sandy bays, separated by Eilean na h Aiteig, 4 cables east-south-eastward of Am Meall. Eilean na h Aiteig is 120 feet ($36^{\text{m}6}$) high, with vertical cliffs on its south-eastern side; its northern end is connected with the shore by a reef which dries. Some conspicuous sand dunes lie at the head of the eastern bay, and the village of Oldshore Mòr is on the eastern side of the valley that leads down to the bay. The sand beaches at the heads of these two bays show up well.

From the point $8\frac{1}{2}$ cables east-south-eastward of Am Meall the coast trends about $1\frac{1}{2}$ miles east-south-eastward to the north-eastern corner of Loch na Claise, and rises abruptly to hills of from 300 to 400 feet ($91^{\text{m}4$ to $121^{\text{m}9}$) high. Between Eilean an Roin Mòr and Oldshore Mòr the slopes are more gradual.

Dangers.—Eilean an Roin Mòr, lying close offshore, shows from northward and southward three principal hummocks, the eastern of which is 195 feet ($59^{\text{m}4}$) high, and the highest; the western part of the island is almost separated from the main part at high water. Eilean an Roin Beag lies close west-south-westward of Eilean an Roin Mòr. Bogha Roin, about $1\frac{1}{2}$ cables southward of Eilean an Roin Beag is awash.

Rubha na Leacaig (Lat. $58^{\circ} 27' N.$, Long. $5^{\circ} 04' W.$), (see page 618), in line with the northern extremity of the southern shore of that loch, bearing about 108° , leads southward of Bogha Roin.

Chart 2503.

The narrow channel north-eastward of Eilean an Roin Mòr is encumbered with rocks, but boats can pass through it at any state of the tide.

5 Bogha Cailleach, about $6\frac{1}{2}$ cables east-south-eastward of the south-western extremity of Eilean an Roin Mòr, has a depth of $3\frac{1}{2}$ fathoms ($6^{\text{m}4$) over it. Banks, with a least depth of 8 fathoms ($14^{\text{m}6$) over them, lie between Bogha Cailleach and Eilean na h Aiteig.

10 Cleit Tragate consists of three detached rocks, lying from about $1\frac{1}{2}$ to $3\frac{1}{2}$ cables south-westward of the south-eastern entrance point of the bay east-south-eastward of Eilean na h Aiteig. Bogba Tragate, the south-westernmost rock, is awash; the central rock has a depth of less than 6 feet ($1^{\text{m}8$) over it, and the north-easternmost rock dries 3 feet ($0^{\text{m}9$). There is deep water between these rocks.

15 Na Cluasnadh, about $2\frac{1}{2}$ cables southward of the south-eastern entrance point of the bay south-eastward of Eilean na h Aiteig and one cable offshore, is an islet 15 feet ($4^{\text{m}6$) high. Foul ground extends about three-quarters of a cable south-westward from the south-western end of Na Cluasnadh and a shoal, with a depth of 2 fathoms ($3^{\text{m}7$) over it, lies in mid-channel north-eastward of this islet.

Eilean a' Chonnaidh, about one cable south-eastward of Na Cluasnadh and the same distance offshore, is 162 feet ($49^{\text{m}4$) high. A shoal bank connects the north-eastern end of Eilean a' Chonnaidh (*Lat.* $58^{\circ} 28' N.$, *Long.* $5^{\circ} 05' W.$), with the mainland north-north-eastward.

25 Loch na Clalse.—Loch na Claise is entered between Eilean a' Chonnaidh and Rubha na Leacaig and is separated from Loch Inchard by a rugged peninsula. The head of Loch na Claise is separated by a narrow isthmus from the head of Loch Bervie, about one cable south-eastward. The loch has bold and rugged shores, especially on its southern side, with deep water nearly to its head.

There is a concrete pier in the south-eastern corner of the loch with a depth of 9 feet ($2^{\text{m}7$) alongside. Fishing vessels use the loch in summer in preference to Loch Inchard, as it is easier of access.

The loch is open westward, and there is no good anchorage in it, though it may be used as a temporary anchorage in summer. The bottom is mud and clay, and the usual anchorage is in the southern part of the loch with a hawser to the southern shore.

35 There is regular communication by sea with other ports on the western coast of Scotland, and thence with Isle of Skye and the 40 Hebrides.

LOCH INCHARD.—Loch Inchard, which is entered between Glas Leac and Rubha na Leacaig, about $3\frac{1}{2}$ cables north-eastward, is a narrow loch, both shores being bold and steep-to, with considerable depths to within about 9 cables of its head. The head of the loch 45 dries out about three-quarters of a cable and a bank, with depths of less than 2 fathoms ($3^{\text{m}7$) over it, extends about 3 cables farther.

Rubha na Leacaig, is bold and of a reddish colour; the first bummock within the point is 120 feet ($36^{\text{m}6$) high, but a little farther in the hills rise abruptly to 260 feet ($79^{\text{m}2$).

50 The loch is but little used, in consequence of the entrance being difficult to make out from seaward, on account of its being so considerably embayed, and because it is so deep that it does not afford good anchorage until about $2\frac{1}{2}$ miles within the entrance.

Chart 2503.

There are three villages on the northern and north-eastern shores of the loch. Kinlochbervie, with its church and manse, is situated round the shores of Loch Bervie, about 8 cables eastward of Rubha na Leacaig, and has a post and telegraph office. Badcall, about ⁵ three-quarters of a mile east-south-eastward of Kinlochbervie, stands on the shore of a small shallow inlet. Achriesgill, about three-quarters of a mile south-eastward of Badcall, stands on the northern shore of Achriesgill bay. Rhiconich, at the head of the loch, has a telegraph office, and the hotel stands out. Rhiconich river flows into ¹⁰ the loch close south-westward of the hotel.

Tidal streams.—There are no perceptible streams in the loch.

Life-saving.—A line-throwing apparatus is maintained at Kinlochbervie; *see page 9.*

Dangers.—Loch Inchard is free from dangers, with the exception ¹⁵ of Bogha Ceann na Saile, which has a depth of 2 fathoms (3^m7) over it and is situated in the fairway, about $5\frac{1}{2}$ cables eastward of Glas Leac (*Lat. $58^{\circ} 27' N.$, Long. $5^{\circ} 05' W.$*) and one cable from the southern shore. The weed on this rock has been seen in the trough of the waves in heavy seas. The channel is northward of the ²⁰ rock.

The southern extremity of Rubha nan Eun, about 8 cables east-south-eastward of Rubha na Leacaig, in line with the northern extremity of Rubha na Cloiche Lomaidh, about one mile farther eastward, bearing 098° , leads northward of Bogha Ceann na Saile. ²⁵

Anchorages.—Directions.—Loch Bervie, on the northern side of Loch Inchard, is a small basin, the entrance to which dries, but the depths inside are sufficient for small vessels.

Achriesgill bay affords good anchorage, in depths of from 10 to ³⁰ 14 fathoms (18^m3 to 25^m6).

The best anchorage in Loch Inchard is in the centre of the loch, just above Achriesgill bay, in depths of from 8 to 10 fathoms (14^m6 to 18^m3), mud and sand.

A vessel approaching from south-westward should steer to pass about 3 cables north-westward of Dubh sgeirean (page 614), and thence ³⁵ steer for Rubha na Leacaig. She should round Glas Leac at a distance of about 2 cables, and, closing the northern shore of the loch, steer with the southern extremity of Rubha nan Eun in line with the northern extremity of Rubha na Cloiche Lomaidh, bearing 098° , passing northward of Bogha Ceann na Saile. When abreast a prominent point on the ⁴⁰ southern side of the loch, about 6 cables eastward of Glas Leac, close off which are two rocks, 6 and 12 feet (1^m8 and 3^m7) high, respectively, a vessel will be eastward of Bogha Ceann na Saile, and can proceed in mid-channel to the anchorage.

A vessel approaching from northward should round Eilean an Roin ⁴⁵ Beag and Eilean an Roin Mòr (page 616) at a distance of about half a mile. She should thence steer for the entrance to the loch, and proceed as directed above.

Charts 2503, 1954.

COAST.—Between Am Meall (page 617) and Rubh' a' Bhuachaille, ⁵⁰ $3\frac{1}{2}$ miles north-north-eastward, the coast is cliffy.

Chart 1954.

Sandwood bay, on the north-eastern side of Rubh' a' Bhuachaille

Chart 1954.

(Lat. $58^{\circ} 32' N.$, Long. $5^{\circ} 05' W.$), is open and affords no shelter; its broad sandy beach stands out at low water.

From Rubh' a' Bhuaehaille the coast trends about 6 miles north-north-eastward to Cape Wrath, and as that cape is approached it consists of red vertical cliffs indented by rugged coves. There is no place between Eilean an Roin Mòr and Cape Wrath where landing can be effected except in the Bay of Keisgaig, about half-way between Rubh' a' Bhuaehaille and the cape, and landing can only be effected 10 there during the finest weather.

Cape Wrath, the north-western promontory of the mainland of Scotland, a bold headland with granitic and gneiss cliffs rising precipitously to an elevation of 363 feet (110^m6), is the landfall or the point of departure for vessels bound to or from Pentland firth. On its 15 summit is a light-tower, and in the background are several distant mountain peaks, generally capped with clouds. On first sighting the cape from north-eastward, it appears as an island.

Caution.—In approaching Cape Wrath from westward during foggy weather a vessel should be careful not to get within a depth of 20 less than 30 fathoms (54^m9). When the wind is strong and against the tidal stream there is a heavy and dangerous sea for some distance from the cape, but in easterly winds, during the west-going stream, vessels bound to Pentland firth will find smooth water and but little stream southward and westward of the cape.

25 **Tidal streams.**—Off the coast between Eilean an Roin Mòr and Cape Wrath, the north-going stream begins -0115 Stornoway (-0530 Dover), the south-going stream begins +0500 Stornoway (+0045 Dover); the spring rate in each direction is about 1·8 knots.

At a position 6·7 miles 327° from Cape Wrath lighthouse, the east-going stream, spring rate 1·7 knots neap rate 0·7 knot, mean direction 067° , begins -0155 Stornoway (-0610 Dover); the west-going stream, spring rate 1·7 knots neap rate 0·7 knot, mean direction 252° , begins +0425 Stornoway (+0010 Dover). The streams are nearly rectilinear, but may vary in direction about 5° on either side of the 35 mean direction stated.

Close inshore the east-north-east-going stream forms an eddy, and, along the coast eastward of the cape, the stream runs nearly continuously westward; information regarding the stream along the coast southward of the cape is not available, but it is probable that a similar 40 eddy forms during the west-south-west-going stream, and that, along this coast, the stream runs nearly continuously northward. There is turbulence off the Cape where the eddies and main streams meet.

See also Table of tidal streams for station J00 in Tidal Streams European Waters, Part II, 1948.

45 *Chart 2503.*

Dangers.—Dubh sgeir, about 3 cables northward of the north-western extremity of Eilean an Roin Mòr, is a group of rocky islets and rocks, lying about $5\frac{1}{2}$ cables offshore; the highest islet of this group has an elevation of 32 feet (9^m8). The sea generally breaks on 50 a shoal with a depth of $1\frac{1}{2}$ fathoms (2^m7) over it, about three-quarters of a cable north-north-eastward of the northernmost islet. A shoal, with a depth of 4 fathoms (7^m3) over it, lies about $3\frac{1}{2}$ cables eastward of the northernmost islet and 2 cables from the mainland.

Seana sgeir, about $2\frac{1}{2}$ cables north-eastward of Dubh sgeir and



To face page 621



Cape Wrath lighthouse from west-south-westward
(Original dated 1812.)

Chart 2530.

3 cables offshore, consists of two islets, the western and higher having an elevation of 63 feet (19^m2).

The channel between Seana sgeir (*Lat. 58° 29' N., Long. 5° 08' W.*) and the shoal, with a depth of 1½ fathoms (2^m7) over it, north-north-eastward of Dubh sgeir is deep, but the bottom between these islets and Eilean an Roin Mòr is uneven. There are shoals between Seana sgeir and the mainland eastward. 5

Charts 2503, 1954.

Rocks, which dry, extend one cable offshore between Am Meall and Rubh' a' Bhua-chaille. 10

Chart 1954.

Am Balg, about one mile west-north-westward of Rubh' a' Bhua-chaille, is a rocky islet rising precipitously to an elevation of 146 feet (44^m5). The islet is difficult of access, and is a breeding place of 15 puffins and guillemots. Am Balg is foul for about 2 cables offshore. Am Bhua-chaille lies close north-westward of Rubh' a' Bhua-chaille. There is a deep channel between Am Balg and Am Bhua-chaille.

Duslic rock, about 6½ cables north-north-eastward of Cape Wrath, dries about 11 feet (3^m4), and is steep-to; its black head can nearly always be seen in the hollow of the long rolling swell caused by Atlantic gales. A patch, with a depth of 9 fathoms (16^m5) over it, lies about 4 cables northward of Cape Wrath. 20

Am Balg, bearing 215° and just open north-westward of Cape Wrath, leads north-westward (*see* view facing page 602); and the summit of 25 Faraid head, 7 miles eastward of Cape Wrath, bearing 109° and just open northward of An Garbh eilean, about 3½ miles eastward of the cape, leads northward, of Duslic rock.

There is a channel, available for vessels with local knowledge, between Cape Wrath and Duslic rock; the southern extremity of An Garbh 30 eilean in line with the northern extremity of Fariad head, bearing 102°, leads through it. In this channel the tidal stream nearly always sets westward. Great caution is imperative when navigating this channel.

Light.—Radiobeacon.—Fog signal.—Storm signals.—A light is exhibited, at an elevation of 400 feet (121^m9), from a white tower, 65 35 feet (19^m8) in height, standing at the northern edge of the cliff, 3 cables eastward of the north-western extremity of the land at Cape Wrath. The light is frequently obscured by fog on account of its great height. *See* view facing this page.

A radiobeacon is situated, and a fog signal is sounded from the 40 lighthouse.

Storm signals are displayed. *See* page 6.

Coastguard.—Life-saving.—An auxiliary watch is kept at Sheigra, 8½ miles south-south-westward of Cape Wrath. A line-throwing apparatus is maintained at the cape. *See* page 9. 45

Note.—For a description of the coast eastward, and the outlying islets and banks northward and north-eastward, of Cape Wrath (*Lat. 58° 37' N., Long. 5° 00' W.*) *see* North Sea Pilot, Vol. II.

APPENDIX I

LIST OF PORTS AVAILABLE FOR UNDER-WATER REPAIRS, with details of largest dry or floating dock or patent slip at each port

NAME OF PORT AND TYPE OF DOCK, ETC.	Length from bilge of Caisson or Mitre Post of gates at			Maximum length of keel blocks			Breadth of Entrance at			Distance { below (+) above (-) Chart datum level of			Tidal Data			FLOATING DOCKS, PATENT SLIPS, &c.			REMARKS	
	Coping head	Floor head	(2)*	(3)	MHWs level	Sill	(4)†	Coping	Feet	Feet	Blocks, at Entrance (7)	Head (8)	Feet	Feet	Feet	Forward (10)	Aft (11)	Lifting power (12)	Tons (13)	
Ayr: Patent slip	800	225	225	§64	—	—	—	—	—	—	—	—	9·5	7	13	1,000	§ Width of cradle.			
TROON: Dry dock	399	393	365	56	56	56	4	4	46	48	+6·0	+5·5	8·8	—	—	—	—	—	—	
IRVINE: Patent slip	926	*260	—	50	—	—	—	—	—	—	—	—	8·6	10	22	2,000	Extends to 320 feet.			
ARDOOSSAN: Dry dock	340	336	325	46	46	46	1	1	4·8	4·8	4·3	4·2	—	—	—	—	—	—	—	
DUMBARTON:	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
FARLIE: Patent slip	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
HELENSBURGH Shandon patent slip	310	78	78	22	—	—	—	—	—	—	—	—	—	—	—	10·7	7	11	200	

* In the case of Floating Docks, Patent Slips, &c., column (1) = Extreme length; column (2) Length on blocks or cradle.

† In the case of Floating Docks, column (4) = Breadth at top; column (5) = Breadth at bottom of dock.

‡ In order to find the depths on Sill, &c., the quantities in columns (6), (7) and (8) should be applied according to sign to the predicted or calculated height of tide as obtained from the Admiralty Tide Tables.

LIST OF PORTS AVAILABLE FOR UNDER-WATER REPAIRS, with details of largest dry or floating dock or patent slip at each port

NAME OF PORT AND TYPE OF DOCK, ETC.	Length from bilge of Caisson or Mtre Post of gates at (1)*	Floor head (2)*	Coping head (1)*	Breadth of Entrance at (4)†		Distance { below (+) Chart datum level of (—)		Tidal Data MHWS (5)‡	Blocks, at Entrance (6)§	Head (8)	Feet	Feet	Feet	Feet	Tons	Lifting power (12)	REMARKS	
				Feet	Feet	Feet	Feet											
PORT BANNATYNE																		
GOUROCK:																		
Main slipway	500	75	—	821	—	—	—	—	—	—	—	—	—	—	—	—	250	3 slipways, capacity of each 150 tons.
GREENOCK:																		
Dry dock	681‡	623‡	*516	69	09	+93	+6½	—	—	—	—	—	—	—	—	—	—	§Width of cradle.
PORT GLASGOW:																		
Dry dock	325	322	300	45	43	+2½	+1	—	—	—	—	—	—	—	—	—	—	Between fenders.
GLASGOW:																		
Dry dock	380	880	829	82·9	14	13½	13½	—	—	—	—	—	—	—	—	—	—	
ROSneath:																		
Admiralty slipway	365	68½	—	522½	—	—	—	—	—	—	—	—	—	—	—	—	—	
CLYNDER:																		
Slipway	300	48	—	\$17½	—	—	—	—	—	—	—	—	—	—	—	—	—	
SANDBANK:																		
Slipway	600	100	—	—	—	—	—	—	—	—	—	—	—	—	—	—	200	Two side slips provided

* In the case of Floating Docks, Patent Slips, &c., column (1) = Extreme length; column (2) Length on blocks or cradle.

† In the case of Floating Docks, column (4) = Breadth at top; column (5) = Breadth at bottom of dock.

‡ In order to find the depths on Sill, &c., the quantities in columns (6), (7) and (8) should be applied according to sign to the predicted or calculated height of tide as obtained from the Admiralty Tide Tables.

APPENDIX I—continued

LIST OF PORTS AVAILABLE FOR UNDER-WATER REPAIRS, with details of largest dry or floating dock or patent slip at each port.

NAME OF PORT AND TYPE OF DOCK, ETC.	Length from bilge of Caisson or Mitre Post of gates at (1)*	Breadth of Entrance at (2)*	Maximum length of keel blocks (3)	Coping (4)†	MHWS level (5)†	Sill (6)	Blocks, at Entrance (7)	Head (8)	Distance { below (+) above (-) Chart datum level of		Tidal Data MHWS (9)	FLEATING DOCKS, PATENT SLIPS, &c.	REMARKS (13)			
									+ Distance { below (+) above (-) Chart datum level of							
									Maximum depth over blocks (10)	Aft (11)						
GARELOCH HEAD; AFID, 58	451 $\frac{1}{4}$	—	401 $\frac{1}{2}$	67 $\frac{5}{8}$	82 clear	—	—	—	—	—	21	21	8,000			
OBAN; Slipway	400	130	—	—	—	—	—	—	—	—	—	—	300			
FORT WILLIAM; Slipway	437	68 $\frac{1}{2}$	—	—	522	—	—	—	—	—	—	—	100			
ARDRISSHAIG; Dry dock	—	—	—	—	—	—	—	—	—	—	—	—	—			

* In the case of Floating Docks, Patent Slips, &c., column (1) = Extreme length; column (2) = Length on blocks or cradle.

† In the case of Floating Docks, column (4) = Breadth at top; column (5) = Breadth at bottom of dock.

‡ In order to find the depths on Sill, &c., the quantities in columns (6), (7) and (8) should be applied according to sign to the predicted or calculated height of tide as obtained from the Admiralty Tide Tables.

APPENDIX II
LIST OF PRINCIPAL PORTS, SHOWING PARTICULARS
OF DEPTHS, &c.

PORT	Depth below chart datum level		Tidal data		REMARKS
	In channel of approach	In anchorage	M.H. W.S.	M.H. W.N.	
Loch Ryan	24 feet	10 to 44 feet . . .	Feet 9·2	Feet 7·5	
Stranraer	13 to 20 feet . . .	9 to 17 feet	9·2	7·5	Depths of from 5 to 33 ft. alongside piers.
Ayr harbour	15 feet	11½ to 13 feet in tidal basin.	9·5	8·2	Depths of 13 feet alongside wharf.
Troon harbour	16 feet	14 to 20 feet in tidal basin.	8·8	7·3	Depths of from 6 to 19 feet alongside quays and pier.
Irvine harbour	14 to 15 feet . . .	8 to 12 fms. in outer anchorage.	8·6	7·2	Depths of from 10 to 14 feet alongside wharf.
Ardrossan harbour	20 feet	10 to 18 feet	9·2	7·6	
Campbeltown loch	Deep	6 to 9 fms.	8·9	7·5	Depths of from 8 to 15 feet in outer part of harbour.
Lamlash harbour: South channel	15 fms.	—	—	—	
North channel	6 fms.	—	—	—	
Brodick bay	Deep	11 to 17 fms. . . .	9·1	7·6	
Millport bay	Deep	2 to 6 fms.	11·3	9·4	Depth of 7 feet alongside pier.
Gourock bay	Deep	15 fms.	10·8	9·0	Depths of from 12 to 20 feet alongside wharf.
Greenock	26½ feet	10 to 17 fms. at anchorage between Whiteforeland point and The Tail of the Bank.	10·8	9·0	
Port Glasgow	26½ feet	—	11·3	9·4	Depth of 7 feet alongside wharves.
Glasgow	25 feet	—	13·4	10·7	For depths alongside quays, see text of book.
East Loch Tarbert	3 fms.	4 to 19 fms. . . .	10·9	9·8	Depths of from 6 to 13 feet alongside quays.
Loch Tarbert	6 to 10 fms. . . .	5 to 9 fms.	—	—	
West Loch Tarbert	4½ to 9 fms. . . .	1½ to 5 fms.	3·7	3·0	
Loch Melfort	Deep	6 to 12 fms.	—	—	

APPENDIX II
LIST OF PRINCIPAL PORTS—(continued)

PORT	Depth below chart datum level		Tidal data		REMARKS
	In channel of approach	In anchorage	M.H. W.S.	M.H. W.N.	
Oban:	12 to 23 fms. . .	Feet 11·5	Feet 7·9	Depths of from 8½ to 18 feet alongside quays.
Kerrera sound	26 feet.	—	—	—	
Northern approach ..	33 feet.	—	—	—	
Loch Etive	16 feet.	2 to 14 fms. . .	11·9	8·4	
Ballachulish bay	Deep	10 to 25 fms. . .	13·2	9·5	
Fort William...	Deep	4 to 8 fms.	13·0	9·1	Depths of 4 to 8 feet alongside piers.
Loch Scridain ..	Deep	4 to 9 fms.	13·6	9·5	
Loch na Keal ..	Deep	5 to 15 fms. . .	13·3	9·4	
Tobermory ... harbour	Deep	14 to 16 fms. . .	13·5	9·4	Least depth of 8 feet alongside Mishnish pier.
Loch Sunart ..	Deep	3 to 16 fms. . .	14·1	10·3	
Sound of Barra:					
Inner Oitir Mòr	33 to 51 feet ..	24 to 39 feet . .	12·2	9·0	
Loch Boisdale..	12 to 20 fms. .	4½ to 13 fms. . .	13·2	9·4	
Loch Skiport...	Deep	4 to 13 fms. . .	13·1	9·1	
Loch Maddy ..	6 fms.	4 to 7 fms.	14·0	9·9	Spanish harbour.
West Loch Tarbert, Hebrides	Deep	7 to 12 fms. . .	11·8	8·7	
West Loch Roag	Deep	4 to 12 fms. . .	11·5	7·8	
East Loch Roag	Deep	4 to 14 fms. . .	11·5	7·8	
East Loch Tarbert, Hebrides	Deep	8 to 14 fms. . .	14·2	10·4	
Loch Seaforth..	Deep	4 to 10 fms. . .	14·2	10·4	
Loch Shell	Deep	6 to 18 fms. . .	13·8	9·9	
Loch Erisort...	Deep	7 to 11 fms. . .	13·7	10·2	
Stornoway harbour	40 to 60 feet .	39 to 47 feet . .	13·7	10·2	
Loch Dunvegan	Deep	4 to 7 fms. in inner part of loch, and 6 to 14 fms. in outer part.	14·6	10·4	Depths of from 10 to 11 feet alongside wharf.
Loch Greshornish	Deep	4 to 15 fms. . .	15·6	11·2	

LIST OF PRINCIPAL PORTS—(continued)

PORT	Depth below chart datum level		Tidal data		REMARKS
	In channel of approach	In anchorage	M.H. W.S.	M.H. W.N.	
Loch Nevis	8 fms.	10 to 12 fms. in Inverie bay, and 4 to 6 fms. in Tarbet bay.	Feet 14·7	Feet 10·8	
Loch Hourn	Deep	16 fms. in Camas Ban.	16·1	12·2	
Loch Kishorn	Deep	5 to 12 fms.	—	—	
Loch Carron	4 fms.	2 to 6 fms off Plockton.	16·5	11·8	
Portree harbour	Deep	3½ to 13 fms.	15·2	10·2	
Loch Torridon	Deep	17 fms. in Loch a Chracaich, and 13 fms. near the head of Upper Loch Torridon.	16·7	12·2	
Loch Gairloch	Deep	5 to 20 fms.	15·4	11·6	
Loch Ewe	Deep	2 to 17 fms.	15·2	10·9	
Little Loch Broom	Deep	15 to 18 fms.	15·1	10·9	
Loch Broom Ullapool	Deep	5 to 16 fms.	15·1	10·9	Depths of from 8 to 18 feet alongside piers.
Loch Inver	Deep	4 to 5 fms.	14·4	10·9	
Loch Cairnbawn	Deep	7 fms.	14·6	10·5	
Loch Laxford	Deep	5½ to 12 fms.	13·5	8·8	
Loch Inchard	Deep	8 to 14 fms.	13·3	9·6	

APPENDIX III

Bye-laws enacted by the Trustees of the Clyde Lighthouses.—The following are extracts from the bye-laws enacted by the Trustees of the Clyde Lighthouses, which are applicable to the River and Firth of Clyde as defined hereunder.

The following words and expressions shall have the meanings hereby assigned to them:—

"The Trustees" shall mean the Trustees of the Clyde Lighthouses incorporated by the Clyde Lighthouses Act, 1871.

"The River and Firth" shall mean the River and Firth of Clyde and all navigable waters included between a line drawn due east and west across the same at the southernmost point of the Island of Little Cumbrae from the coast of Ayrshire to the coast of Kintyre and a line drawn across the said River or Firth from Newark Castle to Cardross Burn.

"The Deep-Water Channel" shall mean the channel authorised by the Clyde Lighthouses Order, 1912.

"Dead Slow" shall mean a speed not exceeding 5 miles an hour.

1. *Bye-laws to have effect in the River or Firth.*—Subject to the Statutory rights of the Trustees of the Port and Harbours of Greenock, the following Bye-laws shall have full force and effect in the River and Firth of Clyde as herein defined provided that between the present Eastern boundary of the Burgh of Greenock and the Western termination of the Deep-Water Channel authorised by the Clyde Lighthouses Order 1912, such Bye-laws shall only be applicable to and have effect within the said Deep-Water Channel.

3. *Vessels not to be anchored in Channel or so as to obstruct navigation.*—No person shall anchor or moor any vessel in the Deep-Water Channel authorised by the aforesaid Order unless in the case of an accident or grounding (in which case the Master shall carry out the provisions of Section 7 (1) hereof) and no person shall anchor or moor any vessel in any part of the River and Firth so as to obstruct or interfere with the free navigation.

4(a). *Vessels to be slowed when passing Dredging Machines Diving Apparatus, &c.*—Wherever the Dredging Machines Diving Apparatus or Barges or other craft belonging to or under the control of the Trustees may be stationed on the River or where any vessel belonging to or authorised by the Trustees is engaged in attending to, repairing or otherwise dealing with the buoys or beacons of the Trustees, or with wrecks or obstructions, or is engaged in the carrying out of any works or operations of the Trustees a red flag or shape shall be hoisted upon a pole upon the Dredging Machines Diving Apparatus or Barges or other craft or vessel and the Master of any approaching vessel when within not less than 200 yards of the Dredging Machines Diving Apparatus or Barges or other craft or vessel having such flag hoisted shall reduce the speed of his vessel to "Dead Slow" until his vessel shall have passed any such Dredging Machines Diving Apparatus or Barges or other craft or vessel or obstruction by at least 50 yards.

4(b). Vessels to slow on approaching works, &c.—Whenever in order to protect works being executed by the Trustees or by the Trustees of the Port and Harbours of Greenock or by Shipbuilding Firms or other works or for other navigation purposes, the Trustees shall erect or authorise the erection of boards on the banks of the River or elsewhere having the words "Dead Slow" painted thereon, such boards shall be considered as a substitute for red flags or shapes and the speed of every vessel shall when approaching and passing such boards be reduced in the same manner in all respects as if red flags or shapes had been exhibited.

5. Rubbish or Oils not to be thrown into the river.—The Master of any vessel or any other person shall not throw or permit to be thrown from his vessel or from the quays or foreshores ashes or rubbish of any kind nor shall they permit oils to be poured or thrown out into the Deep Water Channel or the River and Firth within the Trustees' jurisdiction.

7. (1) Lighting and marking of vessels aground, &c., in River and Firth. Notice to Master of Works.—In the event of a vessel being aground or submerged or otherwise not under control or obstructing or endangering the navigation, the Master shall at once until the vessel is removed exhibit the following lights and marks and shall also immediately take steps to inform the Master of Works at Port Glasgow:—

By Night.—*Two Red Lights* in a vertical line, not less than six feet apart, and not less than fifteen feet above the hull, placed in such position as to show a uniform and unbroken light to vessels approaching and visible at a distance of at least one mile; and *Two White Lights*, placed where they can best be seen on the hull, one at each end of the vessel, in such position as to indicate as nearly as possible the extent of the obstruction;

By Day.—*Two Black Balls or Shapes*, each two feet in diameter, in the same position as the *Two Red Lights*; and *Two Black Balls or Shapes* in the same position as the *Two White Lights*.

Provided that, if the vessel be submerged to such extent that the Lights, Balls or Shapes cannot be displayed therefrom, the Master shall place on or near the site such boats or punts as may be necessary to give effect to the provisions of this Section, and exhibit thereon such of the prescribed Lights, Balls or Shapes as cannot be shown from the vessel itself.

(2) When a steam vessel takes the ground or becomes an obstruction, she shall, in addition to showing the lights and marks specified above, immediately sound four short *Blasts* in rapid succession on the whistle or siren or sounding apparatus and shall continue to repeat such signal at short intervals when other vessels are approaching or during fog or thick weather, and in the case of a vessel without steam she shall sound her manual fog signal or bell.

(3) In the event of a vessel being submerged to the extent described in the Proviso to Section 7 (1) hereof, and those on board finding it necessary to leave the vessel or impracticable themselves to provide and maintain the prescribed lights and marks, the Master shall immediately request the Trustees through their Master of Works to undertake the lighting and marking at the owner's expense, but the person whose duty it is to observe the provisions of Section 7 (1) hereof shall not be relieved of the obligation to do so until the Trustees' servants are actually in charge.

8. Use of Wreck-marking vessel and buoys.—If the vessel be abandoned by the Master or Owner and be submerged to such an extent

that the lights and marks cannot in a proper manner be displayed therefrom and if wreck-marking vessels or boats or a buoy or buoys according to the circumstances be used, the Trustees shall light and mark them so far as practicable as specified in the following Sub-Sections (1) and (2).

Vessels and buoys shall when possible have the word *Wreck* painted in white letters on a green ground on the top mark or sides. When possible a buoy shall be laid near to the site of a wreck next to mid-channel. When two or more vessels or buoys are used to mark a wreck, Masters should not attempt to pass between them.

Change of buoyage.—The Trustees may change the positions of permanent buoys in the vicinity of a wreck without giving Notice.

(1) *Shape of Wreck-marking buoys.*—Unless circumstances prevent it, when a wreck-marking buoy is used it shall be one of the following shapes and (if a light is carried) it shall be lighted in one of the manners following to indicate to the Master on which hand he should pass the buoy.

How to be passed.

(a) To be passed on the Master's Port Hand—

Can Shape, and if lighted to show a *Green Group Flashing Light* giving *Two Flashes*.

(b) To be passed on the Master's Starboard Hand—

Conical Shape, and if lighted to show a *Green Group Flashing Light* giving *Three Flashes*.

(c) To be passed on either side—

Spherical Shape, and if lighted to show a *Green Light* giving *One Flash*.

(2) *Wreck-marking vessel.*—*How to be passed.*—Unless circumstances prevent it, when a wreck-marking vessel is used it shall not carry the ordinary riding light authorised for a vessel at anchor but shall carry the lights as follows to indicate to the Master on which hand he should pass the vessel, but during the day green shapes shall take the place of the lights specified.

Lights on Wreck-marking vessel.

(a) To be passed on the Master's Port Hand—

Two Green Lights in a vertical line from the end of a crossyard.

(b) To be passed on the Master's Starboard Hand—

Three Green Lights in a vertical line from the end of a crossyard.

(c) To be passed on either side—

Four Green Lights, two in a vertical line one over the other on each end of a crossyard.

10. *Master to satisfy himself that he can pass in safety.*—The Master of every vessel approaching all or any such lights, balls, boats, buoys, obstructions, or wrecks before attempting to pass the same shall ascertain and satisfy himself that he can do so with safety to his own vessel and to other vessels, in which case the speed of his vessel in approaching and passing such shall be *Dead Slow*.

Bye-laws enacted by the Trustees of the Clyde Navigation.—The following are extracts from the bye-laws enacted by the Trustees of the Clyde Navigation.

The following words and expressions shall have the meanings hereby assigned to them:—

The "Trustees" means the Trustees of the Clyde Navigation, incorporated by the Clyde Act of 1858.

"River" means the River Clyde, as defined in the Act of 1858.

"Harbour" means the Harbour of Glasgow, as defined in the Clyde Act of 1883, and as amended by the Clyde Act, 1884.

"Harbour Master" shall include Deputy Harbour Masters and Assistants.

"Dead Slow" shall mean a speed not exceeding five miles an hour.

II. Vessels to have look-out.—Every Vessel shall, during the daytime, have one person, and from sunset to sunrise, and in time of fogs, two persons, properly qualified, stationed at the bow as a look-out, to give immediate notice of any obstruction or danger.

III. Vessels not under command.—Signals.—When a Steam Vessel, or a Dredger, is turning round, or for any reason is not under command and cannot get out of the way of an approaching Vessel, which but for this it would be her duty to get out of the way of, or when it is unsafe or impracticable for a Steam Vessel, or Dredger, to keep out of the way of a Sailing Vessel, she shall signify the same by four or more blasts of the steam whistle in rapid succession, or by like strokes of her bell, and it shall be the duty of the approaching Vessel to keep out of the way of the Steam Vessel, or Dredger, so situated.

IV. Yards to be peaked or braced, and booms, &c., to be rigged in.—Every Vessel in tow of a Tug, proceeding up or down the River, shall, when above Newark Castle, have the yards braced fore and aft: and the jib-boom topped or rigged in to within three feet from the cap; and all running bowsprits run in close to the stems.

V. Vessels aground or at anchor.—Every Vessel getting aground and requiring to anchor, or lying at anchor in the River, shall lay her anchor or anchors so as not to interrupt or interfere with the free passage of the deepened Channel. If any Vessel grounds across the Channel, the Bowsprit, if running, and jib-boom shall be rigged in.

VI. Vessels not to be moored in the River above Bowling.—No person shall anchor or moor any Vessel in the River above Bowling (the Trustees' Dredging Plant excepted), unless in the case of an accident, or grounding, or while waiting for the rising tide; and no Vessel shall, beyond the limits of the Harbour, be moored or berthed inside the lines of the River Walls for the purpose of taking on or landing Goods or Passengers, or of being fitted up or repaired, or for any other purpose, but without prejudice to any Vessel calling at a Quay or Wharf in the ordinary course of trade, provided the navigation be not thereby interrupted.

XIV. Steam Vessels meeting, how to proceed.—When Steam Vessels proceeding in opposite directions are approaching one another, each shall, when within 50 yards of the other, slow her engines, and each shall alter her course to starboard, so that each shall pass on the port side of each other.

XV. One Steam Vessel overtaking another.—When two steamers in the River Clyde within the jurisdiction of the Trustees are proceeding in the same direction with unequal speed, the overtaking steamer shall give one prolonged blast of her whistle as a signal that she desires to pass. *The steamer about to be overtaken shall keep as near to her own or starboard side of the Channel as safety will permit*, in order to leave a clear passage for the overtaking vessel; and the speed of both shall be reduced until the overtaking vessel is past and clear. The vessel being overtaken shall indicate that she is altering her course by giving one short blast. The overtaking vessel, however, shall not attempt to pass until that signal has been given, nor claim nor attempt to pass at a narrow or difficult part of the Channel, or when meeting other vessels or obstructions.

XVI. Steam Vessel meeting or overtaking Sailing Vessels, or approaching Vessels at anchor.—A Steam Vessel meeting or overtaking any Sailing Vessel or Tug, with sailing vessel or timber raft in tow, shall slow her engines when within 50 yards of such Vessels, and shall continue slowing until she shall have passed the same; and when about to pass any Vessel aground or at anchor, shall slow her engines at least 150 yards from such Vessel, and so continue until she shall have passed the same.

XVII. Vessels when overtaken to show stern light.—Every Vessel, when being overtaken by another Vessel after dark, shall show from her stern a white light until the other Vessel shall have passed.

XVIII. Vessels passing up or down the River to keep the proper side.—Vessels coming out of Dock shall signify the same by a prolonged blast of the steam whistle, of not less than five seconds' duration, and, in cases where a Vessel is not under steam, the Tug Boat in attendance shall make the same signal.

Vessels navigating stern foremost in the river or harbour.—Every vessel having a bow rudder and navigating stern foremost in the harbour of Glasgow or River Clyde within the jurisdiction of the Trustees shall, between sunrise and sunset, exhibit two balls, each two feet in diameter, carried at the ends of a horizontal yard on the mast, or, if the vessel has more than one mast, on the main or after mast. The yard will be placed in a thwartship direction, at least six feet higher than the funnel-top and will project at least four feet on either side of the mast, so that the distance between the centres of the two balls will be at least eight feet.

XIX. Steam Vessels crossing the River.—Every Steam Vessel, under her own steam, crossing from one side of the River towards the other side shall keep out of the way of Vessels navigating up and down the river.

XX. Engines to be slowed when passing Dredgers, &c.—Wherever the Dredging Machines, Diving Bells, or other Craft belonging to the Trustees may be stationed on the River, or where works are being executed by the Trustees, a red flag shall be hoisted upon a pole on the River bank at each end of the station or works, or on the Dredging Machines, Diving Bells, or other Craft themselves, and the Master of an approaching Steam Vessel, when abreast of the flag nearest to him so hoisted on the bank, or when within not less than one hundred and fifty yards of the Machines, Diving Bells, or other Craft having such flag hoisted, shall reduce the speed of the engines to *Dead Slow* until his Vessel shall have passed any such Dredging Machines, Diving Bells or Craft, or works being executed, at least fifty yards.

XXI. Steam Vessels to slow on approaching Trustees' works.—Wherever, in order to protect works being executed by the Trustees, or for other navigation purposes, the Trustees shall erect any boards on the banks of the River having the words *Dead Slow* painted thereon, the same shall be considered as a substitute for red flags, and the speed of every Steam Vessel shall, when approaching and passing such boards, be reduced in the same manner in all respects as if red flags had been exhibited.

XXII. Ships passing Bowling and Dalmuir to slow.—The Master or other person in charge of any Steam Vessel passing up or down the River, when approaching the entrance to the Forth and Clyde Canal from the River,* and the entrance to Bowling Harbour, and the Trustees' Slip at Dalmuir,* and the Cattle Discharging Wharf at

*Discontinued.

Shieldhall,* shall, at least one hundred and fifty yards from the said Entrances or Slip,* or Wharf respectively, reduce the speed of the engines to *dead slow*, until at least fifty yards past said Entrances or Slip, or Wharf, so as not to cause damage to any vessel lying in said Harbour, or at the said Entrance to Canal, or the said Slip or Wharf, or hurt or injury to persons employed thereon.

XXVII. Rubbish not to be thrown into River.—The Master, or other person in charge of any Vessel, or any other person, shall not throw or permit to be thrown, from his Vessel, or any other place, ashes or rubbish of any kind into the River.

XXXIII. Vessels aground or submerged or obstructing the Navigation to exhibit Red lights.

1. In the event of a vessel being aground or submerged in the River or Harbour, the Master, Pilot, or other person in charge of such vessel shall exhibit:—

By night.—Two Red Lights placed vertically not less than six feet apart, where they can best be seen, the lower to be at a height of not less than twenty feet above the hull; and Two White Lights placed where they can best be seen, at a height not exceeding twenty feet above the hull, one at each end of the vessel, in such position as to indicate as nearly as possible the extent of the obstruction.

Each of such Lights shall be of such a character as to be visible all round the horizon at a distance of at least two miles.

By Day.—Two Black Balls or Shapes, each two feet in diameter, vertically not less than six feet apart, where they can best be seen, the lowest to be at a height of not less than fifteen feet above the hull; and Two Red flags in the same position as the Two White lights, indicating the extent of the obstruction.

Provided that, if the vessel be submerged to such extent, that the Lights, Balls, or Flags, or any of them, cannot be displayed therefrom, the Master, or other person in charge of such vessel, shall place on or near the site such boats or punts or other wreck-marking vessels as may be necessary to give full effect to the provision of this Section, and exhibit theron, by night and day respectively, such of the Lights, Balls, or Flags above prescribed as cannot be shown from the vessel itself.

Without relieving the Master, or other person in charge, of the immediate observance of the provisions of Section I hereof, and of their observance until the Trustee's servants are actually in charge of the vessel, as provided for under this Section, in the event of the vessel being submerged to the extent described in the proviso to Section I hereof, and of all those on board finding it necessary to leave the vessel, the Master, or other person in charge, may require the vessel to be lighted and marked by the Trustee; and, within twelve hours after receipt by the Harbour Master at Glasgow of such intimation, without prejudice to their statutory powers to deal with obstructions and recover the expenses, shall, by the use of such boats or punts or other wreck-marking vessels as may be necessary, placed on or near the site, light and mark the vessel in the following manner:—

By night—two green lights placed vertically, not less than six feet apart, where they can best be seen, the lower to be at a height of not less than twenty feet above water level; and two green lights, placed where they can best be seen, at a height not exceeding twenty feet above water level, one at each end of the vessel, in such a position as to indicate, as nearly as possible, the extent of the obstruction.

*Discontinued.

Each of such lights shall be of such a character as to be visible all round the horizon at a distance of at least two miles.

By day—two green balls or shapes, each two feet in diameter, in the same position as the Two Vertical Green lights, and Two Green Flags, in the same position as the Two Green Lights, indicating the extent of the obstruction.

3. The Master, or other person in charge of every vessel approaching any such Lights, Balls, or Flags, shall, before attempting to pass the same, ascertain that he can do so with safety.

Bye-laws enacted by the Clyde Pilotage Authority.—The following are extracts from the bye-laws enacted by the Clyde Pilotage Authority:—

16. The person in charge of a vessel navigating between Newark Castle and Kempock Point, when passing any board erected on the banks of the river or elsewhere having the words "Dead Slow" painted thereon, or when passing any Shipbuilding Basin, or vessel moored or in the act of being moored at or leaving a Wharf or Pier shall approach with caution and reduce the speed of his vessel to "Dead Slow" until past and clear.

33. Oil tank vessels carrying oil in bulk, or with a cargo or part cargo of petroleum or petrol, and vessels having bunker oil on board with any risk or sign of leakage, and vessels transferring oil from one to another, shall anchor in the area to the eastward of Rosneath Patch north of an imaginary line with Rosneath Buoy No. 27 bearing 270 degrees and west of an imaginary line with Green Island Buoy No. 24 bearing 000 degrees and when that anchorage is fully occupied shall anchor in the area north of an imaginary line with Rosneath Buoy No. 27 bearing 090 degrees east of an imaginary line with Baron's Point Buoy No. 29 bearing 000 degrees and west of an imaginary line with Tom Ban Hill bearing 013 degrees.

APPENDIX IV
REPORTED RADAR RANGES

Radar target Page of Pilot	Echo range in miles			Remarks
	Poor	Good	*Identifiable	
Ailsa Craig, 45 . . .	30	19	—	—
Butt of Lewis, 424 . . .	—	21	—	—
Cairns of Coll, 264 . . .	—	11	—	—
Caliach point, 277 . . .	—	10	—	—
Canna light, 482 . . .	—	8	—	—
Chùirn, Eilean a, 131 . . .	—	9	6	—
Compass hill, 484 . . .	—	13	10	—
Crowlin island, 547 . . .	—	10	—	—
Cuillin hills, 484 . . .	—	10	8	—
Cumbrae, Great, south, 72 . . .	—	10	—	—
Dunvegan head, 498 . . .	—	15	—	—
Eigg island, 478 . . .	—	19	—	—
Flannan isles, 308 . . .	—	20	—	113° True
Garvellachs, 178 . . .	—	6	—	—
Gigha island, 152 . . .	—	15	—	—
Glas eileanan light, 280 . . .	—	9	—	—
Gunna sound, 261 . . .	—	12	8	—
Harris, east coast, 427 . . .	—	—	6	—
Hartamul, 324 . . .	14	—	—	265° True
Kebock head, 427 . . .	—	6	—	—
Laimishader, Aird, 414 . . .	—	—	5	—
Lewis island, 393 . . .	27	—	—	—
Maddy, Mòr, 370 . . .	—	—	6	—
Mhàil, Rubha a', 138 . . .	—	19	8	—
Muldoanich, 316 . . .	—	13	10	—
Neist point, 497 . . .	—	16	10	—
Oigh sgeir, 482 . . .	—	12	—	—
Pladda island, 66 . . .	—	8	—	—
Rhum island, 480 . . .	20	15	—	—
Roan Bogha, 262 . . .	—	3	—	—
St. Kilda, 306 . . .	—	28	—	—
Sanda island, 60 . . .	8	7	—	—
Sheep island, 60 . . .	—	10	—	—
Shiant islands, 443 . . .	—	17	9	—
Isle of Skye, 484 . . .	—	13	—	—
Trodday eilean, 514 . . .	—	7	7	—

*Identifiable with charted features from the shape and character of the echo.

Radar Target Page of Pilot	Echo range in miles			Remarks
	Poor	Good	*Identifiable	
Turnberry point, 47 .	—	13	—	—
Uiginish light, 443 .	—	9	—	—
Uisenish Rubh', 427 .	—	9	—	—
Vaternish point, 374 .	—	12	—	—
Wrath, Cape, 620 .	—	31	21	<i>See also North Sea Pilot, Vol. II</i>

*Identifiable with charted features from the shape and character of the echo.

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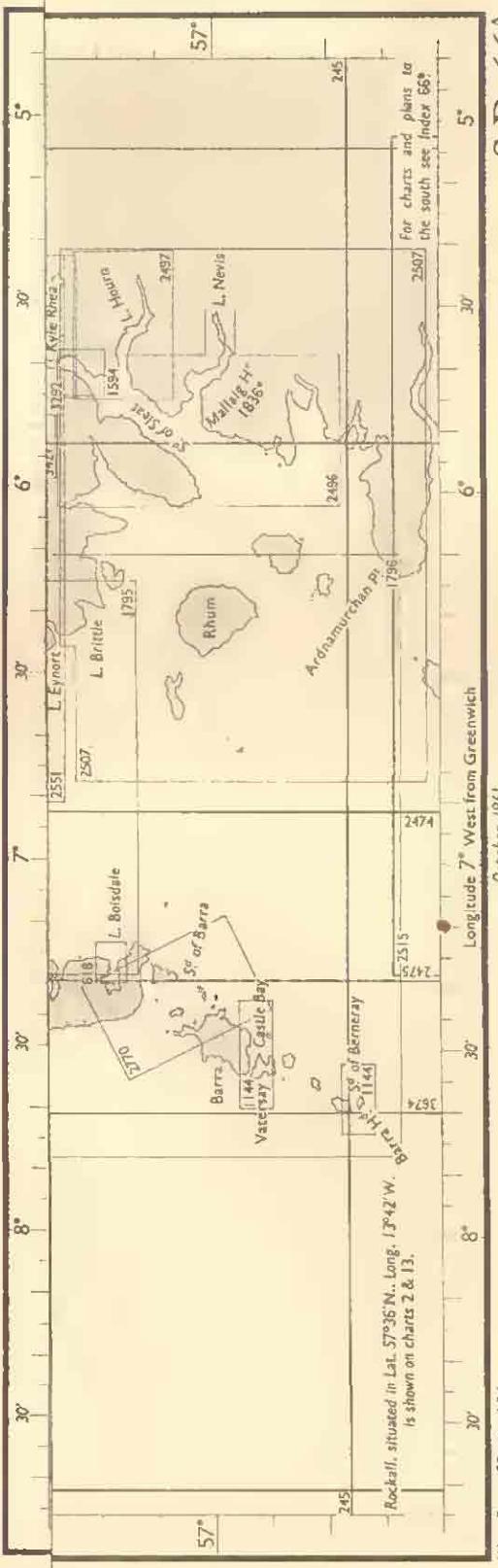
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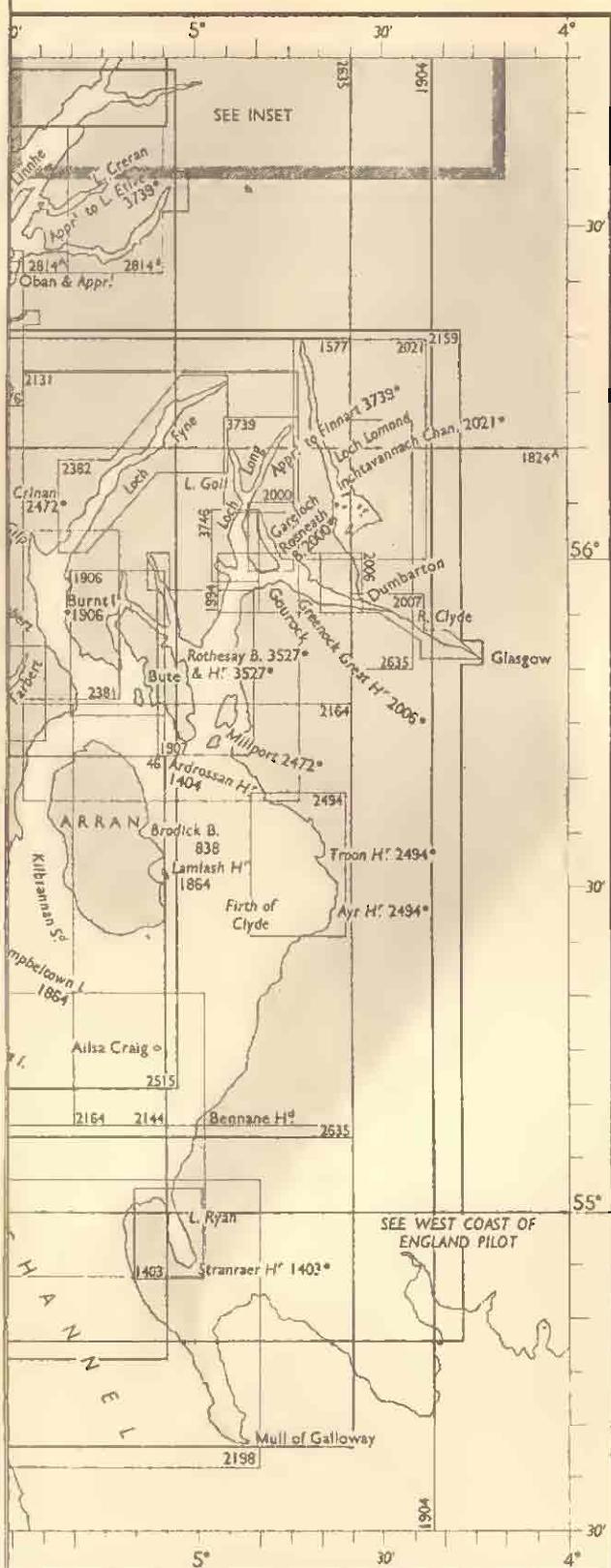
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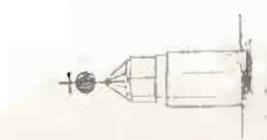
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2515
2159
2198 ?
2149 ?





Kilantringan lighthouse from southward
(original dated 1834.)



Craig Lassan
beacon
(original dated 1894.)



Conswall Point lighthouse
from north-eastward.
(original dated 1894.)



The Mout in line with Cairn Point lighthouse, bearing 154°.
(original dated 1894.)