QUARTERMASTER SUPPLY

in the

EUROPEAN THEATER OF OPERATIONS IN WORLD WAR II

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QUARTERMASTER SUPPLY

in the

EUROPEAN THEATER OF OPERATIONS
IN WORLD WAR II

Volume I

PLANS, POLICIES, AND PROCEDURES

By

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THE QUARTERMASTER SCHOOL
CAMP LEE, VIRGINIA

PREFACE

While dictators blueprinted their plans for conquest, the freedom-loving nations of the world failed to amass either the personnel or the materiel of war. From the Treaty of Versailles to the Austrian Anschluss, Americans concerned themselves with peacetime pursuits. One war had been fought to make "the world safe for democracy." Even though its objective had not been achieved, the average American saw no need for his country to be drawn again into conflicts that he chose to call "other nations' squabbles." He had only an academic interest in Japan's rape of Manchuria and subsequent invasion of China. Ethiopia was too remote for him to be aroused by Haile Selassie's plight. He did not view the Spanish Civil War as part of an Axis plan for world domination, although he was aware that General Francisco Franco was receiving aid from Italy and Germany. Even after Germany annexed Austria on 12 March 1938, America was slow to realize that the adoption of a defense program was imperative. When Hitler declared that he had no further territorial ambitions in Europe, he was taken at his word by the average American. Six months later, when the Sudeten Nazis on the frontiers of Czechoslovakia won at the Munich Conference the assent of Great Britain and France to their demands for annexation with Germany, America shared Prime Minister Sir Neville Chamberlain's hope that the appeasement policy would assure "peace in our time." On 15 March 1939, however, Hitler marched into Prague to occupy all that was left of Czechoslovakia; on 7 April Mussolini invaded Albania; on 1 September Hitler invaded Poland; and on 3 September Great Britain and France declared war on Germany.

"Passionately though we may desire detachment," the President of the United States said to the American people in a fireside chat delivered on the evening of 3 September, "we are forced to realize that every word that comes through the air, every ship that sails the sea, every battle that is fought, does affect the American future."

During the winter of 1939-40 America's fears were somewhat allayed by what cynics called the *sitzkrieg*, or sitting war. Then came the spring of 1940. Hitler invaded Norway, Denmark, Belgium, Holland, Luxembourg, and France. By 26 May, when the President made his first great national-defense speech, it seemed that Hitler was about to launch an invasion of the British Isles. "We are calling upon the resources, the efficiency," said President Roosevelt, "and the ingenuity of the American manufacturers of war material of all kinds—airplanes, tanks, guns, ships, and all the hundreds of products that go into this materiel. . . .The Government of the United States stands ready to advance the necessary money to help provide for the enlargement of factories, the establishment of new plants, the employment of thousands of necessary workers, the development of new sources of supply for the hundreds of raw materials required, the development of quick mass transportation of supplies."

The miracle of American production for total war is now known throughout the world. Workers in mines, fields, shipyards, and factories answered the President's call for maximum speed and accuracy. The Regular Army increased from 188,000 on 1 July 1939 to 388,000 on 1 July 1940; and on 16 October 1940, 16,400,000 men registered under the provisions of the Selective Service Act. In preparation for the vast new force, the Quartermaster Corps faced one of the largest tasks in the history of mass procurement. Before the first man was drafted, provision had to be made for his shelter, his food, and his clothing and equipment.

On 7 December 1941 Japan attacked Pearl Harbor. The Congress of the United States assembled the next morning to declare war on Japan and 3 days later to declare war on Germany. Theaters of operations thousands of miles from home bases would have to be supplied. Little doubt existed that America's productive capacity would be adequate. The war potential, however, had to be measured in terms of ability to deliver supplies to all parts of the world. War had to be carried to Japan across 6,000 miles of ocean. War had to be carried to Germany across 3,000 miles of ocean and 350 miles of land.

The volumes in this series of studies are concerned with the story of quartermaster supply in the European Theater of Operations. The first volume sets forth the broad plans, policies, and procedures that governed quartermaster supply throughout the theater. The volumes to follow will deal specifically with major fields of quartermaster activi-

ties—subsistence, clothing and individual equipment, fuel, general supplies, salvage and services, and graves registration. Another volume will give an account of the personnel who carried out the quartermaster program; and the two volumes concluding the series will deal with problems that arose upon the cessation of hostilities—redeployment and the supply of Allied military groups and other persons dependent upon the United States Army.

The basic material was collected and compiled in the European Theater by the Historical Records Branch, Office of the Chief Quartermaster, which was created in 1942. The personnel and records of the branch were moved with the Office of the Chief Quartermaster from London to Cherbourg in August 1944. A month later the material was recrated and moved to the Hotel Astoria, the Paris office of the Chief Quartermaster. From Paris, personnel of the branch made periodic tours to every quartermaster unit and installation on the Continent, gathering information, taking pictures, and establishing procedure for subsequent reports. In June 1945 the office was moved to Versailles. When the Office of the Chief Quartermaster was divided and the larger portion established in Frankfurt am Main, a section of the branch was sent to Germany. In March 1946 the material that had been accumulated during a 3-year period was shipped to the United States. When this series of studies shall have been completed, the records will be deposited in the Quartermaster Technical Library, The Quartermaster School, Camp Lee, Virginia.

"The only history worth reading," said John Ruskin, "is that written at the time of which it treats." Yet the chronicler of contemporary events or of events in the immediate past treads a path marked by many danger signals. Supporting documents, though accurately quoted or paraphrased, may have been inaccurately prepared. Statistical reports may have been padded. Letters may have been worded in such a way as to conceal facts. The contemporary chronicle, however, when studied in perspective that only the passing years can provide, furnishes the basis for the definitive history that will be written after time shall have dimmed the outline of personalities and after evidence presented by participants and onlookers shall have been evaluated. Therefore, this series, which is to be used for instructional purposes, is not to be considered official. It is hoped that persons who took part in the quartermaster supply program in the European Theater will send constructive criticism that can be incorporated in a revised edition.

Eudora Ramsay Richardson

31 December 1947
The Quartermaster School
Camp Lee, Virginia

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CHAPTER 1

PLANNING

Less than a month after the United States declared war on Germany the United States Army Forces in the British Isles (USAFBI) was established under the command of Major General James E. Chaney.[1] On 1 January 1942 the Allied Nations had signed the pact in which each participant pledged not to make separate peace with the Axis Powers. On 17 January the first ship was torpedoed off the eastern coast of the United States. Prime Minister Winston S. Churchill was then in Washington conferring with President Franklin D. Roosevelt. The die had been cast. The United States and Great Britain had declared common cause. A war that could end only in the unconditional surrender of Germany had to be fought on enemy soil by an expeditionary force based in the United Kingdom.

BEGINNING OF PLANNING

Long-term planning was necessary to the successful invasion of the European Continent. Men and supplies had to be transported to the United Kingdom in unprecedented numbers and volume despite the limitations of shipping space and the effective submarine warfare that the Germans were waging in the Atlantic.

By 10 February 1942 the British War Office was able to describe the general policies by which it hoped to obtain maximum economy of shipping. The Joint Planning Staff and the Combined Military Transportation Committee had been established. The Director of Movement, British War Office, worked closely with the Liaison Movements Officer of USAFBI. The Combined Military Transportation Committee, under the chairmanship of the United States Army Assistant Chief of Staff, G-4, was made up of British and American naval, air, and shipping representatives. It advised the Joint Planning Staff on movements and presented major movement problems to the Combined Chiefs of Staff or the Combined Shipping Adjustment Board. The Director of Movement, British War Office, met daily with representatives of the Admiralty, the Air Ministry, the Ministry of War Transportation, and other branches of the War Office to discuss the priority of movements; and the USAFBI Liaison Movements Officer attended these meetings. When further discussion was advisable, the British Director of Movement called together other British and American representatives. The solution of such problems as those connected with the reception of the United States forces in Great Britain was the responsibility of a coordinating committee. The Director of Movement was represented in Washington by a deputy for planning and personnel and a deputy for cargo shipping and maintenance, who were members of the Combined Military Transportation Committee.[2]

SPECIAL ARMY OBSERVERS GROUP

The planning that resulted eventually in the build-up of men and supplies on the Continent had its basis in the work of the Special Army Observers Group (SPOBS)—17 officers who left the United States for London on 8 May 1941 to serve under Major General Chaney. The first representative of the Quartermaster Corps in this group was Lieutenant Colonel W. H. Middleswart. Garrisoning and supplying United States troops in Iceland was SPOBS first task. On 8 January 1942 USAFBI was established.[3] When United States troops landed in Northern Ireland on 26 January 1942, the quartermaster section of SPOBS consisted of but two officers, Lieutenant Colonel Middleswart and First Lieutenant L. J. Zinnecker. As a result of conferences with representatives of British war agencies, arrangements had been made for quartering and supplying the first contingent of American troops to reach the United Kingdom, and foundations had been laid for the extensive and detailed plans soon to be outlined.[4]

ROUNDUP AND BOLERO

ROUNDUP was the name given to a proposed British-American invasion of the Continent. The ROUNDUP Administrative Planning Staff, organized in the spring of 1942, met regularly to discuss problems bearing upon landing troops in 1943 at one or more points on Continental shores. Between April and June 1942 a plan to be known as SLEDGEHAMMER was briefly under discussion. It contemplated an emergency assault on the French coast to divert German atten-

tion from the Russian front before the end of the year. Never definitely formulated, it was dropped in June. The ROUNDUP Administrative Planning Staff was responsible for coordinating the detailed administrative arrangements that must be made by the service departments and staffs of the combined commanders in order that offensive operations might be carried out. By the middle of June studies had been initiated on such subjects as methods of landing, availability of landing craft, development of captured ports, establishment of lines of communication, and the personnel required for the operation. Maintenance requirements were considered under the following heads: foodstuffs; petrol, oil, and lubricants; ammunition; warlike stores and other ammunition; medical stores; engineer stores; vehicles; and special equipment.[5]

The ROUNDUP planners anticipated that 1,150,000 troops would be in the United Kingdom by D-Day, that 670,000 troops would be on the Continent by D-plus-42-day, and that subsequently the troop strength would increase by 70,000 a month. The 42 sections of the ROUNDUP Administrative Planning Staff were assigned the task of defining the responsibilities and coordinating the requirements of the various services.[6]

Meanwhile another important planning committee was at work in the United States and in the United Kingdom. BOLERO was the name given to the build-up of supplies and troops in the United Kingdom preliminary to invasion of the Continent when the ROUNDUP plan would be put into action. A BOLERO committee in Washington worked closely with a BOLERO committee in London. In April 1942 Colonel Middleswart submitted to the British an approximation of the storage space for quartermaster items that would be needed to carry out a proposed million-man program. He stressed the importance of increasing the personnel engaged in planning and suggested that conferences be held with the British War Office, the Air Ministry, and other agencies in the United Kingdom for the purpose of determining the amount of space then available and the ports that could be used for unloading American supplies.[7] His suggestion resulted in a meeting of representatives from G-1, G-4, and the supply services, which was called for the purpose of formulating planning recommendations.[8]

The War Cabinet BOLERO Combined Committee (London) held its organization meeting on 4 May 1942. In its first published paper the committee stated its purpose as follows: "To prepare plans and make administrative preparations for the reception, accommodation, and maintenance of U. S. Forces in the United Kingdom and for the development of the United Kingdom in accordance with the requirements of the ROUNDUP Plan."[9] In open communications the agency was known as the Anglo-American Coordinating Committee.[10]

The committee held its first regular meeting on 5 May 1942. Sir Findlater Stewart was appointed chairman. The British representatives were Major General R. M. Wooten, War Office; Major General H. M. Gale, Home Forces; Captain C. C. Hughes Hallett, Combined Operations; Air Commodore R. P. Musgrove Whitman, Air Ministry; Brigadier Sir Harold A. Wernher; Mr. R. H. Hill, Ministry of War Transport; and Mr. T. H. Sheepshanks, Ministry of Home Security. Though the composition of the United States representation had not been determined, the following officers from USAFBI were present: Brigadier General C. L. Bolte, Brigadier General H. M. McClelland, Colonel R. W. Barker, and Colonel G. W. Griner.[11]

The Accommodation Sub Committee was created on 9 May and charged with the preparation and coordination of plans for the provision and construction of accommodation for personnel and stores required by the American forces. The ROUNDUP Administrative Planning Staff served as the link between the ROUNDUP and the BOLERO planners.[12]

Receiving and accommodating vast numbers of American troops in the United Kingdom presented problems as complex as they were varied. Such questions came up for consideration as acquainting Americans with British procedure, arranging contacts, establishing the jurisdiction of civil authorities, and setting up machinery for the censorship of stories prepared by American correspondents. In the words of Sir Findlater Stewart—

> These problems will have the added complication that the forces concerned are as ignorant of our institutions and way of life as the people among whom they will be living are of all things American. It will be one of our most urgent tasks to educate each side so that both host and guest may be conditioned to each other . . . .
>
> It seems necessary to initiate at some stage a publicity campaign to accustom the community to hardship arising from

the necessary diversion of already limited services and commodities to the United States forces and to inform and instruct the inhabitants of the reception area in the problems they will have to face.[13]

The War Department directed on 14 May 1942 that USAFBI be organized into a ground force command, an air force command, and a services of supply command.[14] On 15 May 1942 the BOLERO Combined Committee was notified that Major General John C. H. Lee, with a staff of officers, was flying to London within a few days to make arrangements for handling arrivals of United States troops and supplies.[15] On 24 May 1942 USAFBI announced the establishment of a command to be designated Services of Supply, United States Army Forces in the British Isles (SOS, USAFBI) and the assignment of Major General Lee as commanding general.[16]

The grouping of supply services in the field was in line with the plan upon which the Army had been organized on 9 March 1942, when the various arms and services had been centralized under Army Ground Forces, Army Air Forces, and Services of Supply.[17] Major General Lee, representing all the supply services, attended a meeting of the BOLERO Combined Committee (London) for the first time on 26 May 1942. The Committee had before it a cablegram from General Marshall raising to 105,700 men the estimate of troops scheduled to arrive in the United Kingdom during the summer of 1942. Near the end of May 100 officers would arrive to staff SOS headquarters. For SOS depot units 1,000 men would arrive in June and 1,000 in July. For other SOS units in England more than 8,000 men would arrive before September in addition to personnel for eight SOS units in Northern Ireland. The cablegram asked that recommendations be submitted as to the composition of BOLERO depot units.[18]

On 29 May Major General Lee submitted his first estimates of requirements for troops in the United Kingdom.[19] The study basic to the making of this report enabled the War Cabinet BOLERO Combined Committee (London) to formulate its key plan, which was issued on 31 May 1942 and later revised to meet changing conditions. The plan dealt primarily with British consideration of United States requirements. It was not issued as a directive but rather as a bulletin of information for agencies in the British government. The plan covered disembarkation ports, command and signal centers for headquarters, rail lines of communication, inward movement of stores, reception camps, hospitals, concentration areas, accommodation of personnel, ports of embarkation for ROUNDUP, and the reception, maintenance, and training of troops. It was based on an estimate that 1,049,000 troops would be stationed in the United Kingdom by the beginning of the invasion, a figure far exceeded when D-day did arrive.[20]

On 5 June 1942 the BOLERO Combined Committee reported the arrival of troops in England and Northern Ireland as follows:

	Ground and Service Forces	Air Forces	Total
In England:			
Headquarters, USAFBI	1,463		1,463
Air Force Headquarters and Ancillary Units		2,346	2,346
Fifteenth Bomber Squadron		496	496
Total	1,463	2,842	4,305
In Northern Ireland:			
Headquarters and Headquarters Troops	8,985		8,985
*Third Infantry Division	14,619		14,619
First Armored Division	8,269		8,269
Total	31,873		31,873
Grand Total	33,336	2,842	[21]36,178

*Should be Thirty-fourth Division according to cablegram 288, AGWAR to SPOBS, 8 January 1942.

Despite the considerable number of troops in the United Kingdom, the Quartermaster Service had not been organized. When SOS, USAFBI, had been set up in the United States, Brigadier General Robert M. Littlejohn had been appointed Chief Quartermaster. From the middle of May until his departure for England on 28 May, he had concerned himself with procuring qualified quartermaster personnel for use in USAFBI. Brigadier General Littlejohn reached London on 4 June 1942. Four days later USAFBI was dissolved and the European Theater of Operations, United States Army, (ETOUSA), was established. The order issued by Major General Chaney read as follows:

1. By direction of the President, transmitted in cabled instructions from the Chief of Staff, United States Army, the European Theater of Operations for the United States Army is established.

. . . . . .

3. By agreement between the War and Navy Departments, the Commanding General, European Theater, will exercise unity of command over all United States forces assigned for operations in this theater.

4. The undersigned assumes command of the European Theater of Operations.[22]

On the day that the European Theater of Operations was established Brigadier General Littlejohn was assigned to the Special Staff as Chief Quartermaster.[23] Thereafter he gave counsel and guidance to all BOLERO planning that had to do with quartermaster supply. Charts showing the organization of SOS, ETOUSA, in June 1942 and in August 1943 appear in appendix I and appendix XIII.

The War Cabinet BOLERO Combined Committee (London) accomplished its most important work between 4 May and 3 November 1942. It met six times in May, four times in June, five times in July, three times in August, once in September, once in October, and once in November.[24] Emphasis had necessarily shifted from the build-up of personnel and stock piles in England to the supply needs of troops engaged in the North African operation (TORCH), which had begun on 8 November. The British, however, continued to press the American staff to accumulate stores for ROUNDUP. Lieutenant General Brehon B. Somervell, Commanding General, Services of Supply, War Department, urged Major General Lee to resist the pressure, saying that insufficient shipping space made the accumulation of stores in the United Kingdom inadvisable until the African campaign should have been concluded. Although planning for ROUNDUP might continue, he said, no equipment or supplies could be forwarded to the United Kingdom in excess of those required to support the approved garrison of 427,000 American troops.[25]

The War Cabinet BOLERO Combined Committee (London) accomplished much during those first months of preparation for invasion of the Continent. It furnished a meeting place to which Britons and Americans could bring their problems for discussion and expeditious solution. The conference method promoted good feeling and understanding, without which cooperative effort would have been difficult.[26]

Between May and November 1942 the BOLERO Key Plan passed through two revisions. The second edition, published on 25 July 1942, was based on information made available on 1 July. The emphasis was not only on the reception, accommodation, and maintenance of the United States forces in the United Kingdom but also on the development of the United Kingdom as a base from which an invasion could be launched the following spring. The estimated strength of American troops to be based in the United Kingdom prior to D-day was raised from 1,049,000 to 1,147,000, and the plans for supplying these troops both in the United Kingdom and on the Continent were presented in greater detail than in the first plan.[27] The third edition, published on 11 November 1942, sought to assure the provision of the facilities that United States forces would require for the implementation of their administrative plans. It dealt only incidentally with the provision of accommodation for British units evacuated from their normal locations and with British requirements for offensive operation. This plan returned to the original estimate of 1,049,000 troops as the number that would be transported from the United States to the United Kingdom before D-day.[28]

The fourth edition of the BOLERO Key Plan was not published until 12 July 1943.[29] BOLERO planning, however, which had been interrupted by TORCH, had been resumed shortly after the Casablanca Conference, 14-26 January 1943, at which new plans were made for the invasion of the European Continent. On 6 February 1943 the North African Theater of Operations, United States Army, (NATOUSA), was created, and Lieutenant General Dwight D. Eisenhower was placed in command.[30] The way was now cleared for ETOUSA to concentrate upon building up men and supplies that would make possible invasion of Europe in the late spring or early summer of 1944. The anticipated troop strength for 1943 was increased to 19 divisions in addition to an air force strength of 172,000 men. Major General Lee on 4 February requested Brigadier General Littlejohn, then temporarily Deputy Commander of SOS, ETOUSA, to send Lieutenant General Frank M. Andrews, the new Commanding General of the European Theater, an estimate of immediate SOS troop requirements.[31]

For some time SOS, ETOUSA, had been conducting detailed studies leading to the formulation of an over-all supply program. On 5 February 1943 the first basic planning directive was published. Planning was no longer to be considered a staff school problem but was to be worked out as an actuality. Accordingly, staff sections were instructed to prepare detailed supply plans for submission to ETOUSA headquarters.[32]

It was also in February that the United States element of the Joint Q Planning

School was established. ("Q" was the British designation for supply.) The British had begun the school on 7 October 1942 for the purpose of acquainting officers with plans bearing upon supply operations on the Continent. After February it was under the joint supervision of the British Quartermaster General and the Commanding General, SOS, ETOUSA.[33] The course, which covered 11 days of lectures and conferences, included such subjects as organization of lines of communication, supplies in a theater of operations, distribution of vehicles, repair, British organization and services compared with those of the United States, civil administration, combat tactical planning, and maintenance of combat troops. The quartermaster personnel selected to enroll in the Joint Q Planning School were key officers who were to be used in the supply program of future British-American amphibious operations.[34] Speaking to the students on 1 February 1943, Brigadier General Littlejohn summed up the underlying purpose of the school and the planning program in these words:

> Regardless of fairy tales and opinions to the contrary, nothing in this world happens without a creator or master mind. Most of us here went through a blitzkrieg last fall. Did not have time to figure out where the master mind was or how; but since that blitzkrieg is over we have begun to make investigations in order that we may understand the whys and wherefores and be able to perform more efficiently when the next one hits us.[35]

After a long period of inactivity, the War Cabinet BOLERO Combined Committee (London) met again on 18 February 1943. Sir Findlater Stewart, still serving as chairman, explained that plans for a new BOLERO program necessitated the committee's again becoming active.[36] The Casablanca Conference had resulted in a definite program for invasion that required persistent and accurate build-up supplies to assure success of the Continental operation.

The Chiefs of Staff, Supreme Allied Command, (COSSAC), was created at Casablanca. Its function was the coordination of Anglo-American military plans and activities on land, sea, and in the air.[37] Formerly the Combined Operations Section, ETOUSA, had maintained liaison with the British through a similar agency in the British War Office. COSSAC became the final authority on all tactical and logistical questions.[38]

On 19 May 1943 COSSAC passed the following resolution:

> That forces and equipment shall be established in the United Kingdom with the object of mounting an operation with target date as 1 May 1944, to secure lodgment on the Continent from which operations can be carried out.[39]

However, the BOLERO Combined Committee (London) continued its work. In the fourth edition of the BOLERO Key Plan the troop strength for ROUNDUP was raised to 1,340,000, which was based upon estimates received from ETOUSA on the 7th of July.[40] On 30 September, the troop strength estimate was raised to 1,446,000 as the result of decisions reached by the conferees who met at Quebec on the 24th of August.[41] By late fall the War Cabinet BOLERO Combined Committee had completed the basic work for building up invasion supplies.

QUARTERMASTER 100,000-MAN PLAN

Meanwhile, other agencies were working on large-scale plans. Although the ROUNDUP Administrative Planning Staff had been abolished on 11 May 1943, many of its policies formed the basis of continued plans for a Channel-crossing operation. The Administrative Planning Branch of COSSAC took up the work that had been laid down by the ROUNDUP Administrative Planning Staff.[42]

Immediately after its organization the Office of the Chief Quartermaster had considered that planning was an important part of its work. Extensive and intensive studies conducted over a period of months resulted in the publication during the summer of 1943 of the Quartermaster 100,000-Man Plan.[43] This was a study of quartermaster requirements during a cross-water assault and subsequent operations. Its purpose was to give logistic information to army and higher-echelon planners. The plan was divided into three sections; namely, assault operations, full-scale operations, and planning reference data. All supply requirements were estimated in terms of ship tonnage. The study was made graphic by carefully prepared charts, which showed the breakdown of supplies by items and the organization of personnel.[44]

After the completion of the 100,000-Man Plan, the Office of the Chief Quartermaster worked upon adjustments to changing conditions. Detailed preliminary drafts of plans for

all classes of supplies and all types of services were prepared in the late fall and early winter of 1943. Published during the first 3 months of 1944, these plans played an important part in the over-all planning conducted by ETOUSA.

OVERLORD

ETOUSA reported on 12 June 1943 that "the Combined Chiefs of Staff have decided to appoint, in due course, a Supreme Commander of all United Nations Forces, for the invasion of the Continent of Europe from the UK." The Supreme Commander would be responsible to COSSAC for planning and executing operations and for coordinating training policies for amphibious forces. Until his appointment all planning would be the responsibility of the Chief of Staff, who would develop an organization capable of effecting continuous flow of troops, replacements, and supplies from the United Kingdom to the Continent. Such an objective could be accomplished only through complete integration of the services supporting the operations.[45]

General Dwight D. Eisenhower's appointment as Supreme Commander was confirmed by President Roosevelt on 10 December 1943. Lieutenant General Walter Bedell Smith, named Chief of Staff, reached England on the 8th of January to replace Lieutenant General Sir Frederick E. Morgan, who had held the office almost a year. The various COSSAC plans were first on Lieutenant General Smith's agenda. The new Chief of Staff informed General Eisenhower that plans for the invasion were so excellently drawn that he hoped within a short time to coordinate them into a master plan to submit to him.[46] The Combined Chiefs of Staff confirmed General Eisenhower's appointment on 14 February 1944.[47]

OVERLORD had replaced ROUNDUP as the code name for the entire Continental operation. COSSAC issued its first plan for OVERLORD on 15 July 1943 and its second on 7 January 1944.[48] Subsequently plans were published by the Supreme Headquarters, Allied Expeditionary Forces, (SHAEF).

Plan for the Assault Stage

The Initial Joint Plan (NEPTUNE) was published on 1 February 1944. The code name NEPTUNE referred to the assault stage of OVERLORD. The purpose of this plan was providing subordinate commanders with a basis for planning. The objective of the operation was the securing of lodgment on the Continent from which further offensive operations could be developed. The lodgment would not be an isolated operation but part of the over-all strategic plan for the total defeat of Germany by means of heavy and concerted assaults upon German-occupied Europe from the United Kingdom, the Mediterranean area, and Russia. The last day of May was set as the target date, when preparations should be complete. H-hour—the time of the first wave's landing—was to be 1½ hours after nautical twilight and about 3 hours before high water so that a minimum of 30 minutes of daylight might be allowed to observe bombardment before H-hour and so that a maximum number of vehicles might be landed on the flood tide. The Supreme Commander of the Allied Expeditionary Force, the Air Commander-in-Chief of the Allied Expeditionary Air Force, and the Allied Naval Commander of the Expeditionary Force were jointly charged with the planning and execution of the initial part of the operation. Five amendments to the Initial Joint Plan were published between 1 February and 22 April 1944. These were in line with the opening paragraph of the plan, which had stated that modifications might be found necessary in the course of planning.[49]

The Initial Joint Plan of 1 February 1944 carried an appendix that set up an organization for build-up control, known by the code name BUCO and composed of military and naval representation. BUCO was given authority to adjust priorities and to supervise the flow of units across the Channel. Established at Fort Southwick, BUCO was under the joint control of the Commander-in-Chief of the Twenty-first Army Group, British, the Air Commander-in-Chief of the Allied Expeditionary Air Force, and the Allied Naval Commander of the Expeditionary Force. The Initial Joint Plan directed the organization to make loading forecasts and follow-up loading tables showing embarkation sectors and destinations and to keep 1 week ahead of anticipated sailings.[50]

On 23 March 1944 BUCO published a detailed plan of organization and procedure. In this document its objective was stated as follows:

> To exercise detailed control of the build-up of personnel and vehicles by regulating priorities within the limits of the craft and shipping available in accordance with the orders of the joint com-

manders-in-chief.

To implement diversions ordered by the executive authorities.

To provide machinery for effecting any necessary late adjustments to the initial loading plans.

To decide whether any demands made upon BUCO could be met by air.[51]

Joint Outline Maintenance Project

A week after the formulation of the Initial Joint Plan two other plans were published, known as Joint Outline Maintenance Projects. The United States version, known as JOMP (US), stated the following objective:

To indicate the broad policy for the administration and maintenance of all forces on Operation NEPTUNE on the Continent and to assist the commanders in the making of plans.

To indicate in greater detail the policy for maintaining the land forces and for maintaining the naval air forces as far as the responsibility of the land forces reaches.

The Commander-in-Chief of the Twenty-first Army Group, British, was responsible for coordinating the general administrative planning of all services, both United States and British, and the Commanding General of the First United States Army was responsible for assessing and scheduling the stores required for the assault and the build-up. The plan established reserves for all types of supplies.[52]

Simultaneously a British version of JOMP was published. This was identical with the United States version except that the general officer in charge of the Second British Army was responsible for assessing and scheduling stores.[53]

The procedure set up in the JOMP plans provided for an interservice body, given the code name TURCO, whose purpose was to expedite the turn-around of ships and craft necessary to establish a beachhead in the cross-Channel operation and subsequently to maintain the initial attack. TURCO was composed of representatives from each service, who attacked the problem at their service headquarters in an effort to achieve the optimum rate of turn-around of all shipping.[54]

First Army Operations Plan

Officers from G-2, G-3, and G-4 sections of the First United States Army were ordered to London on 19 December 1943 to join with officers of the Twenty-first Army Group, British, to work on plans for Continental operations.[55] On 25 February 1944 the First Army operations plan for NEPTUNE was published. Calculations had been made of the amount of supplies and the number of men that could be lifted across the Channel in available ships and landing craft. Intelligence of enemy reinforcements in the early spring, however, necessitated many recalculations.[56] Nevertheless, on 15 April 1944 the First Army Planning Group returned from London to Army headquarters in Bristol, their work having been completed.[57] The First United States Army under the Twenty-first Army Group, British, would be responsible for coordinating the logistical work of all United States forces from D-day to D-plus-14-day; the Advance Section, Communications Zone, would be responsible from D-plus-15-day to D-plus-41-day; and the Forward Echelon, Communications Zone, would be responsible during the remaining period.[58] The scope of this plan extended beyond that of the Initial Joint Plan and forecast operations far into the Continental campaign.[59]

The First Army planners, upon beginning their work, requested the Office of the Chief Quartermaster to submit a detailed quartermaster plan for operation NEPTUNE. This plan, appearing as annex 7 to the First Army plan, prescribed the kinds and quantities of quartermaster supplies to be carried or drawn from dumps or depots throughout the various stages of the operation; the maintenance and reserve build-up for each dump and depot; the locations of quartermaster installations on the Continent; and the procedures to be followed in the rendering of quartermaster services.[60]

Mounting the Operation OVERLORD

On 9 January 1944 the Commanding General, SOS, ETOUSA, notified the base section commanders and the chiefs of supply services that he was responsible for the administrative planning connected with the mounting of the OVERLORD operation and directed the services to prepare tentative plans.[61] The SOS Plan for Mounting the Operation OVERLORD was published on 20 March 1944. It was based on the general assumptions that the Commanding General of the Twenty-first Army Group, British, would issue instructions for full-scale assault against the Continent in accordance with the plans of SHAEF

and the Combined Chiefs of Staff and that at least one airborne division would be used, with special consideration to be given to problems peculiar to airborne units. The responsibilities of SOS, ETOUSA, were defined as follows:

> Mounting OVERLORD as far as United States forces are concerned in accordance with the requirements of the Commanding General of the Twenty-first Army Group.
>
> Coordinating administrative plans and operations connected with mounting field forces, air forces, SOS forces, and naval forces.
>
> Such administrative planning and implementation as selecting, siting, constructing, operating, and administering marshaling and embarkation areas; moving forces and their supplies from home stations; loading personnel, equipment, and supplies into ships and craft; and operating hards and beaches, and approaches not otherwise provided for.
>
> Coordinating British and United States agencies.
>
> Preparing SOS units for oversea movement.

The responsibilities of the commanders of the base sections were defined as follows:

> Concentrating residual organizations of assault and follow-up forces upon separation from parent units; moving them forward and shipping them in the order of priority established by the Commanding General of the First Army.
>
> Storing and later shipping those supplies that did not accompany the troops.[62]

The SOS OVERLORD mounting plan was amended nine times between the day of its publication and D-day. The amendments incorporated changes demanded by the tactical situation. The final amendment before 6 June was that of 22 May, which crystallized plans for successful invasion of the Continent.[63]

The quartermaster mounting plan was published on 30 March 1944 as annex 10 of the SOS mounting plan. The responsibilities of the Chief Quartermaster were defined as follows:

> Establishing, through the Commanding General, SOS, the policies and procedures pertaining to quartermaster activities that concern more than one base section.
>
> Making available supplies, equipment, personnel, and troops to base sections for use in marshaling and embarkation areas.
>
> Working with the United States Navy to determine requirements and to make supplies available to base section commanders to meet sea passage needs.
>
> Preparing all supplies required for military consumption and for reserve levels on the Continent, except those shipped from the United States.
>
> Making available in the theater—in compliance with administrative instructions of armies, air forces, and the Communications Zone—supplies and equipment, necessary for alerted units.
>
> Disposing of all quartermaster items, personal effects, and baggage left by departing troops.[64]

Following the publication of the SOS plan, each of the base sections concerned with the operation published detailed plans, which carried quartermaster annexes correlating the Quartermaster Service with the OVERLORD program.

Administrative Plan

Among the first tasks to which Lieutenant General Walter Bedell Smith turned his attention after becoming Chief of Staff to the Supreme Commander was an analysis of the OVERLORD administrative plan prepared by COSSAC. On 7 January 1944 he informed General Eisenhower that many sections of the plan could be accepted without change.[65] Accordingly, much of the work accomplished by Major General Sir Frederick Morgan entered into the permanent plan for OVERLORD.

As early as July 1943 plans had been formulated for the Services of Supply to function on the Continent under the name of the Communications Zone (Com Z).[66]

The Joint Administrative Plan for Operation OVERLORD, which was published on 19 April 1944, delegated administrative responsibility in such a way that the activities of the elements participating in the operation could be coordinated. Until the establishment of the Communications Zone the Commanding General, ETOUSA, would be responsible for forwarding supplies. After the Communications Zone was established, its commander

would supply all items to ground forces and common items to the air forces and the Navy.[67]

A tentative draft of the quartermaster annex to this administrative plan was completed on 30 April 1944. This plan defined the responsibilities of the Communications Zone quartermaster and outlined the methods by which quartermaster supply would be accomplished. The period covered extended from D-plus-20-day to D-plus-90-day.[68] Charts showing quartermaster command and technical channels appear in appendix II.

On 13 April 1944 and 17 April 1944 respectively, OVERLORD plans were published for the Advance Section of the Communications Zone (ADSEC) and for the Forward Echelon of the Communications Zone (FECZ). Prior to the establishment of a rear boundary the Army Service Area which included the beaches, would be under the control of the Commanding General of the First Army. After the establishment of a boundary, however, the Communications Zone would be set up, and SOS personnel would revert to the control of ADSEC. The Commanding General of FECZ and an advance party would move to the Continent on D-plus-5-day, to be followed on D-plus-10-day by a reconnaissance, accommodation, and quartering party, and on other stipulated days by troop contingents. By D-plus-30-day FECZ would be established with full personnel. Headquarters, FECZ, was charged with over-all planning from D-day to D-plus-90-day. ADSEC was charged with detailed planning for the development, organization, and operation of the Communications Zone prior to the time that it should become contiguous with FECZ. Then Base Section I of FECZ would assume the responsibility formerly assigned to ADSEC, and Base Section II would prepare to assume command and operational control of the Continental area relinquished by ADSEC. Detailed plans were developed for quartermaster participation in each stage of the operation.[69] Maps of the Communications Zone appear in appendix III.

Such minute planning made possible the successful landing on the Normandy coast and the victories won by Allied armies from Bayeux to Berlin. The operation plan did not spring full-grown from some master mind. It had its beginning at Casablanca in January 1943, when the chiefs of two great nations met in conference. Developed by COSSAC and SHAEF, which received counsel from the best brains in the United States and the United Kingdom, OVERLORD emerged as the invincible plan of Continental invasion.

RANKIN CASE C

Coincidental with the OVERLORD plan for invasion of Normandy, an occupational plan was developed for use if Germany should be weakened in the winter of 1943-44 by military disaster in Russia or the collapse of morale within the Reich or by both. Known as RANKIN Case C, it was issued by COSSAC on 30 October 1943. The object of the plan was to occupy as rapidly as possible areas on the Continent from which the Allied Governments could enforce terms of surrender and from which agencies of the Allied Nations could assist in the relief and rehabilitation of liberated countries. The Supreme Allied Commander would control Norway, Denmark, Holland, Belgium, Luxembourg, France, northwestern and southern Germany, and the Channel Islands. Forces for the occupation of Austria might eventually come under his control, but during the early stages of the operation they would be provided and maintained by Allied Force Headquarters. The spheres of authority were defined as follows:

> United States sphere—southern Germany and France. British sphere—northwestern Germany, Denmark, Holland, Belgium, Luxembourg (the United States reserving the right of way on railroads through Luxembourg).

During the disarmament period, northwestern Germany would be in the British Zone, southern Germany and Austria in the United States Zone, and eastern Germany in the Russian Zone.

The plan called for the landing of United States forces at Le Havre and the landing of British forces at Antwerp.[70] During the first stage Allied armies would establish secure air bases in the low countries and in France. During the second stage they would advance to the western and northwestern frontiers of Germany. Other forces would take northwest German ports and advance to the frontier between Germany and Denmark for the purpose of obtaining bases for future penetration. During the third stage they would establish land and air bases in strategic areas in Germany from which to enforce the terms of surrender.

ETOUSA headquarters issued a directive on 5 November 1943 implementing the RAN-

KIN Case C plan. In this document the responsibility for the United States' part in the operation was delegated to the Commanding General of the First Army Group, who would collaborate with the British Naval Commander-in-Chief of the Plymouth Area and the Commanding General of the Ninth United States Air Force.[71] Representatives of the Services of Supply met on the 8th of November to inaugurate supply plans.[72]

The First United States Army Group (FUSAG) issued its initial planning directive for RANKIN Case C on 9 November 1943. The First Army would be responsible for the first stage of the operation, and the Second Army would be responsible for the second stage.[73] Subsequent directives on 13 November 1943 and 2 January 1944 presented refinements of the plan. On 1 February 1944 FUSAG issued a complete revision of RANKIN Case C, which included an annex summarizing the internal situation at that time in both Germany and France, estimating the military strength of the enemy, and giving aerological data, topography, and history of the countries to be invaded.[74]

Meanwhile plans were being developed for the supply program that the operation would require. On 12 November 1943 SOS, ETOUSA, issued a planning directive. The Commanding General, SOS, was charged with the following responsibilities:

> Preparing a plan for the Communications Zone on the Continent.
>
> Providing the required administrative support to air forces and naval establishments and such other forces and organizations as might be attached to or placed under the control of the United States, including British and French organizations.
>
> Providing to air force units all supplies, except aviation fuel and air force technical equipment and supplies, and transporting all equipment and supplies not transported by air.
>
> Planning the mounting of the operation, except the part affecting units moved by air, in accordance with the requirements of the commanders.[75]

An SOS directive of 25 November 1943 established supply reserves for the three stages of the operation and gave an estimate of the tonnage requirements. Appended to this directive were annexes carrying the detailed plans to the supply services.[76]

A tentative draft of the quartermaster annex had been prepared in the Office of the Chief Quartermaster prior to 22 November 1943.[77] It was not published, however, until 18 January 1944. Quartermaster personnel, according to the plan, were to receive, store, and issue quartermaster supplies only at main depot areas. Retail issue would be made to troops in the immediate vicinity of depots. For all other troops supplies would be shipped to army-operated railheads. It was assumed that Air Corps and SOS units that did not draw from main quartermaster depot areas would be served through the supply systems of the armies. Under this plan the Quartermaster Service accepted complete responsibility for laundry, salvage, repair, sterilization of clothing and equipment, petroleum testing, baking, refrigeration, the sale of clothing and accessories to officers, and the supervision of cemeteries. The plan provided for the handling of all classes of quartermaster supplies and for the rendering of all quartermaster services. It was revised in minor details on 1 February 1944.[78]

The Southern Base Section (SBS) and the Northern Ireland Base Section (NIBS), in accordance with the responsibility delegated to them for mounting operation RANKIN Case C, issued plans on 15 February and 18 February respectively. The mission of the Southern Base Section was to move all task force personnel and task force vehicles from the home stations to the concentration areas and the marshaling areas and to load them aboard ship in such a manner that the task force would embark in a state of maximum efficiency.[79] The mission of the Northern Ireland Base Section was to mount that part of stages I, II and III that involved the movement of troops from Northern Ireland to the Continent.[80]

Both base section plans carried quartermaster annexes. The mission of the Quartermaster Service in the Southern Base Section was to provide quartermaster services and supplies necessary for the embarkation of the task force with its entire equipment. Complete plans had been developed for the storage and distribution of all items of quartermaster supply.[81] The mission of the Quartermaster Service in the Northern Ireland Base Section was "to accept responsibility for all quartermaster activities in connection with the plan to move designated troops from Northern Ireland for a contemplated build-up phase of an oversea movement." The stor-

age and distribution of quartermaster supplies in the concentration area, the emergency staging area, and the vehicle organizational equipment staging area had been planned in minute detail.[82]

RANKIN CASE C (NORWAY)

Within the framework of RANKIN Case C a plan was developed for establishing control in Norway and disarming German forces in Norway upon the unconditional surrender of Germany. This plan was known as RANKIN Case C (Norway). On 10 November 1943 COSSAC sent to the chiefs of services a tentative draft of administrative instructions outlining the general purpose of the plan and directing the services to prepare annexes to the proposed COSSAC plan for operation RANKIN Case C (Norway).[83]

On 27 November 1943 Headquarters, European Theater of Operations, directed that a task force then known as NIGHTLIGHT be organized to carry out operation RANKIN Case C (Norway).[84] On 21 December 1943 the commander of NIGHTLIGHT was instructed to proceed with the detailed planning of the task force in accordance with directives to be issued by the general officer commanding the Scottish Command and the commander (designate) of the Allied Expeditionary Force to Norway. Brigadier General Thomas L. Martin was placed in command of the United States component of NIGHTLIGHT.[85]

A tentative SOS outline was published on 8 January 1944. The mission of SOS in the operation was defined as equipping and moving units of NIGHTLIGHT from stations in the United Kingdom and Northern Ireland to such ports as might be designated by the Commanding General, Scottish Command, for oversea movement at any designated date after 1 January 1944 and to provide maintenance for the force in Norway thereafter. The plan set forth a system of supply, levels of supply, and the amount of supplies to accompany troops and to be provided for maintenance. Special Quartermaster arctic clothing and equipment would be available upon requisition. The Chief Quartermaster would ship these items to depots.[86] On 9 January 1944 the Chief of Operations, ETOUSA, requested the Chief Quartermaster to prepare a quartermaster plan by 17 January 1944.[87]

On 18 March 1944 ETOUSA directed that planning for RANKIN Case C be suspended until further notice but that planning for NIGHTLIGHT be continued. All papers connected with RANKIN Case C, however, should be retained in such a state that planning could be quickly resumed.[88] The SOS plan for the support of NIGHTLIGHT, published on 21 March 1944, carried a quartermaster annex, which imposed upon the Quarmaster Service the responsibility of equipping United States Task Force NIGHTLIGHT with the items of quartermaster equipment and supplies that were normally furnished, exclusive of class III supplies, and the responsibility of providing maintenance from stores in the United Kingdom.[89]

Upon the appointment of Brigadier General A. D. Warnock on 8 May 1944 to succeed Brigadier General Martin as Commanding General of the United States Component of NIGHTLIGHT, the purpose of the plan was reiterated.[90] On 22 July, when Brigadier General Owen Summers replaced Brigadier General Warnock, minor changes in the plan were directed.[91]

A tentative redraft was published on 24 July and submitted to the chiefs of services. It was pointed out that after the surrender of Germany, some 200,000 Germans and Quislings in Norway would have to be controlled. In addition, they would have to be protected from retaliatory measures that loyal Norwegians might attempt. Task Force NIGHTLIGHT would sail from the United Kingdom to occupy strategic Norwegian ports and air fields.[92] As published on 14 August 1944, the Communications Zone plan carried a revision of the earlier quartermaster annex. Subsequent editions of the plan left the responsibility of the Quartermaster Service unchanged but altered details in the execution of the plan. In all editions there were full lists of arctic items of clothing and equipment, which were to be held in readiness for the expedition.

On 11 October 1944 the code name RANKIN Case C (Norway) was replaced by APOSTLE I and APOSTLE II. APOSTLE I was defined as "the operation undertaken for the return to Norway following the unconditional surrender of Germany and the cessation of all organized armed resistance in Europe." APOSTLE II was defined as "the operation undertaken for the return to Norway following the unconditional surrender of all German forces in Norway and the cessation of all organized armed resistance in that country whilst German resistance continues elsewhere." [93] The United Kingdom Base published on 4 December 1944 a mount-

ing plan for APOSTLE I.

The mission of the task force NIGHTLIGHT was to prepare Camp Crookston for the reception of 5,000 troops, to supplement existing facilities wherever necessary, and to provide rations and cooking facilities, accommodation stores, petrol, oil, and lubricants for refueling and lubricating vehicles at the marshaling camp, and motor transportation for the troops.[94] An over-all Communications Zone plan was published on 8 May 1945 with a revised quartermaster annex, which gave in detail the part the Quartermaster Service would play in the operation.[95]

RANKIN CASE B AND RANKIN CASE B (NORWAY)

During 1944 still another plan was outlined, known as RANKIN Case B. Its objective was the occupation of "certain areas on the Continent in the event of a German withdrawal." The Allied forces would establish army and naval bases, harass German forces during withdrawal, and facilitate return to normal conditions. Within the framework of the main operation, RANKIN Case B (Norway) was planned with a twofold objective: namely, to secure both naval bases and sites for radar stations and to establish control in those key areas of Norway that had been evacuated by the Germans. RANKIN Case B (Norway) would be put into effect if the Germans withdrew from Norway during the early stages of OVERLORD. The plan was prepared by the Scottish Joint Command and published on 18 July 1944.[96]

On 1 September 1944 the Communications Zone, ETOUSA, published plans for the support of United States Task Force Z and United States Task Force LIGAMENT, which would carry out the operation. The Communications Zone would equip the units of Task Force Z and move them from ports in the United Kingdom and would equip the units of Task Force LIGAMENT and move them from stations in the United Kingdom to the Glasgow staging area. It would provide both forces with maintenance supplies at designated ports in the United Kingdom and in Norway.[97] Quartermaster annexes were included in the plans for both task forces.[98] On 11 October 1944 the code name RANKIN Case B (Norway) was replaced by ALADDIN, which was described as "the Operation undertaken for the return to Norway in the event of a German withdrawal from all or part of that country, prior to a general cessation of hostilities in Europe."[99]

A plan for mounting United States Task Force LIGAMENT was published on 4 December 1944 by the Western District, United Kingdom Base, Communications Zone, ETOUSA. The mounting plan arranged for the preparation of a portion of Camp Crookston for occupancy by the task force, which was to have a strength of about 1,048 men, and the provision of rations and cooking facilities, accommodation stores, motor transportation, petrol, oil, and lubricants for refueling and lubricating vehicles at the marshaling camp, and other necessities incidental to mounting the force.[100]

PLANNING DIRECTIVES

Between February 1944 and May 1945 Headquarters, ETOUSA, published six series of planning directives. All but the first of these dealt with post-OVERLORD operations on the Continent.

Series D and G

Series D, which was published on 1 February 1944, dealt with the reduction of ETO and SOS establishments in the United Kingdom (see below). Series G, published on 27 April 1944, directed the chiefs of services to submit by 15 May 1944 curves showing the anticipated closing of storage space at each general and service depot (see ch. 5). These directives resulted in the development of the RHUMBA plan (see below).

Series A

Series A, the first directive of which was published on 7 February 1944, dealt with the planning of storage facilities on the Continent from D-day to D-plus-90-day. Until the Communications Zone could be established, the Advance Section attached to FUSAG would take over dumps, ports, roads, and railheads. This section would be responsible for detailed planning from D-day to D-plus-30-day. The plan was based upon the following assumptions:

That dumps at the beaches would be turned over to ADSEC on D-plus-10-day and that after D-plus-30-day areas near Cherbourg would be used to store excess supplies.

That dumps around Granville would be turned over to ADSEC on D-plus-30-day.

That dumps near Rennes and Vitre would be turned over to the Commanding General of the Communications Zone on D-plus-40-day, this storage area to be permanent and the overflow that could not be stored at Rennes to be stored in Laval after D-plus-70-day.

That bakeries, prisoner of war inclosures, and salvage depots would begin to operate about D-plus-30-day.[101]

Series H

Series H, the first directive of which was published on 15 May 1944, pertained to Continental operations after D-plus-90-day. The directive applied in detail to the period from D-plus-90-day to D-plus-120-day but contained general information up to D-plus-270-day. The purpose was to estimate the situation in order that supply requirements to support operations might be projected and procurement initiated.[102] On 24 May 1944 the chiefs of services were directed to formulate the supply program for the period D-plus-90-day to D-plus-360-day. After D-plus-120-day the rate and extent of tactical operations would be determined largely by the administrative, supply, and evacuation support that the communications Zone would be able to give the armed forces. The Chief Quartermaster, the Chief Engineer, and the Chief of Transportation would submit separate estimates for petrol, oil, and lubricants.[103]

On 8 June 1944 procedures were published for the preparation of projects for operational supply (PROCO projects) from D-plus-91-day to D-plus-360-day. The projects that were to be submitted by the chiefs of supply services would be forwarded to the Acting Chief of Staff, G-4, ETOUSA, for the approval of the Commanding General.[104] A directive issued on 14 November 1944 dealt with the preparation of PROCO projects from 14 November 1944 to 1 May 1945.[105] A directive of 8 February 1945 initiated planning for the period that would follow the crossing of the Rhine. The PROCO projects that the chiefs of services were directed to prepare would include supply requirements, depot construction, and estimates of the service troops and tonnage necessary for the support of the operation. For planning purposes it was assumed that the Rhine would be crossed during the first 2 weeks of March 1945.[106] Directives for carrying out five PROCO projects were published supsequently (see ch. 4).

Series I

Series I, the first directive of which was published on 20 June 1944, dealt with Continental operations after hostilities. It included administrative support of United States forces in France and Germany, supply during the period of occupation, supply for civilian needs, mounting the return of United States troops to the United States or their redeployment to other theaters, plans for receiving surrendered German materiel, plans for establishing receiving centers for released United States prisoners of war, plans for establishing centers for processing displaced persons, plans for establishing receiving centers for German prisoners of war returning from the United States, and plans for establishing military government in the United States area of occupation.[107]

A directive in the I series, published on 7 September 1944, dealt with organization and supply during the period beginning with the German surrender and extending until all armed resistance by the German people should have ended. ADSEC would continue to provide administrative support to the United States armies. As troops were deployed to southern Germany, ADSEC would enter the area of operation and take over responsibilities. PROCO projects for the establishment of storage areas and depots were to be submitted by the services.[108]

Another directive in this series, published on 1 December 1944, called for comprehensive plans to cover the post-hostilities period;[109] and still another directive, published on 14 March 1945, dealt with plans for the redeployment of troops to the Pacific Theater.[110]

A map of the proposed Communications Zone boundaries and the United States area of occupation, showing Continental base sections and the locations of the Advance Section (ADSEC) and the Continental Advance Section (CONAD), appears in appendix IV.

Series K

Series K dealt with the ECLIPSE plan. This series of four plans was published between 5 March and 10 May 1945. On 10 November 1944 SHAEF had published the Appreciation and Outline Plan, Operation ECLIPSE. The mission of ECLIPSE was to effect, within the Supreme Commander's sphere of responsibility, the primary disarmament and control of Germany.[111] On 25 November 1944 SHAEF set forth the con-

tents of the disarmament and control documents to be issued by the three powers [112] and on 2 March 1945 outlined the scope and probable requirements for supplies, services, and facilities in Germany during the period of the Supreme Commander's responsibility.[113]

Plan A

Plan A, the first of the four plans of the K series, was published on 5 March 1945, and dealt with three stages of the Continental operation. Stage 1 was subdivided into the period of current operations, defined as the spring offensive then under way, and the pre-ECLIPSE period, to begin with the crossing of the Rhine. Stage 2, known as operation ECLIPSE, would begin with the surrender of Germany and end with the assumption of control by the Tripartite military government or by United States and British commanders and the assumption of control in liberated countries by the respective governments of those countries or by United States or British commanders. Stage 3 was defined as the period to follow the assumption of control by the Allied Control Council. The directive did not ask that a plan for stage 3 be submitted.

During the pre-ECLIPSE period ADSEC would provide administrative support to the Twelfth Army Group; CONAD would provide administrative support to the Sixth Army Group; and an Intermediate Section would relieve ADSEC and CONAD of the Communications Zone activities in France. The ultimate eastern boundary of the Intermediate Section would be the western frontier of Germany.

During the first part of the ECLIPSE period ADSEC's mission would remain unchanged. During the second part of the period, however, ADSEC would enter the eastern section of the United States area of occupation and would become the Eastern Communications Zone Section. During the first part of the ECLIPSE period CONAD would continue to provide administrative support for the Sixth Army Group. During the second part of the period, however, it would become the Western Communications Zone Section. The mission of the Intermediate Section would remain unchanged. The Seine Section might be disbanded when its area was placed under the Commanding General of the Normandy Base Section. The Channel, Normandy, and Delta Base Sections would continue their former missions.[114]

Plan C

Plan C, published on 28 March 1945, established an area, which included Bremen and Bremerhaven, as an enclave under United States military control. Within the British zone of occupation in Germany, the enclave was to serve as a port and base depot area for support of United States forces in the United States zone in southern Germany. Plan C dealt with the administrative support and maintenance of United States forces in the enclave.[115]

Plan D

Plan D, published on 14 April 1945, outlined the responsibilities of the Communications Zone for the support of United States forces in the Berlin District.[116]

Plan B

Plan B, published on 10 May 1945, outlined the development of the Communications Zone after VE-day and established Communications Zone policies. The ECLIPSE period would end about the first of July with the termination of the combined command. Then a theater headquarters would be established in Germany. The Communications Zone would be responsible for administrative supplies in liberated countries and in the United Kingdom, for service functions in connection with redeployment, and for administrative support of United States forces in the United Kingdom and in liberated and occupied countries. By VE-plus-120-day the United States Army would be relieved of the responsibilities connected with supplying French forces. Redeployment would be completed by VE-plus-450-day. At that time the United States army of occupation would number about 400,000 troops.[117]

Series L

Planning Directive, Series L, No. 1 (tentative), published on 1 August 1945, superseded all other planning directives.[118] The United States Forces, European Theater, (USFET), had been established on 1 July 1945 with headquarters in Frankfurt, Germany.[119] The United States Forces in Austria (USFA) had been established on 5 July 1945 by the Commanding General of the Twelfth Army Group and the Commanding General of the Fifteenth Army Group. At that time the boundaries of the European Theater were extended to include Austria. The Commanding Gen-

eral, USFET, was responsible for logistical support of the United States forces in Austria. On military government and political matters the Commanding General, USFA, reported directly to the Joint Chiefs of Staff.[120] Responsibility for the logistical support of USFA was delegated to the Eastern Military District (Third Army). On 1 August 1945 the Communications Zone was designated Theater Service Forces, European Theater, (TSFET).[121] A chart showing the relationship of TSFET to other headquarters in the European Theater appears in appendix V. The purpose of series L was to provide a basis for planning and implementing TSFET until the completion of its activities in the United Kingdom and liberated countries.

During the next 10 months TSFET would maintain installations and functions necessary to support USFET and to implement redeployment. At the same time it would work toward closing United States Army installations in the United Kingdom and liberated countries. Target dates were given for the reduction of areas and the closing out of installations. Pending the final publication of Planning Directive, Series L, No. 1, the tentative directive was to be used as a guide for future activities of all TSFET agencies.[122] A map showing the TSFET sections and national zones of occupation in Germany and Austria on 1 August 1945 appears in appendix VI.

On 21 August 1945 an amendment to Planning Directive, Series L, No. 1 (tentative), outlined an interim plan for post VJ-day conditions. This directive set forth VJ-day policies under which all TSFET agencies would operate, indicated immediate action to be taken, and listed certain functions as a basis for study and planning.[123]

Planning Directive, Series L, No. 2, published 18 September 1945, dealt with the consolidation of the European Theater and the Mediterranean Theater (MTO). For planning purposes it was assumed that the MTO would be consolidated under the command of the Commanding General, USFET, on about 1 December 1945, that redeployment from Italy of all but the residual United States occupational troops would be complete by 1 February 1946, and that the area would be closed out by 1 April 1946 with the exception of those installations necessary to support the final occupying forces. The supply services were directed to submit detailed plans for the consolidation of the two theaters by 10 October 1945.[124]

REVERSE BOLERO, OR RHUMBA

In March 1944, while Germany was being bombed for the first time by United States airmen and the finishing touches were being given to OVERLORD plans, a reverse BOLERO plan was being developed for closing the installations, accommodations, and facilities that had been built up in the United Kingdom since the summer of 1942. RHUMBA was the code name given to the operation. It was on 1 February 1944 that Planning Directive, Series D, set up a reverse BOLERO outline plan and directed the services to prepare annexes and submit them by 10 February.[125]

The dates used in the outline plan were based on 1 July 1944, known as Y-day, an indefinite number of days after D-day. The troops that would be in the United Kingdom between 1 July and 1 November were estimated as follows:

1 July—1,040,000
1 August—1,020,000
1 September—1,000,000
1 October—980,000
1 November—960,000

As of 1 December the forces on the Continent would receive supplies directly from the United States. Shipments from the United Kingdom would be continued, however, for the purpose of reducing stocks and meeting emergencies caused by delay in the arrival of convoys from the United States. Items of local procurement would also be shipped from the United Kingdom. For several months after 1 December the shipments from the United Kingdom would amount to about 10,000 tons a day. The SOS would be responsible for furnishing certain supplies to the Eighth Air Force. Stocks would ultimately be concentrated in a few large depots conveniently near ports. Tentative plans were outlined for the consolidation of base sections.[126]

The quartermaster plan, which was developed in compliance with the ETO planning directive, was published on 28 March 1944. The mission of the Quartermaster Service in RHUMBA was defined as follows:

> To receive, store, and issue quartermaster supplies to personnel in the United Kingdom.
>
> To furnish services to troops remaining in the United Kingdom.

To receive, store, and forward in bulk to the Continent supplies not shipped directly from United States.

To receive, repair, or dispose of surplus salvage that was received from the Continent or from alerted units, abandoned in marshaling areas, or turned in by troops remaining in United Kingdom.

To fulfill responsibilities assumed by the Quartermaster Service in annex 10 of the SOS mounting plan of 20 March 1944.

To procure locally supplies for troops in the United Kingdom and on the Continent.

To store and process to the Transportation Corps for shipment to the United States surplus personal effects of enlisted men in alerted units and to receive and store footlockers of officers embarking for the Continent.

To equip units arriving in the theater from Y-day to Y-plus-90-day with quartermaster items of clothing and equipment.

To procure from United Kingdom resources, but not to handle, items required for the conduct of civil affairs.

In the quartermaster plan the United States civilian and military strength in the United Kingdom during the period from May through September was estimated as follows:

31 May	1,660,000
30 June	1,071,000
31 July	892,000
31 August	811,000
30 September	767,000

United States troops on the Continent were estimated as follows:

30 June	716,640
31 July	1,040,690
31 August	1,242,490
30 September	1,425,000

Included were tables showing the expected over-all status of quartermaster units during the 4 months following the publication of the plan, the levels of supply for quartermaster items, the stockage of supplies in the United Kingdom, storage requirements, dates of depot closings, and salvage expectancy.[127]

The RHUMBA plan for the Northern Ireland Base Section was published on 27 March 1944. It set down plans for the evacuation of Northern Ireland by United States forces, for preparing the section to become a district of the Western Base Section on 15 June 1944, and for furnishing personnel to a section of the Communications Zone. A quartermaster annex, which was included in the plan, listed the installations and facilities to be closed and the personnel to be released, as well as the installations and facilities that would remain in operation and the personnel required to operate them.[128]

The Western Base Section Reverse BOLERO Plan was published on 28 March 1944. This section would absorb the Eastern Base Section on 1 May 1944 and the Northern Ireland Base Section on 15 June 1944. The United Kingdom Base would be set up on 31 July 1944 and, like the base sections it supplanted, would be divided into districts.[129]

The Western Base Section plan carried a quartermaster annex. The mission of the Quartermaster Service was the acquisition and operation of the Eastern Base Section and the Northern Ireland Base Section as districts of the Western Base Section; the reduction of activities by releasing personnel and by inactivating installations; and the preparation of Tables of Organization personnel requirements. The plan was based upon the assumption that the BOLERO troop basis would be achieved and that OVERLORD would be executed as planned.

The quartermaster section of the Eastern Base Section would be reduced from 27 officers and 40 enlisted persons to 12 officers and 30 enlisted persons. The quartermaster section of the Northern Ireland Base Section would be maintained in full strength until the 1st of August. After that day, however, only the depot at Belfast and one or two distributing points would be operated. Because the closing down of the Western Base Section headquarters was the task of the Commanding General, United Kingdom Base, the quartermaster plan set up no curtailment program.[130]

The Eastern Base Section Reverse BOLERO Plan, also published on 28 March, scheduled the progressive consolidation of districts VI and X into district VII, district IX and district VII into district VIII, and the preparation of district VIII to come under the command of the Western Base Section of 1 May 1944. The plan set up procedures for releasing accommodations to the British War Office and property to the British Air Ministry and for closing installations. Because of the number of troops to be supplied, however, quartermaster and general depots would not be closed before the date set for

the completion of RHUMBA. The plan contained a quartermaster annex.[131]

The Southern Base Section Reverse BOLERO Plan was not published until 3 April 1944. Between 1 June and 31 July the Southern Base Section would maintain personnel at full strength. It was not contemplated that the consolidation of district headquarters in the Southern Base Section could be effected before the end of September. It was thought inadvisable to release accommodations before Y-plus-40-day. Accordingly, the plan set up procedures for liquidating the section after the 1st of October.[132]

The quartermaster plan, which was carried as an annex, provided for the consolidation of two depots by 1 September 1944 and the moving of another depot before D-day. No other depots, except those handling petrol, oil, and lubricants, would be closed before D-plus-90-day, and no depot personnel would be available for release. The movement of petrol, oil, and lubricants was not scheduled to begin until D-plus-20-day. The quartermaster salvage repair companies would continue to operate. Plans for the consumption and final disposition of supplies and equipment could not be submitted for this base section alone.[133]

Meanwhile the original Reverse BOLERO Plan had been subjected to a number of changes. As amended on 27 October 1944, the plan set forth as its mission the providing of administrative support to United States forces remaining in the United Kingdom and such administrative support to United States forces on the Continent as might be required. By 1 September the base sections in Great Britain had been dissolved and the United Kingdom Base set up with the following districts:

Southern District—comprising the area formerly included in the Southern Base Section.

Western District—comprising the area formerly included in the Western Base Section with the exception of District VIII.

Eastern District—comprising the area formerly included in District VIII of the Western Base Section.

Central District—comprising the area formerly included in the Central Base Section.

A map showing the United Kingdom base sections before the establishment of the United Kingdom Base appears in appendix VII.

With the approval of the Commanding General of the United Kingdom Base, district commanders might subdivide districts. The United Kingdom Base staff was composed of the staff of the Southern Base Section and individuals selected by the chiefs of general and special staff sections of the Communications Zone.[134]

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CHAPTER 2
ORGANIZATION

The Quartermaster Corps in the Allied Expeditionary Force of 1917 was charged with transporting all army personnel; providing all quartermaster transportation; repairing all motors except artillery vehicles; supplying the Army with clothing and equipment, subsistence, fuel, and forage; providing lights, water and equipment to camp sites and offices; operating laundries and baths; collecting salvage; taking charge of burials and maintaining cemeteries; providing coal storage; operating refrigeration plants and quartermaster workshops and depots; handling pay rolls and claims; and making general disbursements.[1] A quartermaster section composed of 9 divisions and staffed by 160 officers was developed by Brigadier General H. L. Rogers to accomplish this mission. This, then, was the Office of the Chief Quartermaster in World War I.[2]

IN THE FIRST HEADQUARTERS

During World War II the office that performed the quartermaster supply tasks of the European Theater of Operations was set up before the first large contingent of United States troops reached the United Kingdom. In January 1942 the two officers who had composed the Quartermaster Office, SPOBS, became the nucleus of the Quartermaster Section, USAFBI, (see ch. 1). Frazier E. MacIntosh, a former Regular Army officer living in England, offered his services in any capacity. He was commissioned a captain in February 1942, the second man to be commissioned in the British Isles, and was placed on duty with Colonel Middleswart. By the end of April 1942 another officer and a few civilians, borrowed from the Office of the Military Attache, were added to the Quartermaster Section, USAFBI, at 20 Grosvenor Square. The section was brought to full strength when a detachment of 5 officers and 12 enlisted men arrived in May.[3]

While the Quartermaster Section of USAFBI in London was occupied with the care and maintenance of troops already in the United Kingdom, the War Department was busy developing organizations and obtaining personnel for the full BOLERO program. On 16 May 1942, 2 days after the War Department had directed that USAFBI be organized into an Army Air Forces command, an Army Ground Forces command, and a Services of Supply command, Colonel Charles O. Thrasher, who had been designated Acting Chief Quartermaster, SOS, USAFBI, requested 17 officers for OCQM.[4] Brigadier General Robert M. Littlejohn was named Chief Quartermaster 4 days later. He submitted at once a revised request for 37 officers and 129 enlisted men by 1 January 1943,[5] and the Secretary of War approved the allotment on 23 May 1942.[6] On 28 May 1942, 4 days after the services of Supply, USAFBI, had been activated under the command of Major General John C. H. Lee, the first increment of the headquarters sailed from New York. Plans had been made for 14 officers to accompany Brigadier General Littlejohn, but prior to departure one of these, Colonel James A. Longino, was designated officer in charge of the rear echelon, OCQM, and was retained in Washington.[7] On 4 June 1942, almost 2 years to the day before the invasion of the Continent, Brigadier General Littlejohn established OCQM ("atop a cracker box," he said) in 1 Great Cumberland Place, London.[8]

IN THE OFFICE OF THE CHIEF QUARTERMASTER

The Build-Up Period

"The picture of the problem would become apparent," Brigadier General Littlejohn wrote a few days after his arrival in London, "if one were given the task of organizing, from a Quartermaster angle, half of the Continental United States and at the same time creating a central office paralleling to a large extent the Office of the Quartermaster General.'"[9] For more than a week the Chief Quartermaster and his deputy shared a single desk. There were no typewriters and no clerks. Although a few enlisted men were picked up from a depot supply company near London, it was almost a month before there was even a semblance of the proper organization.

The United Kingdom Period

During the days immediately following the arrival of the Chief Quartermaster two distinct quartermaster headquarters were oper-

FIGURE 1.—1 Great Cumberland Place, First Home of the OCQM

ating in London—the Office of the Chief Quartermaster, SOS, USAFBI, at Great Cumberland Place and the Office of the Quartermaster, USAFBI, at Grosvenor Square. Because quartermaster personnel was not yet available to man SOS establishments, Brigadier General Littlejohn recommended that the two offices operate as a single unit. The Commanding General approved this recommendation on 8 June 1942, the day that USAFBI was dissolved and the European Theater of Operations established. Colonel Middleswart was appointed Deputy Chief Quartermaster, his office remaining with Theater Headquarters on Grosvenor Square.[10] His staff was composed of the personnel who had formed the Quartermaster Section, USAFBI.[11]

The Chief Quartermaster informed The Quartermaster General on 12 June 1942 that 400 officers would be required by the end of the year to operate the quartermaster installations being set up in the United Kingdom.[12] Later in the month the Theater Commander raised the figure to 650 officers.[13] On 23 June 1942, the day that Lieutenant General Dwight D. Eisenhower assumed command of the European Theater of Operations, the Chief Quartermaster said that 114 of the 650 officers requested should be authorized for the Office of the Chief Quartermaster.[14] These were to be added to the 37 previously authorized, making a total of 151 officers for his headquarters.

Activation of SOS, ETOUSA, was one of Lieutenant General Eisenhower's first official acts. Major General Lee in his initial directive, published on 23 June 1942, described the mission of the SOS as "the formulation of detailed plans for the operation of supply, transportation, and administrative services which serve ETOUSA as a whole and which are not part of other subordinate forces of the Theater."[15] Within this broad structure the Office of the Chief Quartermaster was charged with responsibility nearly identical with that of the Office of The Quartermaster General in Washington. This covered the supply of all items common to two or more services, except special or technical items; the operation of sales stores; and certain duties pertaining to motor transportation.[16] To carry out his mission the Chief Quartermaster organized his office along the lines of the Office of The Quartermaster General. He created 7 divisions, broken down into 18 branches, which would direct every quartermaster activity in the theater. The divisions were the Executive Division, the Planning and Control Division, the Accounts Division, the Supply Division, the Salvage and Laundry Division, the Subsistence Division, and the Transportation Division.[17]

The General Depot Service had been established on 9 March 1942 as a technical service coordinate with the other special staff sections, such as the Ordnance Service, the Medical Service, and the Quartermaster Service.[18] On 11 July 1942 it was discontinued. Its functions were transferred to the Office of The Quartermaster General.[19] Thereafter, the Quartermaster Service in the European Theater became responsible, under the direction of the Commanding General, SOS, for the operation of all quartermaster and general depots. A circular published on 19 August 1942, outlined the duties of the Chief Quartermaster in the operation of depots.[20] The Chief Quartermaster had said earlier that he had inherited a depot scheme set up by the British as a protection against air raids. This system consisted of small depots, usually five in number, grouped around a large command depot.[21] He had needed more than 600 officers to operate quartermaster depots alone. Now, however, because the added responsibility for general depots demanded even closer liaison with the British, additional personnel would be required. Consequently, the Chief Quartermaster estimated that he would need 930 officers to carry out his mission in the European Theater. In this number were 100 officers for OCQM, 20 officers for each divisional area, 12 officers for each general depot, and 5 officers for each quartermaster depot.[22] The Commanding General, SOS, ETOUSA, approved the 100 officers for OCQM but limited the total number for the theater to 875. At the same time, however, he approved 15 warrant officers and 200 enlisted men for OCQM and an additional 15 warrant officers and 1,937 enlisted men for depots and installations.[23]

Headquarters, SOS, ETOUSA, moved to Cheltenham, Gloucestershire, about 90 miles from London, between 9 and 13 July 1942, and OCQM moved with the higher echelon. By September 1942 the functions and responsibilities of the Quartermaster Service in the European Theater had been definitely established. The Chief Quartermaster had a dual capacity: He was a member of the staff of the Theater Commander and a member of the special staff of the Commanding General, Services of Supply. Under this plan the Chief Quartermaster maintained his office at SOS Headquarters in Cheltenham and was repre-

sented on the staff of the Theater Commander by the Deputy Chief Quartermaster, who maintained an office at Theater Headquarters in London.[24]

By August 1942, at the time of the Dieppe raid, OCQM had expanded to 14 divisions subdivided into 59 branches (see app. VIII). Against the authorized allotment of 315 officers, warrant officers, and enlisted men, the strength of OCQM consisted of 65 officers, 3 warrant officers, and 85 enlisted men.[25] The first large shipment of enlisted casuals arrived from the United States in October, increasing the noncommissioned strength of OCQM to 197 men.[26] Changes in the organization of the office occurred frequently throughout the fall of 1942.

In a speech delivered on 10 January 1943 the Chief Quartermaster described the duties and responsibilities of OCQM divisions. The Executive Division, he said, was charged with routing and handling all correspondence and administering the office. The Operations Division, though its name was somewhat misleading, was similar to a general staff. The Control Branch of the Operations Division checked property records in depots, developed methods of accounting, and gave general supervision to all other divisions within OCQM. The Depot Operations Branch performed the duties formerly assigned to the General Depot Service. The Plans and Training Branch was responsible for all planning and maintained liaison with the Deputy Chief Quartermaster in London. The Service Installations Division was responsible for laundries, salvage, repair, dry cleaning, the gardening service, graves registration, and effects. The Supply Division was responsible for the requisitioning and maintenance of all clothing and individual and organizational equipment. The Subsistence Division was responsible for food and rations. The Petroleum and Vehicles Operation Division was responsible for the procurement, storage, and issue of gasoline and lubricants. The Procurement Division, which had to be near markets and financial centers, was located in London. It was responsible for the procurement of all quartermaster items from the British.[27]

OCQM continued to operate under this organizational structure through the spring and summer of 1943. In February 1943, however, Lieutenant General Frank M. Andrews, who had replaced Lieutenant General Eisenhower as Commanding General, ETO, had said that planning for a Continental invasion must no longer be a staff school problem but an actuality worked out by all commands as quickly as possible. For SOS, ETOUSA, these plans took the form of basic planning directives (see ch. 1). Because the first plan dealt with the development of troop strength for the support of armies, the Personnel Branch of the Executive Division was constituted a division. It was made responsible for the determination of requirements for all quartermaster troops and units, the evolution of a quartermaster force to support combat troops, the acquisition of troops for the continued build-up of supplies in the United Kingdom, and the reception, location, and orientation of all quartermaster personnel in the British Isles. Similarly, because of the general speed-up in planning, the Plans and Training Branch of the Operations Division was expanded and elevated to division status.[28] In June the Graves Registration and the Effects Branches of the Service Installations Division were combined to form the Graves Registration Division, and the name of the Service Installations Division was changed to the Salvage and Laundry Division.[29]

The surrender of the German forces in Tunisia on 12 May 1943 marked the end of the North African campaign. Consequently, the fourth edition of the BOLERO Key Plan was published in July, accelerating the build-up in the United Kingdom. The Combined Chiefs of Staff issued the first OVERLORD plan 3 days later. In line with this accent on planning, the OCQM was split into two echelons. The operations echelon, consisting of those divisions that dealt with field operations, remained at Cheltenham. The second echelon, consisting of the Plans and Training Division, moved back to London to be closer to Theater Headquarters, the British War Office, and the Chiefs of Staff, Supreme Allied Command, who were then planning the OVERLORD operation. The Office of the Deputy Chief Quartermaster was dissolved, and its personnel were added to the Plans and Training Division. The quartermaster representative with the Theater Commander became Chief of the Plans and Training Division and Deputy Chief Quartermaster for Planning. His position was paralleled at Cheltenham by that of the Deputy Chief Quartermaster for Operations.[30] Although two headquarters, about 90 miles apart, created some handicaps, the rotation of personnel that it made possible enabled officers to acquire experience in all quartermaster staff activities. OCQM London headquarters moved on 30 August 1943 from 47 to 41-43 Grosvenor Square, opposite Theater Headquarters.[31]

FIGURE 2.—Block E, Benhall Farms, Cheltenham Home of OCQM

FIGURE 3.—41-43 Grosvenor Square, London Home of OCQM

On 26 November 1943 Major General Lee directed a 10-percent reduction in officer and enlisted personnel in SOS headquarters at both London and Cheltenham.[32] He had approved earlier in the year a total of 140 officers and 250 enlisted men for OCQM. At the time that the reduction was directed, OCQM was composed of the following personnel:

Grade	London	Cheltenham	Total
General Officer	1	-	1
Colonel	2	3	5
Lieutenant Colonel	7	9	16
Major	11	10	21
Captain	29	27	56
First Lieutenant	10	20	30
Second Lieutenant	12	15	27
Total	72	84	156
Master Sergeant	3	5	8
Technical Sergeant	6	12	18
Staff Sergeant	6	24	30
Sergeant	10	33	43
Corporal	38	80	118
Private, First class	16	35	51
Private	7	131	138
Total	86	320	406[33]

On 2 December Major General Lee restated his approval of 140 officers but said that the number of enlisted men would have to be reduced to 225 by the end of the year.[34] On 18 January 1944, 2 days after General Eisenhower established Supreme Headquarters, OCQM was composed of 129 officers, 12 warrant officers, and 221 enlisted men. The 124 British civilians who were employed brought the total strength of the office to 486 persons.[35] On D-day, when SOS, ETOUSA, was designated the Communications Zone (see ch. 1), OCQM was composed of 12 divisions, the duties and functions of which appear as appendix IX. When the Communications Zone moved to the Continent on 15 August 1944, OCQM was set up at Valognes, about 20 miles south of Cherbourg.[36] It remained there until 19 September 1944, 3 weeks after the liberation of Paris, when it was established in the Hotel Astoria on the Avenue des Champs Elysees.[37]

The Continental Period

Organization of OCQM had undergone only slight revision when it began operations in Paris. The Plans and Training Division had become the Military Planning Division. The training duties it had supervised, including the operation of all quartermaster schools, had been transferred to the newly activated Personnel and Training Division. A Field Service Division, which had assumed practically all the control functions assigned earlier to the Operations Division, had been put on a level of responsibility equal to that of the Deputy Chief Quartermaster. The Research and Development Division had been created to test the new items of equipment sent from the United States; to obtain from soldiers comments, reactions, and recommendations concerning quartermaster supplies; to develop new items; and to collect, examine, and determine the value of captured enemy equipment.[38] A detailed breakdown of the new organization appears in appendix X.

In the spring of 1945, when preparations for crossing the Rhine were under way, the Commanding General of the Communications Zone asked each service to submit a summary of its activities. The Chief Quartermaster replied that the mission of the Quartermaster Service was to feed, clothe, and bathe the United States armies in Europe; to replace, maintain, repair, salvage, and reclaim items of quartermaster equipment; to provide petroleum and lubricants for movement; to identify the dead and maintain burial records; to operate cemeteries; to process baggage and personal effects; to determine requirements; to requisition, store, distribute, and issue quartermaster supplies; to conduct research upon enemy equipment; to develop new items of quartermaster supply; and to procure locally as many commodities as possible.[39] To carry out this mission the Chief Quartermaster had developed an office that by this time was composed of 158 officers, 16 warrant officers, 553 enlisted men, and 82 British stenographers, who had accompanied OCQM from London.[40]

When the Southern Line of Communications was absorbed by the European Theater of Operations in February 1945, Major General Littlejohn became responsible for the support of the American and Allied forces in Southern France.[41] Whereupon he reorganized OCQM, giving the maximum responsibility for operations to his two deputies. The Deputy for Operations was assigned technical control of the Installations Division, Petroleum and Fuels Division, Procurement Division, Storage and Distribution Division, Subsistence Division, and Supply Division; and the Deputy for Administration was assigned technical control of the Accounts Division, Executive Division, Graves Registration and Effects Division, Personnel and Training Division, and Research and Development Division. The Control Division and Mili-

tary Planning Division, because their activities cut across the entire Quartermaster Service, were placed directly under the Chief Quartermaster.[42]

During March and April 1945 impetus was given to planning for the army of occupation. The first quartermaster organization for the occupational forces was proposed on 28 April 1945. In general, headquarters of this organization would carry out on a limited scale for the army of occupation the functions that OCQM had undertaken for the army of liberation. The main differences were that the problems of redeployment would be handled in the Communications Zone office and the problems of continued support to the ETO would be diverted to the occupational office. The strength needed by the new office was estimated as 135 officers, 9 warrant officers, and 350 enlisted men.[43] When the Production Control Agency, ETO, was established on 29 April 1945, Brigadier General John B. Franks set up the quartermaster section of the agency in Frankfurt, Germany (see ch. 3). He stated that the minimum personnel requirement for the Quartermaster Production Control Division was 762 officers and enlisted men, who were to be included in the bulk allotment of grades and ratings for the Office of the Quartermaster, Occupational Forces. The requirement was broken down as follows:

Officers	
Colonel	15
Lieutenant Colonel	40
Major	70
Captain	100
First Lieutenant	35
Second Lieutenant	--
Total	260
Warrant Officers	
Senior Grade	1
Junior Grade	1
Total	2
Enlisted Men	
Master Sergeant	40
Technical Sergeant	80
Staff Sergeant	120
Sergeant	120
Corporal	120
Private, First Class	20
Private	--
Total	500
Grand Total	762[44]

A Table of Organization for this office had been prepared on 18 June 1945 and called for a total strength of 930: 300 officers, 5 warrant officers, and 625 enlisted persons. The Office of the Quartermaster, Occupational Forces, Germany, was established 2 days later under the command of Brigadier General Franks.[45] An organization chart of this office appears as appendix XI.

Shortly thereafter vast changes began to take place within OCQM itself. On 1 July 1945 SHAEF and ETOUSA were dissolved, and a command known as United States Forces, European Theater, (USFET), was established under General Eisenhower.[46] During the same month the American Graves Registration Service was established under the technical control of the Chief Quartermaster (see vol. VII). Once again, as in the months before D-day when the OCQM parented the quartermaster sections of ADSEC and FECZ, the divisions of the OCQM were stripped to man the new organizations. On 1 August 1945 the Communications Zone was designated the Theater Service Forces, European Theater, (TSFET).[47]

The relationship that existed in Great Britain between the Commanding General, ETOUSA, and the Commanding General, SOS, ETOUSA, was recreated on the Continent. Headquarters, USFET, had been established in Frankfurt.[48] When TSFET was created, OCQM became the Office of the Theater Chief Quartermaster (OTCQM) and remained with TSFET headquarters in Paris. The Office of the Quartermaster, Occupational Forces, became the OTCQM (Forward) under Brigadier General Franks, Theater Deputy Chief Quartermaster, who also acted as quartermaster representative, USFET. An organization chart of the period appears as appendix XII. By mid-November all OTCQM was located in Frankfurt.[49]

After 31 August 1945 Major General Littlejohn held the office of Director, American Graves Registration Service, as well as that of Theater Chief Quartermaster.[50] Headquarters for both organizations were in Versailles. On 15 November 1945 he was relieved as Theater Chief Quartermaster and named Commanding General of the American Graves Registration Command.[51]

IN RELATION TO HIGHER HEADQUARTERS

When SOS, ETOUSA, was organized on 23 June 1942, the Quartermaster Service was set

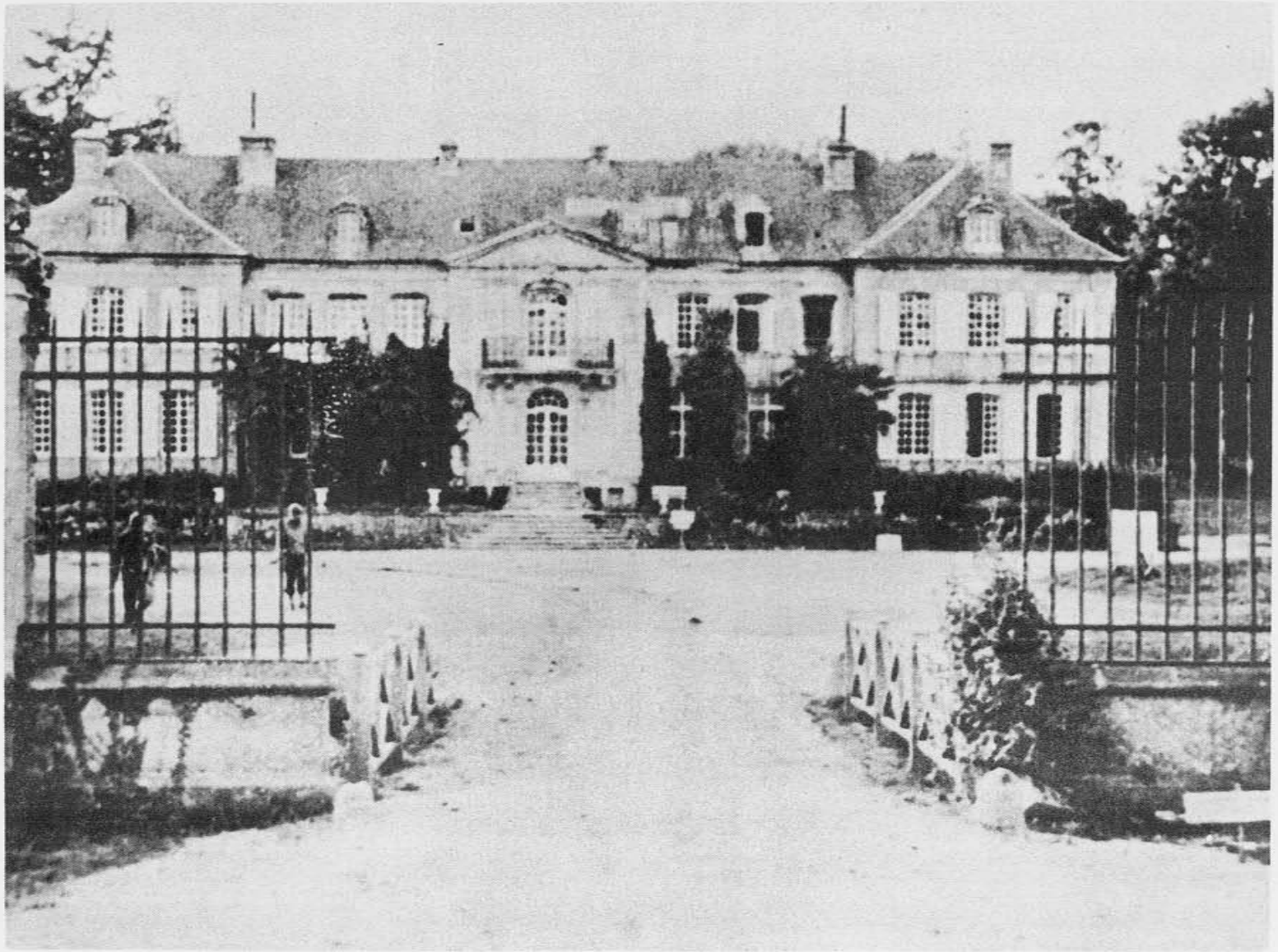

FIGURE 4.—Chateau Pont Rilly, Valognes Home of OCQM

FIGURE 5.—The Hotel Astoria, Paris Home of OCQM

up as a special staff section under the Operations Division (G-4) (see app. XIII).[52] The OCQM had representation on the staffs of the Theater Commander and the Commanding General, SOS, ETOUSA. The relationship between the Chief Quartermaster and the Theater Commander ended in the fall of 1943, when the Office of the Deputy Quartermaster was dissolved, but the relationship between the Chief Quartermaster and the Commanding General, SOS, ETOUSA, was strengthened. On 8 June 1943 a Chief of Services, directly responsible to the Commanding General, SOS, ETOUSA, was appointed to supervise and coordinate the activities of all supply and technical services in the theater.[53] This plan preceded the return of the planning echelon of the SOS to London. By mid-October 1943 the echelons of SOS were firmly established. The general staff sections had been renamed and the supply services put under the Chief of Operations, formerly G-4. (See app. XIV).

When Supreme Headquarters, Allied Expeditionary Forces, (SHAEF), was established in January 1944, Headquarters, ETOUSA, and Headquarters, SOS, ETOUSA, were consolidated. The Commanding General, SOS, ETOUSA, became Deputy Theater Commander. The general staff sections were reinstated, and the normal relationship between the Chief Quartermaster and the Commanding General, SOS, through G-4 reestablished. When the SOS became the Communications Zone on 6 June 1944, (see ch. 1) no changes in its organization took place.

When SHAEF was dissolved in July 1945, separate staffs were set up for Headquarters, Communications Zone, and Headquarters, European Theater. The original plan, issued in March 1945, called for the establishment of a theater zone staff in Germany to operate directly under the Commanding General, European Theater, and a Communications Zone staff to operate entirely in liberated countries and the United Kingdom. The chiefs of services were again to have dual roles and to be represented on the theater zone staff and in Communications Zone headquarters.[54] After USFET and TSFET were created and the Forward Echelon of OTCQM was moved to Frankfurt, the Paris office of OTCQM controlled all quartermaster activities in the theater.[55]

IN RELATION TO OTHER HEADQUARTERS

Base Sections

As early as February 1943 the Chief Quartermaster found that supply activities in the United Kingdom were being hampered because base section commanders did not have a clear understanding of their duties and responsibilities. He requested, therefore, that a circular be published stating that base section commanders were limited to military command functions and that the supply services were responsible for all technical supply operations in the field.[56] The Commanding General, SOS, ETOUSA, complied with the request on 26 February 1943.[57] In June OCQM issued a circular defining the relationship between the Chief Quartermaster and the base section commanders with regard to the operation of depots.[58]

The Chief Quartermaster was charged with prescribing policies and procedures for operating quartermaster installations, coordinating activities of general depots, determining allowances of motor and warehouse equipment, installing materials handling equipment, and establishing Tables of Organization for headquarters and quartermaster sections of general depots. He was also responsible for the administrative control of depots, which covered the following duties:

> Determining space requirements for all services.
>
> Recommending new construction, major improvements, and expansion of facilities.
>
> Acting on applications from the supply services for additional space and reassigning space at general depots.
>
> Carrying out War Department storage policies.
>
> Conserving space within depots.[59]

The base section commander was charged with the command and internal management of general and branch depots. A representative of OCQM was placed on the staff of each base section commander. His function was to provide all quartermaster supplies and services to the troops within the base section. He acted under the direction of the base section commander in all matters except the operation of depots, for which he was responsible to the Chief Quartermaster. His duties were as follows:

Assisting quartermaster supply officers of general depots and commanding officers of quartermaster depots with technical advice and aid.

Maintaining liaison between depots and OCQM.

Insuring the carrying out of OCQM policies and instructions with respect to housekeeping, utilization of dunnage, installation of safety factors for protection of both buildings and supplies, and proper storage and turn-over of supplies.[60]

On 5 August 1943, G-4 proposed the publication of a circular giving the full responsibility for the operation of depots to the base section commander.[61] The Chief Quartermaster vehemently opposed this policy stating:

I cannot concede that anyone believes in decentralization more than I do. The solution of our problem lies in decentralization. My recent visit of a few months ago to North Africa definitely confirmed me in my views on decentralization. However, there are two important facts which cannot be overlooked, to wit:

(a) There must be centralized control if supply is not to fail.

(b) The Chief of Service responsible for any particular item must have sufficient authority to see that the item is available at all times where needed. Otherwise, he cannot be held responsible for the failure of supply.[62]

Nevertheless, on 24 August 1943, the circular was published, and the base section commander was charged with responsibility for all SOS operations within his base section.[63]

The staffs of base section commanders were organized on the same general lines as SOS headquarters, with general and special staff sections. Under this organizational structure each of the five base sections in the United Kingdom was provided with a quartermaster section, which was responsible for all quartermaster activities in its area. (See app. XV).

There were seven base sections on the Continent and one in the United Kingdom when hostilities ceased in Europe. The relationship that had been established in the United Kingdom was carried over to France and Germany. Each Continental base section consisted of a general and special staff. The base section commander was responsible to the Commanding General, Communications Zone. The service representatives on his special staff were jointly responsible to him and to their respective service chiefs. (See app. XVI.)

Ports

The use of quartermaster sections at major ports, a rather specialized operation, was instituted on the Continent. The port quartermaster acted as technical adviser to the port commander on all matters pertaining to quartermaster cargo and as coordinating agent for the movement of quartermaster supplies in accordance with distribution directives issued by OCQM. The port quartermaster was responsible to the port commander for all military command and administrative activities and to the Chief Quartermaster for all technical operations. This section was the first link in the chain of echelons by which supplies were moved forward.[64] The organization of the Quartermaster Section, Antwerp, appears as appendix XVII.

Army Groups, Armies, and Corps

The army group quartermaster was responsible for the supply of quartermaster items to two or more armies. He was charged with the transfer of supplies from one major unit to another, the control of critical items, armies assigned to the group.[65] A chart of the Quartermaster Section, Twelfth Army Group, and the coordination of requirements for all appears as appendix XVIII.

The army quartermaster was the highest field echelon of quartermaster organization. Attached to the staff of an individual army, he was responsible for establishing and operating all quartermaster supply points and depots; for determining all quartermaster requirements; and, through liaison with corps and division quartermasters, for maintaining the uninterrupted flow of quartermaster supplies and services to the combat elements of the army.[66] Although the organization of quartermaster sections of the several armies was modified to meet peculiar conditions, each section was organized upon a basic pattern. The Quartermaster Section, Third Army, was typical (see app. XIX).

The quartermaster sections of corps and divisions were purely administrative and coordinating agencies. The activities over which they had control included operation of graves registration collecting points, battlefield recovery of salvage, and supply to corps or division troops.[67]

ADSEC

On 28 December 1943 the Theater Commander and the Commanding General, SOS, ETOUSA, established a service headquarters to supply the armies on the Continent after the invasion. This headquarters, known as Advance Section, Communications Zone, (ADSEC), took over for the assault forces the functions and activities formerly assigned to a service area.[68]

The organization of ADSEC followed the pattern of Headquarters, ETOUSA. The quartermaster section, established on 17 January 1944 under Colonel Michael H. Zwicker, was housed in the buildings occupied by OCQM on Grosvenor Square, London. The basic mission of the quartermaster section was to provide quartermaster items to the armies as soon as a foothold had been gained on the Continent and, as an element of the Communications Zone, to support the later stages of the operation. The first increment of ADSEC personnel arrived on the Continent on D-plus-20-day. The major portion of the quartermaster section was in France when ADSEC was set up at Catz on 29 July 1944.[69] A chart of the Quartermaster Section, ADSEC, appears in appendix XX.

CONAD

A second advance section was added to the Communications Zone in February 1945, when the Southern Line of Communications was transferred from the Mediterranean Theater of Operations to the European Theater of Operations.[70] The Continental Advance Section (CONAD) had been set up under the Southern Line of Communications to supply the Sixth Army Group and the French forces that had invaded Southern France.[71] Because both American and French forces were supported, CONAD had two distinct staffs—one American and one French. (See app. XXI).

FECZ

The Forward Echelon, Communications Zone, (FECZ), was activated by SHAEF on 10 March 1944 to complete all Communications Zone planning for the period to D-plus-90-day.[72] FECZ accomplished its mission by 26 June 1944, D-plus-20-day, and was dissolved before the Communications Zone moved to the Continent.[73]

The chiefs of services determined the personnel requirements for FECZ and recommended to the Commanding General, SOS, ETOUSA, personnel to be placed on detached service with FECZ. Colonel John B. Franks was appointed Quartermaster, FECZ, on 11 May 1944.[74] Like ADSEC, FECZ bore to OCQM the relationship of another base section. Its quartermaster section was under the military command of the Commanding General, FECZ, and under the technical jurisdiction of the Chief Quartermaster. (See app. XXII.)

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CHAPTER 3

PROCUREMENT

The invasion of the Continent was predicated upon basing United States troops in the United Kingdom and building up stock piles sufficient to sustain them during the Continental operation. Before the first troops sailed from the New York Port of Embarkation, plans had been laid for procuring in the United Kingdom as many quartermaster supplies as possible in order that money, time, and shipping space might be saved.

IN THE UNITED KINGDOM

The foundation of procurement in the United Kingdom was laid by the passage of the Lend-lease Act on 11 March 1941, at a time when the peace-loving nations of the world had not stopped the rising tide of Nazi aggression. On 23 February 1942 the Master Agreement was signed between the Governments of the United Kingdom and the United States of America. This document enunciated the principles applying to mutual aid in the prosecution of the war. The Government of the United States of America would continue to supply the Government of the United Kingdom with such defense articles, defense services, and defense information as the President should authorize to be transferred or provided; and the Government of the United Kingdom would continue to contribute to the defense of the United States of America and would provide such articles, services, and facilities of information as it might be in a position to supply.

The agreement further provided that at an early date conversations would be begun between the two Governments with a view to determining the best means of achieving all the economic objectives set forth in the joint declaration made on 12 August 1941 by the President of the United States and the Prime Minister of the United Kingdom.[1]

The small contingent of troops that reached the United Kingdom in January 1942 received accommodation, rations, and fuel from the British. This arrangement had been made possible by the Special Army Observers Group, which had been sent to England in May 1941,[2] and by the Allied Nations, declaration of 1 January 1942, in which the contracting governments pledged themselves to employ their full economic and military resources against the enemy.[3]

The reciprocal aid agreement between the United States and the United Kingdom was concluded on 3 September 1942 with the exchange of notes between Lord Halifax and Secretary Cordell Hull. It was then stipulated "that as large a portion as possible of the articles and services which each Government may authorize to be provided to the other shall be in the form of reciprocal aid so that the need of each Government for the currency of the other may be reduced to a minimum."[4] The United Kingdom would provide supplies, materials, and services when it was found that they could "most effectively be procured in the United Kingdom or in the British Colonial Empire."[5]

Reciprocal aid, usually called reverse lend-lease, was defined as the method by which governments allied with the United States would furnish supplies, equipment, facilities, and services locally and without payment. The United States armed forces and other agencies of the United States Government were relieved from accountability to allied governments for reciprocal aid procurements but kept records in a manner prescribed by the theater.[6]

In 1942 the United States armed forces received an estimated 1,121,000 tons of supplies; in 1943, 1,826,000 tons; and in the first 6 months of 1944, 3,400,000 tons. During this period about one-third of all supplies and equipment required by the American Expeditionary Force in the British Isles was furnished as reverse lend-lease. After great numbers of American troops moved to the Continent, the United Kingdom continued to be a major source of supply.[7]

The Quartermaster Service in the European Theater of Operations—charged with feeding, sheltering, and clothing troops whose number passed the 3,000,000 mark and charged also with providing other necessities and comforts—accomplished one of the greatest procurement tasks of all history.

Procedures Adopted

Large-scale procurement in the United Kingdom had its beginning in the early sum-

mer of 1942 with the creation of the General Purchasing Board and the Board of Contracts and Adjustments. On 17 June 1942 the functions of both agencies were outlined. The General Purchasing Board would procure and inspect all supplies obtained in the United Kingdom, perfect arrangements with designated representatives of the United Kingdom and other governments, make arrangements for services and labor, issue regulations, and consolidate the purchases of the several supply services. The Board of Contracts and Adjustments would prepare the important contract agreements between the United States and other governments, formulate agreements between a supply arm or service of the Services of Supply and the corresponding service of another government, assist contracting officers in the negotiation of important contracts, and aid in adjusting and settling outstanding obligations.[8]

A procurement branch was set up in each supply service and charged with procuring all supplies and services locally available in the United Kingdom. The chiefs of these branches served as operating members of the General Purchasing Board.[9] The United States Requirements and Supply Committee was designated as the agency of the British War Office to take final action with respect to all the requirements of United States forces for which the War Office was responsible.[10] Before reciprocal aid procedures were established, purchases up to $1,000 could be made without the approval of the General Purchasing Agent. Subsequent directives, however, reduced the amount. By the fall of 1943 all bills exceeding $20 had to be reviewed by the General Purchasing Agent before they could be paid.[11]

Between 1 June 1942 and 30 September 1943 the reciprocal aid program brought about a saving in shipping space of 2,390,800 ship tons. Of this amount 1,100,100 ship tons, or 46 percent of the whole, represented a saving in the transportation of quartermaster items.[12] By 1 July 1945 the United Kingdom had furnished to United States forces supplies with a monetary value of $4,220,299,000.[13] From July 1942 through April 1945 the General Purchasing Board procured in the United Kingdom 3,051,256 ship tons of quartermaster supplies with a monetary value of $258,457,537.[14]

The magnitude of the achievement can be better appreciated when the problems confronting the two nations are understood. Careful analysis was necessary to determine the part United Kingdom procurement should play in the supply program. The needs of the armies and the civilian populations of both countries had to be considered and balanced. The productive capacity of the United Kingdom, which had long been at war and which needed still to supply armies and navies in many parts of the world, had to be carefully studied and weighed against the saving in time, money, and shipping space that procurement in the United Kingdom would make possible. Estimates had to include losses caused by sinkings and work interruptions caused by bombings. Delicate adjustments had to be made between British standards and American specifications, British and American procedures, and British and American scales of issue. Anglo-American committees were created to solve problems and to make decisions.

Early Negotiations

By the 1st of July 1942 Brigadier General Robert M. Littlejohn, the Chief Quartermaster of the European Theater of Operations, was able to report to the Assistant Chief of Staff, G-4, SOS, that he had laid the foundation of quartermaster procurement in the United Kingdom. He had ascertained the several official agencies of the British Government through which negotiations should be made. He had taken action preliminary to obtaining those items that were definitely available in the United Kingdom. He reported that items of doubtful availability were being studied by the British and by his office. Some decisions, he said, could be reached in a few weeks, while others would require a longer time. He then furnished the following specific information concerning the status of procurement:

> The British had definitely agreed to furnish for 250,000 men camp equipment, which would be in camp when troops arrived, and had agreed informally to provide camp equipment for all BOLERO forces.
>
> The procurement of laundry, shoe repair, and bakery equipment was under discussion. Laundry and bakery equipment would probably be available. The War Department had been asked whether or not shoe repair equipment could be sent from the United States if it could not be procured from the British.
>
> The British had agreed to furnish from

the common pool the United States Army's requirements of frozen pork, lamb and mutton, beans, cereals, flour, potatoes, bread, lard, sugar, sirup, tea, fresh vegetables, and a few other items. The details of the transaction were then being worked out.

Official request had been made of the War Office for 1,000,000 woolen blankets, one for each man in camp or cantonment. Thus the United States issue could be released for field training and for combat.

The War Office was discussing a request to supply the American requirement of tent poles.

The request for camp cooking material, which probably would be granted, would free United States items for field training and for combat.

Negotiations were under way with the British for the supply of all required stationery.

Tentative arrangements had been made by which the British would release the woolen underwear, overcoats, and trousers that would normally be supplied to the Near East Command if a similar number in the United States could be made available to the British. It was possible, however, that technical problems connected with the production of the garments could not be solved.

Tentative arrangements had been made for the British to meet all soap requirements.

Tentative agreement had been made for the British to turn over all available typewriters. The supply, however, would not meet the United States requirements. Moverover, the typewriters on hand were not new.

The British had agreed tentatively to provide a standard English bunk for each United States soldier. In order to meet deficiencies, however, and to have a mobile reserve, it would be necessary to send some folding cots from the United States.[15]

From this report it is clear that negotiations were early under way for procuring from the British all supplies that could be produced locally or drawn from existing stocks.

The Exchange Plan

On 26 July 1942 Washington approved the procurement of items on an exchange or replacement basis.[16] Within a week, however, approval was rescinded. Items might be obtained only on a reverse lend-lease basis.[17]

The policy of local procurement for the purpose of saving shipping space, which the General Purchasing Board laid down immediately after its creation, had met at once with British approval. Conferences resulted in requests from the Ministry of Food that the United States buy in the United Kingdom as many foods as possible because such purchases promoted economy in the use of labor, shipping, and transportation and storage facilities. The Ministry of Food assured Brigadier General Littlejohn that the arrangements that had been made would have no detrimental effect upon the British civilian population provided the shipping was available for the usual importation from British colonies.[18]

In the summer of 1942 the supplies of cheese, evaporated milk, dry beans, and pork exceeded British requirements, and the surplus was made available to United States forces. It was possible, however, that replacement from the United States would be necessary later. Through the local procurement of sugar, potatoes, salt, cocoa, black pepper, extracts, tea, meat sauces, vinegar, and dry cereals a saving of about 230,000 ship tons could be achieved between September 1942 and March 1943. For instance, both countries procured their sugar from the West Indies, and both countries imported cocoa and pepper. It would be wasteful to have the products sent first to the United States and then transported to the United Kingdom. The British supply of potatoes could be used, and dehydrated potatoes could be imported as a reserve item. Therefore, on 4 August 1942 Brigadier General Littlejohn sent an earnest request to the Commanding General, SOS, ETOUSA, that Washington be urged to reinstate the exchange agreements with the United Kingdom.[19]

On 15 August Major General John C. H. Lee, Commanding General, SOS, ETOUSA, recommended to the Commanding General, SOS, Washington, that the agreements with the British be reinstated. He reiterated the arguments that had to do with the saving in ship tonnage; with the economical use of labor, shipping, and transport and handling equipment that drawing from the common

pool would bring about; and with the advantages of being able to withdraw supplies from widely dispersed British points if any of our depots should be destroyed. Moreover, the British had given definite assurance that the components in our ration could be furnished with the possible exception of pork, cheese, evaporated milk, and dried beans. Consideration would be given at 3-month intervals to the items to be drawn from the British reserve. General Lee concluded his letter with the statement that proper reserve stocks of those items drawn from the British would be maintained under his control.[20]

The War Department's reply to this letter, dated 17 September 1942, defined the policy that continued throughout the succeeding years. Basically the original instructions were reaffirmed: namely, that local resources were to be exploited "to the maximum extent possible consistent with furnishing standard equipment and supplies to the American Army in simple direct fashion and under the complete control of the Commanding General." Authority was granted to procure in the United Kingdom needed food for which no replacement was required; foods whose processing or packaging would appreciably increase ship's tonnage; emergency foods, even though replacement was required; and foods that required replacement but that would spoil if not used. It was understood that the United States forces would maintain under their control adequate reserves of all food procured from the British. It was desired that procurement should be made in the simplest manner possible, with complete agreement between the British Ministry of Food and the procuring agencies of the United States forces. The ETO should send requisitions to the War Department for all replacements that were required.

Needed items of clothing and equipage might be procured from the British, if quality was satisfactory, if specifications were met, and if no replacement was required. Only by specific prior agreement between the War Department and the ETO could such materials be procured from the British on a replacement basis.[21]

The way was now cleared for continued negotiations with the British. Toward the end of August 1942 Colonel Wayne R. Allen, Chief of the Procurement Division, Office of the Chief Quartermaster, learned from Mr. J. F. Knight, of the Ministry of Food, that the following items could be furnished without replacement in kind or in raw materials: chocolate and hard candy, jam, sugar, potatoes, fresh fruits and vegetables when available, biscuits, cereals, cocoa, lemon and vanilla extracts, sirup, pepper, pickles when available, all sauces except catsup, spices, tea, and vinegar; and lamb and mutton when surpluses existed.[22] On the basis of Mr. Knight's assurances, Brigadier General Littlejohn reopened the question of procuring food from the British.[23] A list of quartermaster items procurable from the British on 1 September 1942 appears in appendix XXIII.

Administrative Problems

During the summer and fall of 1942 administrative problems connected with methods of transacting business with the British presented themselves for solution. Concentration of purchases, operation through proper channels, and the adoption of British rationing standards were subjects that needed to be clarified before the reciprocal aid program could run smoothly.

The procurement divisions of two or more supply services were at times demanding the same items. Matches and soap, for instance, were sold by both sales commissaries, operated by the Quartermaster Service, and post exchanges, operated by the Army Exchange Service. The British expressed the opinion that much confusion could be avoided if purchases were centralized. Brigadier General Littlejohn recommended to the General Purchasing Agent that items needed by two or more services be purchased by the service using the greatest quantity.[24]

On 28 August 1942 a representative of the British Ministry of Supply called at the Office of the Chief of the Procurement Division of the Office of the Chief Quartermaster to discuss the duplication of demands made by the Army Air Forces and the Services of Supply. A conference was called to iron out the difficulties.[25]

From the outset the British preferred that all procurement demands be made through official channels. By refusing priorities for replacement of goods to those merchants who made direct sales to the United States forces, the Ministry of Supply helped to put an end to direct purchases by services or individual officers.[26]

The British were insistent also that United States procurement officers make no direct contacts with the Board of Trade. Agreement

was reached, therefore, by which the Navy, Army, and Air Force Institute—corresponding to the Army Exchange Service—would be the liaison agency between the Procurement Division of the Office of the Chief Quartermaster and the British Board of Trade.[27]

Direct contacts between procurement officers and manufacturers or branches of the Ministry of Supply continued, however, to disturb the British. On 20 October 1942 the Director of Clothing and Stores, British War Office, sent a memorandum to the Chief Quartermaster in an effort to establish procedures for demanding and obtaining items. He asked that the Procurement Division, OCQM, submit as nearly complete a list as possible of requirements through 1943. SOS, ETOUSA, should deal directly with the War Office. Whenever possible delivery schedules should be given so that production might be planned. Requirements should be separated into items that could be accepted in standard British patterns and items that must be manufactured in United States design. For the latter group the Office of the Chief Quartermaster should submit samples; and, before bulk production was started, the British War Office would submit pilot items for approval. The Ministry of Supply would place all contracts and inspect all factories that were producing goods for United States forces. The Director of Clothing and Stores concluded the memorandum by urging that SOS officers make no direct contacts with manufacturers.[28]

The Chief Quartermaster replied that he was in agreement with the procedure suggested. Though the experience and knowledge of the procurement specialists was invaluable in the manufacture of items to be made according to American design, he would instruct all officers to arrange such contacts through the British War Office.[29]

The question of direct contacts came up again for discussion at a conference held on 21 November 1942. Representatives of the Ministry of Supply then pointed out that United States officers had given contractors the impression that orders would be given to them and had caused much confusion within the offices of the Ministry by disregarding the proper channels. The Procurement Division gave assurance that the objectionable practice would not be continued.[30]

The British rationing program for military and civilian personnel had been established long before United States troops landed in the United Kingdom. It was natural that England should not want guests to be on a more generous rationing program than the one prescribed for its own people. Because of the labor shortage, the British soldier's laundry bundle had been reduced in size. Hardship though it might be, the United States soldier also was forced to reduce the size of his laundry bundle.[31] It was decided that the United States soldier would have to get along on the British soap and candy ration.[32] Accordingly, on 22 July 1942 the British War Office instructed supply installations to do laundry work, dry cleaning, and shoe repairing on the basis of British standards.[33] Two days later the Chief Liaison Officer informed the Office of the Chief Quartermaster that the American soldier would receive the same amount of candy that was allowed the British soldier.[34]

The decision regarding matches, however, presented difficulties. The United States requirement of 4,500,000 boxes a month could be manufactured in the United Kingdom at a saving of 234 ship tons a month; but the British were willing to provide the matches only on the condition that their rationing program was adopted.[35] The British soldier got only one box a week, while the United States soldier had been getting three boxes a week. At first it seemed best to continue to have the matches shipped from the United States. In August, however, the Chief of the Procurement Division reopened the question, suggesting the possibility of limiting the ration to two boxes a week and asking for a conference with the Match Controller of the British Board of Trade.[36] At the conference an acceptable compromise was reached, and the United states soldier was limited to two boxes a week.[37]

Procedures Clarified

By the fall of 1942 the relationship between the Office of the Chief Quartermaster and the British War Office had been so well established as to enable procurement to be carried on with a degree of efficiency. After 21 October 1942 it was no longer required that equipment, services, supplies, or facilities received from a foreign government on a reciprocal aid basis be evaluated in monetary terms unless such values had been made available by the foreign government concerned or unless a procedure had been established for arriving at agreed valuations. In order that estimated values might be assigned, however, adequate descriptions of all procured items were required.[38]

Colonel Wayne R. Allen, Chief of the Procurement Division, Office of the Chief Quartermaster, and Major P. W. Ricardo, Director of Clothing and Stores, British War Office, undertook a special mission to Washington in October 1942. Conferences held at the various divisions of the Office of the Quartermaster General resulted in agreements by means of which procurement in the United Kingdom was simplified.[39]

Circular No. 75, issued by ETOUSA on 19 November 1942, set forth the procedure for obtaining supplies from the United Kingdom. If items were of surplus output, the British required no exchange or replacement. When exchange arrangements were necessary, SOS, ETOUSA, would discuss the compensating plan with the British War Office and send to the United States War Department a recommendation for approval or disapproval. Provision was made by which emergency issues could be made by the War Office. ETOUSA was authorized to draw from the British against expected shipments and to repay in kind upon the arrival of goods. If no guaranty was possible, it was proposed that United States representatives in London request the War Department to make replacement. Such replacements would have priority and would be scheduled according to agreements between the British War Office and ETOUSA. When directed by the Theater Commander, the Commanding General, SOS, ETOUSA, was authorized to bind the War Department with respect to emergency transactions for nonassignable items; and the Executive Officer, United States Staff, London Munitions Assignment Board, was authorized to bind the War Department with respect to emergency transactions for assignable items.[40]

On 4 January 1943 ETOUSA further clarified procurement procedures. The United States was the primary base for American troops in both the United Kingdom and Africa. The United Kingdom was the secondary base for troops stationed in the United Kingdom and for the Center Task Force engaged in North African campaign. ETOUSA was given blanket authorization to procure supplies if no replacement was required and, if replacement was required, to procure supplies according to the procedure laid down in Circular No. 75, of 19 November 1942. The British would supply all common items for the Eastern Task Force in North Africa. If emergency needs could not be met by the United States in the quantities and at the times specified, they might be procured from the United Kingdom for all ETOUSA forces. Except when necessity required, British-type equipment might not be obtained to meet unit requirements if maintenance or replacement in kind was necessary. At times to be designated by the Commanding General, SOS, ETOUSA, the chiefs of the supply services were to submit to the General Purchasing Agent schedules of programed requirements for 1 or 2 years if possible so that the United Kingdom might plan its production. If requirements could not be submitted on the designated dates, provision was made for interim submission. After orders for items were accepted by the British on a firm basis, the chiefs of the supply services would arrange with the New York Port of Embarkation for cancellation of an equal number of items. In emergencies items of nonrecurring need that were not covered by programed requirements might be obtained from the British if they were not critically short in the United Kingdom, if time would not permit procurement from the United States, if a saving in shipping space was effected, or if the items were critically short in the United States.[41]

The organization in January 1943 of the Clothing and Stores United States (DCS/US) Supply Committee did much to promote the smooth functioning of the supply program. The committee was composed of representatives from the British War Office, the Ministry of Supply, and the United States Services of Supply. Each supply service, meeting with the British Director of Clothing and Stores, formulated demands, which were later presented to the committee for confirmation. The DCS/US Supply Committee was a unilateral body in that the final decision rested in the hands of the British members, who based their response to demands upon the surpluses available after the needs of the British Army and British civilians had been met.[42]

The Mission for Economic Affairs—headed first by W. Averell Harriman and consequently known as the Harriman Mission—was the lend-lease agency in Great Britain. Early in 1943 a joint board was created to review United States requirements. It was made up of representatives of the Harriman Mission, the London Munitions Assignment Board, and SOS, ETOUSA.[43]

When Colonel D. C. MacKeachie retired from the position of General Purchasing Agent on 1 January 1943, he was able to report that a clear policy governing procurement in the ETO had been established and was in op-

eration. Of quartermaster procurement he wrote as follows:

> Large quantities of supplies of all classes are being obtained from the British. Requirements for 1943 are generally established and have been demanded from British sources. Cancellations from the United States have been generally carried out. The Chief Quartermaster is to be complimented on the efficiency and speed of the procurement programme.[44]

Colonel Wayne R. Allen, who had been serving as Chief of the Procurement Division of the Office of the Chief Quartermaster, succeeded Colonel MacKeachie as General Purchasing Agent; and Colonel M. H. Zwicker became Chief of the Procurement Division. A comparison of Colonel Allen's report of 1 September 1942, when the foundations of the broad procurement program were being laid, and Colonel Zwicker's letter of 21 June 1943, which gave some facts on local procurement at that time, indicates not only the scope of the program but the progress that had been made in a short period and under many difficulties (see apps. XXIII and XXIV).

By the summer of 1943 the policies and procedures governing procurement in the United Kingdom had been firmly established. This program brought about the creation of stock piles essential to successful invasion of the European Continent.

ON THE CONTINENT

Local procurement of quartermaster supplies was even more important during the first 6 months of the Continental operation than it had been while stock piles were being built up in the United Kingdom. Shipping space needed to be saved; bottle-necking of Continental ports needed to be prevented; and the requirements of combat troops needed to be met promptly. The future of liberated countries, moreover, depended upon the speedy rehabilitation of industry and agriculture. Consequently, before D-day the European Theater of Operations set up the machinery for procurement on the Continent.

Over-all Procedure for Procurement

Standing Operating Procedure No. 10 was published on 1 April 1944. Its regulations were applicable to all procurement of supplies, equipment, facilities, and services by agents and agencies of the United States in occupied and liberated territories in the European Theater of Operations but did not apply to the procurement of civilian labor, which was provided for in separate regulations.[45]

Maximum use would be made of local procurement. Due consideration, consistent with the urgency of the needs of the forces, would be given to civilian economy. Procurement in liberated territories would be accomplished by requisitioning through local civil officials in accordance with local law, and payment would be deferred until reciprocal aid or other agreements had been negotiated with the government. However, payment would not be deferred if delay would work a hardship on the owner of the property procured or affect operations or security, or if the purchase price did not exceed $1,000. British and United States pricing policies would be uniform, and competition would be avoided. Prices paid by United States forces would be in accordance with official United States prices issued by higher authority. If United States official prices had not been made available, local official prices would be ascertained and used. United States forces would not procure locally when the effect of such procurement would have to be offset by importation for the relief of the civilian population. The four methods of procurement used were purchase, rental, requisition, and seizure.[46]

On 29 April 1944 Supreme Headquarters, American Expeditionary Force, made further recommendations regarding procurement, particularly of property. Existing accommodation or shelter would be used even at the cost of administrative convenience. Every effort would be made to obtain in existing buildings at least one-third of the total accommodation or shelter required for hospitals. Civilians in liberated countries would be treated as inhabitants of an allied country and would be allowed to live on their own property in the minimum essential space, unless the military situation required that they be moved.[47]

During existing or imminent military operations, forcible entry would be made only for tactical reasons. Under other conditions forcible entry would be made only if directed by a general officer, commanding general, area commander, or base section commander. In an area where units of two or more of the Allied forces required accommodation or shelter, the allocation of space would be made by the headquarters controlling the area.[48]

The General Purchasing Agent, as chairman of the General Purchasing Board, was responsible for local procurement. His duties included the issuance of appropriate procurement regulations and the supervision and coordination of all procurement. Officers of the various supply services and other procuring agencies would be detached for service with the General Purchasing Agent and would perform such duties with respect to local procurement as might be assigned them by their respective chiefs of services. Such duties were to be consistent with the policies and procedures of the General Purchasing Board. The actual procurement was accomplished by purchasing and contracting officers, who were given orders indicating the type of items they were authorized to procure and the monetary limit, if any, on individual procurements.[49]

Procedure in France

On 25 August 1944 an agreement between the Supreme Commander, Allied Expeditionary Force, and the French Provisional Government was reached whereby the French authorities undertook to meet the demands of the United States forces for supplies, facilities, and services. The terms of this agreement were incorporated into Standing Operating Procedure No. 10F, which was issued on 23 September 1944 and reissued, with revisions, on 16 December 1944. The French were to establish the Service d'Aide aux Forces Alliees, which would have representatives in each region and department to receive and fulfill the demands of the United States forces. In the absence of representatives of the Service d'Aide aux Forces Alliees, demands by United States forces (except for billets) would be transmitted to the prefet, the sous-prefet, an official designated by the prefet, or the head of the appropriate French service within the department. For example, if United States forces wished to procure timber, they would place their demand with the head of the Administration of Waters and Forests. Where it was impossible to reach the proper department within the available time, the United States forces might place demands for supplies, equipment, and facilities with the military authorities or the mayor of the appropriate town. In all cases demands for billets would be placed with the mayor of the town affected. French liaison officers or civil affairs officers would assist in placing demands on French authorities. If, however, procurement could not be accomplished within the available time, the United States forces would resort to direct procurement from civilian sources. Standard forms and receipts were set up for this service.[50]

Certain items could be procured only upon approval of the General Purchasing Agent. In the list of items procured by the Quartermaster Service were food in all its forms, except fresh fruits and vegetables; livestock and fodder for livestock; insecticides and soap; coal, petrol, oil, lubricants, and all fuel wood except that obtained by exploitation of forests. At the request of the French authorities, the local commander might prohibit purchases of items not included in this list, particularly the purchase of fresh fruits and vegetables.[51]

By 31 January 1945 the French had supplied to the United States forces as reverse lend-lease, or had placed contracts to supply, goods and services with an estimated value of $200,615,000.[52]

Procurement in Belgium

On 31 May 1944 an agreement between the Supreme Commander, Allied Expeditionary Force, and the government of Belgium was made regarding the procurement program.[53] The terms of this agreement were incorporated into Standing Operating Procedure No. 10B, which was issued on 5 October 1944 and reissued, with revisions, on 19 December 1944. The Belgian government designated local burgomasters as agents to receive and assure fulfillment of the demands of the United States forces for supplies, facilities (including billets), and services available in Belgium.[54] The procedure and regulations for procurement were similar to those used in France. The list of items prohibited for procurement was identical with the French list. By 1 July 1945 Belguim had furnished to United States forces $55,647,000 worth of goods and services.[55]

Procurement in Germany

The Standing Operating Procedure for Germany, issued on 15 December 1944, governed procurement by all units of United States forces in Germany except over-all long-term procurement by officers of supply services in SHAEF, which was covered by separated instructions.

Procurement in Germany differed in one respect from procurement in liberated coun-

tries: confiscation replaced rental. However, the other three methods used in liberated countries (purchase, requisition, and seizure, which are defined in Standing Operating Procedure, No. 10, 1 April 1944) were also used in Germany under regulations similar to those prescribed for procurement elsewhere. The Standing Operating Procedure for Germany defined confiscation as follows:

> All property (supplies, equipment, cash, securities, facilities, and the use of land or buildings) belonging to the German State, the National Socialist (NAZI) Party, or any agency used by either of them, when required by the United States forces, will be confiscated without payment of any kind. Included in the foregoing is property which has been transferred to private individuals or public or private organizations to avoid confiscation.[56]

Production Control

The Production Control Agency, ETOUSA, which was established a week before VE-day, functioned as the United States element of the Production Control Agency, SHAEF. The methods and procedures set forth in the general order by which the agency was created governed the United States organization and personnel for production control in Germany. The Assistant Chief of Staff, G-4, ETOUSA, was charged with the responsibility of production control. He was to develop plans and policies consistent with those of higher authority; he was to effect coordination with other agencies; and he was to establish a program of production that would utilize the resources and facilities of Germany.

The chief of each supply service was directed to organize a production control section within his service. For this purpose the Commanding General of the Communications Zone would make available 1,400 officers and 5,800 enlisted men or women. A large number of the personnel thus assigned would be placed on detached service with the army groups and the armies but would remain under the administrative control of the chiefs of services to whom they were first assigned. The production control sections of the supply services would work in the headquarters of the Production Control Agency, under the Assistant Chief of Staff, G-4. The army groups and the armies would exercise operational control of all activities. The chiefs of services would furnish them specially trained personnel. Although normal command and staff relationships would be observed, production control in Germany would be a civilian activity under military supervision. For this reason the Production Control Agency and its various sections were authorized to make direct but informal technical liaison with corresponding agencies and personnel operating in the field of production. Basic plans and command decisions, however, would be exercised through command channels.[57]

The Quartermaster Service was assigned responsibility for industries producing the following products: clothing and textiles; processed and packaged foods, subject to coordination by G-4 and G-5; general supplies, including containers and household equipment; leather goods; office equipment; canvas, webbing, and tentage; paper; and ceramics, including glass other than optical glass.[58]

On 4 July 1945, when the Supreme Headquarters, Allied Expeditionary Force, was dissolved, the Production Control Agency passed to the United States Forces, European Theater (see ch. 2).

Procedure in Other Countries

Though the Netherlands, Luxembourg, and Sweden were parties to agreements that led to the publication of standing operating procedures, procurement in these countries was not large.

Spain and Portugal

Purchases in Spain and Portugal were negotiated with the aid of military attaches and representatives of the United States Commercial Corporation. In November 1944 Colonel A. M. Brumbaugh, representing the Quartermaster Service, visited Lisbon and Madrid to investigate the possibility of procuring blankets. On 15 November 1944 he inspected in Lisbon 100,000 blankets, which he found to be too moth-infested for use. Traveling 200 miles into the interior of Portugal, he inspected the output of four factories and found blankets of acceptable quality. Altogether, he located in Portugal 100,000 blankets that he was willing to recommend to the Chief Quartermaster.

On 18 November Colonel Brumbaugh flew to Madrid, where he learned from the military attache that 300,000 blankets manufactured for the German Army were available. Representatives of the Office of War-time Economic

Affairs of the State Department had persuaded Spain not to deliver the blankets to the original consumer. Since the American dollar was more to be desired than the German mark, the blankets could be bought for about $7.00 each instead of the $11.00 that the Germans had contracted to pay. Other blankets of the same quality could be procured at the rate of $8.50 each. The Chief Quartermaster immediately authorized the purchase. While in Spain Colonel Brumbaugh laid the foundation for the subsequent procurement of other textiles.

He returned to Lisbon on 22 November and discussed contracts and shipping with representatives of the United Kingdom, the United States Commercial Corporation, and the military attache. Negotiations were completed for the purchase of 200,000 blankets in four lots, shipment to be made from Gibraltar to the United Kingdom.[59]

In December the United States Commercial Corporation was authorized to complete contracts with Spain for 250,000 blankets and with Portugal for 500,000 blankets, 3,000,000 unbleached cotton towels, 1,500,000 terry towels, 300,000,000 handerchiefs, and 3,000,000 meters of sheeting. Delivery would be made to ports and depots in France or Belgium. The Storage and Distribution Division would find out from the Transportation Corps whether or not transportation could be arranged.[60]

By the end of January 1945 the Portuguese Government had approved the procurement program but wanted two questions answered before beginning production. First, they asked whether or not payment could be made in goods and not in money. They would bring from the coast of Africa the raw material needed to fill the order and would like to have the United States allocate to them within 30 days as much ship tonnage from the United States to Lisbon as they would use to bring raw materials from Africa to Lisbon. Secondly, the Portuguese Government wanted to know if it was true that final arrangements would have to await the arrival of a special textile expert, who would not reach Portugal until the middle of February. Because it was clear that the Portuguese Government was most anxious to do business with the United States, Major George Saxe, who had joined Colonel Brumbaugh in Portugal, wrote urging the Chief Quartermaster to arrange a conference.[61]

Fortunately, both questions were satisfactorily answered. The United Kingdom was willing for Portugal to import outside the blockade goods required in exchange for those used in manufacturing items for the United States, and authority was granted to proceed before the textile expert arrived.[62] All orders for blankets and other textiles were signed in Lisbon on 6 February 1945.[63]

The path having been cleared, the Chief Quartermaster appointed Colonel Tyron M. Shepherd as his representative in the Peninsula and issued on 9 February 1945 Spain and Portugal Procurement Directive No. 1. Colonel Shepherd would work through the United States Commercial Corporation. If this agency was not able to execute satisfactory contracts, he was authorized to deal directly with manufacturers. First, however, he was to consult the resident officer of the General Purchasing Board, ETOUSA, who would obtain clearance from the Spanish or the Portuguese Government.[64]

The first weekly report, submitted on 16 February 1945, stated that 1,000,000 towels and 1,000,000 handkerchiefs would be delivered monthly in March, April, and May and that the delivery of another 500,000 towels, 241,000 sheets, and 250,000 blankets had been scheduled. In addition, orders were being placed for fresh fruits and vegetables.[65]

Canary Islands

On 21 December 1944 the War Department approved the sending of a quartermaster representative to the Canary Islands for the purpose of procuring fruits and vegetables. The Chief Quartermaster wrote the General Purchasing Agent on 18 January that one of his officers would take stock of all available supplies on the Canary Islands and asked for help in the determination of policies before he closed deals for a procurement project that would entail the expenditure of $1,000,000.[66]

Denmark

Soon after VE-day Major General Littlejohn began a study of procurement possibilities in Denmark. His conferences with the British Ministry of Food led to an arrangement that proved mutually beneficial to the United States and the United Kingdom. Colonel A. C. Harlander was sent to Copenhagen as special OCQM representative and instructed to work in close cooperation with representatives of the British Ministry of Food.

The plan agreed upon provided that food surpluses in Denmark were to be equally divided among the United States Army the British Army, and civil affairs for Holland.[67] Major General Littlejohn had proposed the plan after a thorough study of the food situation in northern Europe. Swedish buyers were then in Denmark, paying high prices for food. Teamwork on the part of British and American representatives would lessen competition in the Danish market. The plan of distribution would bring relief to Holland, which was in great need, and would decrease demands upon both the United Kingdom and the United States.[68]

Though British and United States representatives worked together, Brigadier General Wayne R. Allen, the General Purchasing Agent of the Communications Zone, made the purchases. A promise that the United States Government had made to let the Danes have some American dollars could be legally fulfilled only by giving dollars in payment for Danish goods. Consequently, the War Department directed that purchases be made by the General Purchasing Agent rather than by a representative of the British Government. Brigadier General Allen, however, delegated his authority to buy goods in Denmark to the OCQM representative in Copenhagen. All contracts with manufacturers were negotiated in close cooperation with the Danish Government.[69]

Problems

Many difficulties stood in the way of procurement on the Continent. During the early stages of the operation, French industry was at a standstill, French factories had been bombed, and French administrative efficiency was at a low level. Producers, accustomed to the black market that had been fostered by the Germans, hid stocks and tried to avoid price control by dealing directly with Allied purchasing agencies instead of with the French Government. Enough translators and interpreters who were familiar with technical terms, both agricultural and industrial, could not be found. All United States weights and measurements had to be converted into their metric equivalents. For example, a uniform would be completely changed in size by the variation of a fraction of an inch on each of its 12 seams. Finally, continued combat presented a problem for which there was no immediate solution. As other countries were liberated, difficulties arose similar to those that had been encountered in France. Scarcity of fuel, scarcity of transportation, and scarcity of raw materials were major problems common to procurement in all countries and never possible of complete solution.

Fuel

Of all the difficulties, lack of fuel was the greatest. The liberated countries were anxious to repair their factories and put their manpower to gainful employment. Yet fuel was insufficient to turn the wheels of industry. A survey made in September 1944 indicated that France could manufacture in the immediate future 7,080,000 jackets and trousers for men and 60,000 jackets, trousers, and skirts for women and a monthly average of 150,000 caps, if fuel could be made available. In addition, the French had manufacturing facilities for manufacturing the embroidered insignia required.[70] Shortage of fuel, however, was an obstacle that could never be surmounted.

In February 1945 the coal administration in France explained the procedure by which French contractors might obtain coal. The small output of the French mines had necessitated monthly rationing. Some manufacturers had thought erroneously that a special coal quota might be obtained for American orders. The French Government, however, distributed coal according to established priorities and set aside no earmarked quota for American orders. All applications for quotas had to be made through government channels.[71]

Similarly, procurement in Belgium was retarded by the lack of fuel. Instead of the 2,000,000 tons of coal that had been the monthly production before the war, Belgium was producing 700,000 tons. Until the country's minimum need of 845,000 tons was reached, no coal could be allotted for industry. Yet 100 factories in Belgium that could be put into operation had an estimated capacity of 100,000 trousers and jackets a month.[72]

The coal problem remained unsolved. On 2 June 1945, France rejected the wool-knitting program because of the continuing coal shortage, [73] and on 1 May 1945 OCQM was struggling to find 11,700 tons of coal that were required to carry out the wool-knitting program in Belgium.[74]

Early in the Continental operation, efforts were made to supplement coal with fuel wood. In July 1944 the ADSEC Quartermas-

ter was granted authority to negotiate with the French for the right to exploit national forests that had been damaged by artillery fire. Though agreements were made with France for exploitation of forests and with France and Belgium for procurement of cut wood, the amount of fuel wood obtained fell far short of meeting the need.[75]

Transportation

After products had been manufactured, shortage of solid fuel often prevented their being moved, even though liberated countries had been able to repair road beds and rolling stock. The feeding of perishable foods to troops on the Continent was delayed because of the limited transportation available for the fresh fruits and vegetables that could be procured (vol. II, ch. 3). Contract after contract contained no guaranty that goods would be delivered from factory to depot or distributing point. For instance, the proposed agreement covering the manufacture of military clothing, which was submitted by the French on 19 November 1944 and made final on 6 December 1944, stipulated that the Quartermaster Service would provide transportation for finished products until French transportation could be made available.[76]

Early in 1945 the transportation problem became distressingly acute. The large quantities of cotton that reached the Continent had to be transported from ship to warehouse, from warehouse to spinners, from spinners to weavers, from weavers to finishers, from finishers to fabricators, and from fabricators to depots. Steel for the manufacture of jerricans and drums was arriving a few hundred tons at a time and often in ships that were not controlled by the Quartermaster Service. Ten different types of steel and many accessories had to be sorted and shipped to 85 manufacturers in France and Belgium. Similarly, wool for the manufacture of clothing and blankets had to be transported. It was clear that the Transportation Corps could not handle the situation. Because some French trucks could be made available, the Storage and Distribution Division recommended that the Procurement Division arrange with French ministries either to provide transportation or to furnish trucks to be placed under American control. It was further recommended that the Procurement Division consult with the Storage and Distribution Division before entering into large-scale contracts that required transportation of raw materials and finished products.[77]

Raw Materials

The shortage of raw materials increased the transportation problem. Finding raw materials and getting them to the Continent would have been difficult enough without the added problem of handling them upon arrival. In the fall of 1944 French and Belgian manufacturers were more than willing to make 50-gallon gasoline drums and jerri-cans, but they had little steel and aluminum. On 20 October 1944 the French accepted the demand for 840,000 drums. They could supply steel, they said, for 126,000 of these, but the United States would have to supply steel for the rest. By 8 January French manufacturers had delivered 50,391 drums and were trying hard to find enough steel to complete the contracts. Steel that had been requisitioned from the United States in November had not arrived.[78]

The program for the procurement of jerricans had an ambitious beginning. By late January 2,040,000 jerri-cans were under procurement in Belgium, and 9,720,000 in France.[79] By the end of May the number of jerri-cans demanded of Belgium had been reduced to 795,000, and production had not yet begun. The making of both jerri-cans and drums still awaited the arrival of a sufficient amount of raw material.[80] By 15 July 1945 of the 12,000,000 jerri-cans ordered, 350,000 had been delivered; and of the 960,000 drums ordered, 220,000 had been delivered.[81]

Likewise, the procurement of textile goods was dependent upon the ability of the United States to furnish raw materials. Cotton for tarpaulins, squad tents, shelter halves, towels, handkerchiefs, and sheeting, as well as finishing compounds for the tentage, had to be sent to the Continent. The procurement program was greatly curtailed because raw materials failed to arrive.[82] Similarly, wool had to be furnished for the manufacture of wool-knit goods;[83] aluminum for mess gear;[84] steel sheeting and accessories for stoves;[85] and other kinds of raw materials for many items that the Quartermaster Service required.

Revised Procurement Procedure

As manufacturing programs got under way, the Chief Quartermaster recognized the need for procedure especially adapted to procurement on the Continent. A comprehensive study of European resources, facilities, and customs led to the establishment on 28 February 1945 of the Production Branch of the Procurement Division and the adoption of

procedure that had beneficial effect upon Continental procurement. The new branch did its work through an Administrative, an Operation, an Allocation, and an Inspection Section. After a month's experience the Allocation and Inspection Sections were combined; and on 1 May 1945 the Privately Owned German Material Section was created.

The Administrative Section was charged with coordinating the activities of other sections; determining and scheduling raw materials; and preparing, processing, and following up requisitions. In order to see at a glance the progress that had been made, the Administrative Section required each commodity branch of the Procurement Division to prepare a master production program. Representatives whom the branch sent to ports did much to expedite delivery of raw materials by keeping inventories and arranging for prompt shipment of raw materials to proper destinations.

The Operation Section supervised the storing and issuing of raw materials from warehouse 35, United States Army Depot Q-177 in Paris, obtained transportation from the Procurement Division, and maintained stock records of raw materials. At the time the section was organized, deliveries of raw materials had piled up a 10-week backlog. By using French trucks, it was able within 3 weeks to reduce the backlog to less than a week. Among the accomplishments of the section were more efficient release of finished products, more efficient stock records procedure, and more efficient baling and storing of garments.

The Inspection Section set out to coordinate all inspection activities. Though its staff was not competent at first, by the end of March 1945 procedure had been established for spot-checking manufacturing plants regularly and with reasonably satisfactory results.

The Privately Owned German Material Section requisitioned and arranged for the transportation of captured enemy material and privately owned enemy material. On 29 May a similar section was organized in Brussels. Through the work of this section, enemy stock and privately owned German material were profitably used in manufacturing programs on the Continent, and pressure was lifted from the United States and the United Kingdom.[86]

Figures covering procurement on the Continent from D-day through September 1945 appear in appendix XXV.

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CHAPTER 4

SUPPLY PROCEDURES

The European Theater of Operations was the great experiment station of World War II. On 16 October 1940, when 16,400,000 young men registered under the provisions of the Selective Service Act, the Quartermaster Corps faced one of the most difficult tasks in the history of military supply. Experiences of World War I, valuable though they were, could not provide satisfactory solutions for the logistical problems that were posed by new methods of warfare. It was in the European Theater that the supply program of World War II was first put into operation. Here procedures were tested, adapted, and made to work.

When the ETO was established, only England, Scotland, Wales, and Northern Ireland were available as bases for the United States expeditionary forces that would take part in operations on the Continent of Europe. Procedures had to be set up for supplying the vast quantities of quartermaster items needed to maintain troops during the waiting period and the Continental operation.

LEVELS OF SUPPLY

First it was necessary to determine what levels of supply should be established. The term, level of supply, is defined as the amount of supplies, usually expressed in days, that is necessary to meet the requirements of a given number of troops for a given period of time. Three levels enter into the concept as applied to a theater of operations—the minimum level, the operating level, and the maximum level. The minimum level is the minimum amount of supplies to be held in reserve and drawn against only in emergencies. The operating level is the amount of supplies necessary to meet requirements until the arrival of the next normal shipment. The maximum level is the sum of the minimum and the operating levels. For instance, if the War Department directed the Chief Quartermaster to maintain a 30-day minimum level of subsistence for 100,000 troops, the minimum subsistence level would be 3,000,000 rations. If there was a 10-day interval between the expected arrival of convoys, the operating level would be 1,000,000 rations. The maximum level would be 4,000,000 rations. Since levels of supply were expressed as a number of days, the minimum level would be 30 days, the operating level 10 days, and the maximum level 40 days. In practice, the three levels did not remain separate. From the time supplies arrived in the European Theater of Operations they were considered part of a single level. There was no physical segregation of stocks. Requisitions from the European Theater were for a total number of days of supply and did not ask for quantities to provide minimum, operating, and maximum levels.[1]

The first levels of supply were published by the War Department on 22 January 1942. Then the levels for the United Kingdom were established at 60 days for all classes of supply except ammunition.[2] Because the three types of levels had not yet been defined, some doubt existed as to whether the levels established were minimum or maximum. In May 1942 the War Department stated that they were minimum.[3] It was clear that minimum levels, which did not limit the amount of supplies that could be accumulated, might cause some areas to be built up at the expense of others. Consequently, on 19 July the War Department issued a directive establishing minimum, operating, and maximum levels of supply. Minimum and maximum levels would be determined by the War Department. Operating levels would be determined jointly by the port of embarkation supplying the theater and by the theater itself.[4]

The 60-day level remained in effect until 22 August 1942, when the War Department directed that shipments to the United Kingdom be based upon a maximum level of 180 days.[5] When TORCH requirements temporarily retarded the BOLERO program (see ch. 1), the War Department reduced the level of supply for the ETO to 75 days for subsistence, 90 days for clothing, and 60 days for all other supplies.[6] The Commanding General, SOS, ETOUSA, announced on 8 December that an additional 45-day combat maintenance would be provided to maintain these levels.[7] In effect, therefore, the maximum levels for the European Theater had been set at 120 days for subsistence, 135 days for clothing, and 105 days for other classes.[8]

Though full BOLERO was reinstated immediately after the Casablanca Conference

in January 1943 (see ch. 1), the War Department proposed in April that the levels of supply for the ETO be reduced. The Chief of Staff suggested a 45-day level for all classes. The minimum levels of supply for all theaters had to be reconsidered, he explained, because of the need for economy in shipping.[9] The Chief Quartermaster opposed the proposal, saying that a 45-day level was entirely inadequate to meet the demands being placed upon the Quartermaster Service and that the levels then in effect should be maintained.[10] Nevertheless, on 20 June 1943 the War Department reduced the levels to 60 days for food and clothing and 45 days for all other classes.[11] In November the War Department again suggested that the level of supply for all classes be reduced to 45 days.[12] The Chief Quartermaster replied that he would accept the reduction for subsistence but that he could not agree to the 45-day level for clothing.[13] By the end of the year the levels of supply for the ETO were as follows:

Class of Supply	*Level*	*Working Margin*	*Total*
Class I	45 days	30 days	75 days
Class II	60 days	30 days	90 days
Class IV	45 days	30 days	75 days[14]

On 10 July 1943 the War Department undertook a comprehensive review of all existing levels of supply. In September a committee composed of representatives from the War Department General Staff, the Army Air Forces, and the Army Service Forces was established to complete the study.[15] The committee submitted its final report at the end of 1943, and on 20 January 1944 the War Department issued new procedures and levels of supply for the European Theater. The War Department prescribed all levels of supply. The maximum levels of supply for the European Theater were established at 60 days for subsistence and petroleum and at 75 days for all other quartermaster supplies.[16] The Chief Quartermaster recommended to the War Department on 29 February that the maximum levels of supply be increased to 75 days for subsistence and to 90 days for clothing and equipage.[17] The War Department agreed and on 26 April 1944 set the maximum levels of supply for the ETO as follows:

Class I	75 days
Class II	90 days
Class III	75 days
Class IV	90 days

These levels would be effective during the assault period only and would revert to the former level when the situation on the Continent became more stable.[18]

On 1 September 1944 the War Department reduced the levels of supply for the European Theater to 60 days for classes I and III and to 75 days for classes II and IV.[19] After the Battle of the Bulge had been won, Lieutenant General Brehon B. Somervell thought the levels of supply for ETOUSA in excess of actual requirements. On a visit to the European Theater in January 1945 he asked if the Theater would accept a 15-day reduction on the levels of supply for all classes. The Chief Quartermaster replied that the levels could be reduced to 50 days for subsistence; 60 days for clothing, equipage, general supplies, and sales store items; and 30 days for gasoline. He preferred, however, that the levels should not become effective until 1 July 1945.[20] The Commanding General, Communications Zone, asked the War Department to approve the reduced levels with the stipulation that the levels include supplies aboard commodity-loaded ships en route to the European Theater.[21] The War Department agreed on 3 March 1945, and the following levels were established for the European Theater:

Class of Supply	*Minimum Level*	*Operating Level*	*Maximum Level*
Class I	20 days	30 days	50 days
Class II	30 days	30 days	60 days
Class III (Except MT 80 gasoline)	15 days	30 days	45 days
MT 80 gasoline	15 days	15 days	30 days
Class IV	30 days	30 days	60 days[22]

METHODS OF SUPPLY

The supply system that the Army was using at the opening of World War II had been developed to meet the needs of a peacetime program. Its deficiencies became apparent in 1941 as new bases were established. After Pearl Harbor, when plans were being made for supporting vast armies for indefinite periods of time in many parts of the world, it was clear that the old system would prove wholly inadequate.

Oversea supply had been controlled by the chiefs of arms and services. Ports of embarkation had been little more than funnels through which supplies poured. Coordination of supply had been vested in the Assistant Chief of Staff, G-4, a task that had become too large for a single agency. Lack of planning and control was causing ports to be glutted. Independent action by the chiefs of arms and service was putting too great a strain upon transportation in the zone of the

interior. The absence of clear follow-up procedures was bringing about confusion and delay. The responsibilities of agencies needed to be clearly defined. In the zone of the interior priorities and traffic control needed to be strictly enforced. Though rapid movement of supplies could be effected only through decentralization, uniform procedures for the arms and services needed to be prescribed.[23]

The War Department published on 22 January 1942 a new standard operating procedure for supply and maintenance of oversea departments, theaters, and bases, which went into effect on 1 March 1942. The general plan provided that subsistence and gasoline and lubricants would be supplied automatically and that clothing and individual equipment, general supplies, and ammunition would be supplied on requisition. The Secretary of War was responsible for executing the plan. He approved oversea allowances, designated the ports from which departments, theaters, and bases were to be supplied; assigned to each port of embarkation a staff representative from each supply arm or service; determined intertheater priorities; provided water transportation as required; and announced policies for the guidance of port commanders. The Commanding General, Field Forces, recommended for the theaters under his control intertheater priorities for supply; he followed up requisitions for special needs; and submitted to the Adjutant General recommendations bearing upon the solution of supply problems reported by oversea commanders. The oversea department, theater, and base commanders effected distribution; submitted requisitions for clothing and individual equipment, general supplies, and ammunition; reported special needs, supply difficulties, and shortages and excesses of subsistence and gasoline and lubricants; recommended routings from the United States to oversea bases; developed local resources; and recommended strategic reserves. The commander of the port of embarkation controlled the flow of supplies; effected automatic supply of subsistence and gasoline and lubricants; filled requisitions for clothing, general supplies, and ammunition; recommended to the Assistant Chief of Staff, G-4, through the chiefs of supply arms and services, the minimum port reserves and the amounts of supplies that should be held in zone of the interior depots; submitted storage requirements; established a section for the administration of oversea supply, submitted recommendations to the Assistant Chief of Staff, G-4, concerning shipping and the facilities and funds necessary to accomplish the supply of the theaters; and edited requisitions in accordance with the allowances established by the War Department. The chiefs of services submitted recommendations to the Assistant Chief of Staff, G-4, concerning the amounts of supplies to be held in zone of the interior depots and concerning reserves to be held at ports; designated depots to serve theaters; stocked approved levels in zone of the interior depots; and notified port commanders when supplies were ready for movement to ports. Depots in the zone of the interior supplied ports in accordance with War Department instructions; reported immediately to the chiefs of services all requests that could not be met; and obtained shipping releases from port commanders prior to shipment to ports.[24]

After the reorganization of the Army on 9 March 1942, the directive setting up the new supply system was republished in order that its terminology might be brought up to date. Major responsibility was delegated to the War Department. The responsibilities assigned to the Commanding General, Field Forces, were transferred to the Commanding Generals of the Services of Supply and the Army Air Forces. In basic principle, however, the supply system was unchanged.[25]

Maximum decentralization was reached on 10 October 1942 when the functions of the War Department were limited to the determination of levels of supply, intertheater priorities, and the basis of supply for ammunition when the situation dictated.[26] By the fall of 1942 the policies for the supply of oversea theaters had been firmly established and an organization capable of carrying them out had been developed.

In May 1943 action was taken to regulate automatic supply. The War Department stated that the successful accomplishment of oversea supply depended upon accurate and up-to-date statistics and directed that three reports be submitted by each theater—a monthly materiel status report, a monthly automatic supply report, and a monthly ammunition supply report. Only the first two of these affected the program of the Quartermaster Service. The monthly materiel status report, which was prepared jointly by the ports and the theaters, listed the shortages in special purpose equipment. The automatic supply report, which was prepared by the

ports, covered subsistence, medical supplies, and gasoline and lubricants.[27]

On 20 September 1943 the War Department announced the end of automatic supply as the normal basis for supporting a theater. In its stead, three basic methods of supply were presented. The first method, automatic supply, would be used for newly activated theaters; the second method, semiautomatic supply, would be governed by the three reports set up in May; and the third method, supply by requisition only, put the theater on a requisition basis as soon as levels of supply could be stabilized.[28]

Under this plan the War Department was responsible for prescribing levels of supply, furnishing to the Army Service Forces the troop strengths for each command, and approving operational projects. The Commanding General, Army Service Forces, designated the port responsible for supplying each theater and announced policies by which port commanders would process requisitions. Oversea commanders effected storage and distribution of supplies, recommended to the War Department the equipment and supplies to accompany troops overseas, and reviewed and recommended levels of supply and replacement factors.[29] The theater commander, in turn, delegated to the chief quartermaster of the theater his power to exercise these controls over quartermaster supplies.

The War Department published the final policies for oversea supply on 23 May 1944. The three methods of supply and the monthly status reports were retained.[30] By this time the European Theater of Operations had reached maturity, and these reports not only controlled the semiautomatic method of supply but furnished statistical data for the requisitioning method that was later adopted.[31]

Several months after the oversea supply plan of 22 January 1942 had been in effect, the Services of Supply, War Department, was faced with the problem of developing competent port organizations. To meet this situation for the European Theater, the Director of Operations, Services of Supply, set up in August 1942 the Oversea Supply Division at the New York Port of Embarkation (NYPE). Its responsibilities included editing and processing requisitions, recording the status of supply in the European Theater and furnishing supply information and advice. While the ETO was on the automatic and semiautomatic methods of supply, the Oversea Supply Division initiated action for supplying the theater.[32]

The New York port drew supplies from depots on three bases—the materiel status report, requisitions from the theater for items not included in the materiel status report, and port-initiated requisitions. Materiel status report items were controlled items of special purpose equipment, such as laundry, clothing repair, textile repair, and shoe repair equipment; sterilization and bath trailers; fumigation chambers; and mobile field bath units. Non-materiel status report items consisted of supplies and equipment based on approved replacement factors, special issues authorized by the War Department, and items for special operational requirements.[33] The materiel status report served as the requisition for the quartermaster items of special purpose equipment that it covered. The Chief Quartermaster sent to the port formal requisitions for non-materiel status report items. In addition, the port might initiate requisitions for the shipment of supplies on the basis of requirements submitted by the theater to the port or on the basis of directives issued to the port by the War Department.[34]

In January 1945, G-4, ETOUSA, proposed that the European Theater be placed by 1 February wholly on a requisitioning basis—the third method. Supply action, however, that had been initiated before 31 January by materiel status reports and ammunition supply reports would be completed. Thereafter all supplies would be furnished on requisitions. The supply of the critical items previously referred to as materiel status report items would be furnished each month on a master requisition. Such interim requisitions might be made as were necessary to supplement the master requisition. A critical item report would take the place of the materiel status report. The supply divisions of the various services were requested to send to G-4 their comments on the proposal. The Quartermaster Service immediately sent its approval.[35]

The theater was not placed on a wholly requisitioning basis, however, until 12 March 1945.[36] Anticipating the directive from the War Department, the Communications Zone had issued instructions for standardizing requisitioning procedure for all supply services in the ETO. In line with the Communications Zone instructions, the Chief Quartermaster issued a directive setting up the new quartermaster procedure. Requisitions would be submitted monthly to the Assistant Chief of Staff, G-4, for review and transmittal to the New York port. Class I requisitions would

be made not later than the 1st of each month, and class II, III, and IV requisitions not later than the 15th of each month.[37]

On 9 April 1945, 1 month before VE-day, OCQM issued the final wartime instructions regarding the preparation of all quartermaster requisitions. Beginning on that date periodic maintenance requisitions were to list ETO requirements for both the United Kingdom and the Continent. The Military Planning Division was given the task of computing all requirements and preparing all requisitions. These computations were to be based upon manpower, levels of supply, and the stock position of all quartermaster items in the theater. The stock position was to be determined by adding quantities on hand to quantities due in. "On hand" quantities were those actually available in Continental depots, en route between depots, en route from ports to depots, en route between the United Kingdom and the Continent, or aboard ships in ETO waters. "Due in" quantities were those on outstanding requisitions and on demand from the French and British if firm delivery information had been given.

Separate requisitions would be submitted for perishable and nonperishable components of the ration, clothing, equipage, regular supplies, nurses' and WACs' sales store items, officers' sales store items, spare parts, packing and crating supplies, graves registration and effects items, supplies for prisoners of war, supplies for miscellaneous quartermaster units, and supplies procured for the Army Exchange Service. Class III requirements would be based upon the latest figure developed by the Petroleum and Fuels Division.

All requisitions would be consolidated by the Military Planning Division and forwarded to G-4 for review and transmittal to the New York port on the 20th of each month.[38] A diagram of oversea supply appears as appendix XXVI.

PROCO PROJECTS

Peacetime experience did not furnish a sound basis for determining requirements for items not authorized by Tables of Equipment or Tables of Allowances and for determining additional quantities of authorized items necessary to support military operations. World War I experience was outmoded. Therefore, an entirely new method had to be developed. During 1942 and the early months of 1943 several attempts were made to plan operational requirements for the North African and Southwest Pacific Theaters. This experience also proved to be unsatisfactory. Hence, in the spring of 1943, almost a year after the establishment of the SOS, ETOUSA, there was still need for a satisfactory system of providing stock piles for anticipated Continental operations.[39]

The War Department found the solution in June 1943 when it issued the scheme of "keyed projects." Initially, the purpose of these projects was the provision of supplies over and above those required in normal authorized allowances. Actually, the plan developed into a method by which all supplies needed to support specific operations were approved for immediate shipment to the theater.[40] On 4 June the War Department instructed oversea commanders to submit as "keyed projects" estimates of their future requirements.[41] When these instructions were received in the European Theater, the Theater Commander renamed the projects "priority Continental operations" (PROCO) and set up procedures to put the projects into effect.

First, the Theater Commander would submit PROCO projects to the War Department, attention Planning Division, ASF. After obtaining necessary staff approval, the ASF would proceed with procurement and stockpiling. Upon completion of War Department action, the project would be forwarded to NYPE. Finally, after the project had received War Department approval, the Theater Commander would send a requisition to NYPE.[42] Each project was submitted with a cover sheet carrying the name of the supply service, the project number, the subject, the basis of the project, tonnage requirements, administrative basis, and requisition number.[43] On 28 June 1943 the Commanding General, SOS, ETOUSA, suggested that requisitions for supplies accompany each project when submitted.[44] The War Department approved this suggestion on 25 July 1943.[45]

On 8 September the War Department clarified procedures governing PROCO projects. Keyed projects submitted to the War Department would be forwarded to Technical Services, ASF, for review and revision. All major changes would be cleared with the Theater Commander through technical channels. Finally, the approved project would be filed with the appropriate port of embarkation, and the theater would be given the authority to requisition against the project. Shipments would be made according to existing priorities and availability of supplies.[46]

The War Department, finding the first projects submitted by the ETO unsatisfactory, expressed the belief that the plan had been misinterpreted in the theater. The primary purpose of keyed projects was the determination of operational requirements of major and critical items, principally for the Engineer and Signal Services. Maintenance had been specifically excluded. Among the projects first submitted were many that were not of a major nature. Consequently, the War Department suggested that these be submitted through normal requisitioning channels.[47]

Major General Lee replied that the ETO had misunderstood the plan and that requisitions for exceptional issues would be submitted through normal channels and not as PROCO projects. He stated also that PROCO projects for the 1944 operational requirements of major and critical items had been submitted, principally for the Engineer and Signal Services. When major items were procured in the United Kingdom, the port would be informed in order that they might be deleted from projects. All projects submitted were for United States troops only and did not include British requirements for joint operations.[48] The War Department later instructed the ETO to disregard the earlier directive that excluded from PROCO projects requirements for exceptional issues of supplies for operations. All requirements for Continental operations were to be submitted as PROCO projects.[49]

For planning purposes the operation on the Continent was divided into three periods—D-day to D-plus-90-day, D-plus-91-day to D-plus-240-day, and D-plus-241-day to D-plus-360-day. Projects for the Continent would be submitted to coincide with operational developments during each period. On 17 April 1944, G-4 announced that no further projects would be submitted for the first period.[50] Subsequently, on 4 July 1944 the Chief Quartermaster reported that projects for the last two periods, D-plus-91-day to D-plus-360-day, were to be completed not later than 31 August 1944.[51]

The PROCO projects for the second and third periods were developed as a part of the planning directives issued by the Communications Zone. Series I, directives of which appeared from 20 June to 1 December 1944, dealt with Continental operation after hostilities (see ch. 1). These directives stated that PROCO projects should be submitted to meet requirements for the support of United States forces in Germany, for civilian needs, for mounting troops being redeployed to the United States or other theaters, and for establishing processing centers for captured enemy material, enemy prisoners of war, recovered Allied military personnel, and displaced persons.

Series K, published between 5 March and 10 May 1945, was the Communications Zone section of the ECLIPSE plan. These directives demanded that PROCO projects be developed to cover probable requirements for supplies, services, and facilities needed by American forces during the initial stages of the occupation of Germany. Series L, published on 1 August 1945, rescinded all other planning series. It covered the period from the establishment of the United States Forces in the European Theater to the consolidation of the Mediterranean and the European Theaters in December 1945. The supply services were asked to submit projected requirements for the expansion of occupational areas to include Austria and for the operation and closing of the additional storage areas and facilities that would be absorbed upon consolidation of the two theaters. (see ch. 1.)

The Quartermaster Service submitted more than 70 PROCO projects, which furnished approximately 853,000 long tons of supplies used in Continental operations. Thirty-six of these projects were placed prior to February 1944 for planned operations on the Continent, and the others were submitted at the end of the invasion period in accordance with the directives for post-OVERLORD planning.[52]

PRIORITIES AND ALLOCATIONS

In December 1942 the Commanding General, SOS, ETOUSA, was convinced that the shortage of shipping space and constantly increasing demands for supply precluded the indiscriminate loading of ships. He suggested, therefore, that a system be established for the control of ship tonnages and priorities between the New York Port of Embarkation and the European Theater. On the 25th of each month the theater would send to the New York port a forecast of shipping requirements for the next 4 months. In reply, the New York port would send to the theater a forecast of tonnages available during each of these months. Within 2 weeks after units departed for the United Kingdom the New York port would allocate tonnages for their Table of Basic Allowances equipment and deduct the amount from the total

European Theater requirement. The Commanding General, SOS, ETOUSA, would allocate tonnages to each service for each of the succeeding 4 months.[53] On 10 January 1943 this proposal was dispatched to the New York port. On 5 February NYPE replied that the suggestion was being given thorough consideration and on 16 April 1943 reported approval. Three days later G-4 directed that the plan be put into effect.[54]

The chiefs of supply services were asked to provide monthly estimates of tonnages needed for maintenance, reserve, and operational supplies. These estimates were to be based upon monthly reports of anticipated troop arrivals furnished by G-1. G-4 would consolidate the requirements of the services and forward them to NYPE and, based upon NYPE's reply of space available, would allocate tonnage blocks to each service.[55]

The War Department established three types of priorities to govern shipments from the United States. The first, a time priority, required shipment of specific items within a given period or by a certain date. The second, a type priority, required shipment of specific items. The third, a shipment priority, required a shipment or a series of shipments for the support of an operation.[56]

Subsequently, G-4 sent NYPE the following list of shipment priorities for June 1943:

First priority—Air force incendiary bombs.
Second priority—All other ammunition.
Third priority—T/BA equipment for units being shipped to the ETO.
Fourth priority—Air force technical supplies.
Fifth priority—Current requisitions for consumption and reserve supplies.
Sixth priority—Backlog of supplies and equipment on requisition.
Seventh priority—Bulk shipment of T/BA equipment including vehicles.
Eighth priority—Operational supplies and equipment (for cross-channel operations).[57]

The original plan for forecasting tonnage was changed when a new procedure for shipping supplies to the United Kingdom was published in May 1943. The December plan had not provided for the allocation of space to ship Table of Basic Allowances equipment, vehicles, and billet steel. The new plan stated, however, that these supplies would compose the major portion of shipping for the rest of 1943. Because all such supplies were needed in June to build up reserves for July, G-4 stated that they should be given fifth priority.[58]

On 17 April 1944, little more than a month after the Forward Echelon of the Communications Zone (FECZ) was created, the Theater Commander revised the entire procedure. Only three types of priorities were to be used: priority I, covering absolutely essential items; priority II, covering less essential items on shipping orders or in balanced cargos; and priority III, covering the least essential of all required supplies. Bids for cargo space and commodity-loaded ships would be forwarded to G-4 45 days before the first of the month of loading. G-4 would also make tonnage allocations, which would be based upon shipping information received from NYPE. The chiefs of services would then adjust priority lists, or bids, to meet their final tonnage allocations. All bids for priority I space would be made according to a "predetermination of need" furnished by service representatives in FECZ.[59]

On 10 May 1944 the Chief of the Executive Division, OCQM, outlined the procedure governing the Quartermaster Service in the preparation of requests for priorities and allocations. By the 12th of each month the divisions making requisitions on the New York port would submit to the Stock Control Branch an estimate of tonnage to be lifted during the following month. The bids from each division would include the priority requested. These priorities were set up to conform with the theater priorities. Priority I would be used for items that were critical and that needed special handling. Priority II would be used for supplies for consumption, replacement, and level build-up during the designated month. Priority III would be used for items that were desirable but not essential for shipment during the month. When all the requests for tonnage had been received, the Stock Control Branch and division chiefs would establish the bid for tonnage allocation and the request for shipping priorities and present them to G-4, ETOUSA. When the allocation was determined, the Stock Control Branch and division chiefs would make necessary adjustments. The lists would then be forwarded to NYPE by cablegram or air courier. Because the tonnage allocation to be lifted would be limited, any increase in tonnage could be made only by the Stock Control Branch.[60]

The system was not changed for almost 6 months. Then, on 20 August 1944, as the armies were approaching the outskirts of Paris, the Theater Commander again re-

vised the priority system. Henceforth priority I lists would be limited to 50 items. Any questionable items would be screened out by G-4. Lists would not include such items as spare parts, advance-shipped initial equipment, construction materials, and generating units. Priority II lists would be limited to 15 requisitions or shipping orders. The Commanding General, NYPE, agreed that supplies on priority II requisitions would be expedited and would usually be loaded on ships carrying priority I material. Priority III would cover the rest of the tonnage allocated by G-4. A new classification, priority IV, was added to include all supplies not designated in any other category. These items would be loaded if space was available. The procedure for preparing priority lists was also amended. Priority I and priority II requisitions would be forwarded by cable. Priority III and priority IV requisitions would be forwarded by air couriers. Subsequent requests for changes in priorities would be made by teletype from the supply service to the New York port. Because a definite priority would be assigned to each request, any late additions to the lists would force other items to be shipped on a lower priority.[61]

Throughout the next 3 months division chiefs of OCQM questioned the advisability of limiting the number of requisitions in the first two priority categories. Consequently, in a teletype conference with NYPE on 13 November 1944 the Chief Quartermaster suggested an increase in the number of requisitions being handled under priority II. The New York port did not concur, because any increase in the number of requisitions to be handled in priority II would tend to defeat the special handling given to these requisitions. Moreover, the shortage of shipping and the volume of priority supplies requested by the ETO made impracticable any attempt to increase the tonnage being given preferential handling. NYPE pointed out that it was not necessary to re-requisition supplies, since once an item was placed in priority I it remained in that priority until the shipment was completed or the theater requested that the priority be lowered.[62]

This general plan of shipping continued throughout the European campaign. Although in actual operation the priorities were changed from time to time, variations were based upon the principle that the Theater Commander controlled and prescribed the priorities.

MOVEMENT PLANNING

The procedures for preparing and submitting requirements for supplies needed on the Continent during the first 90 days of the invasion were published on 5 April 1944. For planning purposes the first 90 days were broken down into three periods: D-day through D - plus - 14 - day, D - plus - 15 - day through D-plus-40-day, and D-plus-41-day through D-plus-90-day. The chiefs of services were to make detailed calculations of requirements and submit them to the agency responsible for assembling them for each period. The First Army would be the assembling agency for the first period, ADSEC for the second period, and FECZ for the third.[63]

On 6 May 1944, 1 month before D-day, the Commanding General, SOS, ETOUSA, prescribed the plan for the movement of supplies for OVERLORD. This plan was developed to insure the movement of supplies to the Continent in accordance with requirements, to provide for loading in the early stages of the operation, to insure the movement of supplies to ports, and to establish procedures for port operations. The requisitioning procedures set forth in the April plan were restated, and a fourth period of supply was added.

The Commanding General, SOS, ETOUSA, was responsible for the movement of all American personnel, vehicles, and supplies. Base section commanders were charged with all details of movement and handling of supplies within their base sections. The Chief of Transportation was responsible for loading and dispatching vessels. Once ships were loaded, their delivery to proper destinations was the responsibility of turn-around control (TURCO). If diversion was directed to other areas of discharge, changes in sailing instructions would be sent through build-up control (BUCO). (See ch. 1.)

During the first period, coasting vessels, carrying from 200 to 2,500 long tons, would handle the major portion of the supplies. These ships would be preloaded with mixed cargo 21 days before the invasion. During the second period, Liberty ships and other large vessels would be used in addition to coaster vessels. Loadings for this period would begin on D-minus-7-day and extend through D-plus-11-day. These would be limited balanced loads designed to meet daily requirements. During the third period, greater use would be made of ocean-going ships direct from the United

States and the United Kingdom. These ships would be loaded with balanced or mixed cargoes from D-plus-11-day to D-plus-31-day. During the fourth period, ocean-going ships from the United States would be supplemented by a reduced coaster fleet from the United Kingdom. Loadings to meet stipulated requirements would begin on D-plus-32-day and continue through D-plus-80-day.[64]

On 27 January 1944 the Chief of the Plans and Training Division estimated that 244,217 long tons of quartermaster supplies would be required on the Continent by D-plus-90-day. Subsequently, in line with the general movement instructions for OVERLORD G-4 reported that the quartermaster requirement was 721,373 long tons. This total was made up of 401,817 long tons from the United Kingdom and 319,556 long tons from the United States.[65]

PACKING, CRATING, AND MARKING

Plans for the assault period of the Continental operation took into account the certainty that supplies would have to be handled by men and not by machines and that during the early stages open storage on the beaches would be the rule and not the exception. Consequently, methods of packing, crating, and marking were of primary importance.

Brigadier General Littlejohn, soon after his arrival in the European Theater, entered upon a campaign to improve methods of packing and marking supplies shipped from the United States.[66] A year later he was still complaining that poor marking made the identification of supplies difficult. Boxes and crates, he said, were frequently so covered with stock numbers, contract numbers, and other markings that they had to be opened before the nature of their contents could be discovered. Other packages had so much information on them that they could not be sorted by the almost illiterate civilian laborers who sometimes handled them. The Chief Quartermaster's plea was for clear and simple markings.[67] The Quartermaster General replied that marking specifications would be enforced.[68]

In an effort to improve the methods of packing, crating, and marking organizational equipment and supplies for oversea shipment, the Commanding General, SOS, ETOUSA, had instructed the Chief of Transportation and the base section commanders in November 1942 to organize specially trained mobile squads for the purpose of conducting demonstrations. He had also requested that troops in the various commands be taught the importance of proper packing, crating, and marking in order that their cooperation in the educational program might be obtained.[69]

In May 1943, when COSSAC was working on the first plan for operation OVERLORD, with D-day set for the spring of 1944, Major General Lee requested the New York port "to make certain that all materials normally accompanying task forces" be packed in units of not more than 100 pounds gross weight. This type of packing would eliminate the necessity for repacking in the European Theater, where both men and materials were "in short supply." He hoped to receive in 100-pound units a substantial portion of the materials requisitioned by the theater. These would be held in the United Kingdom and would not be opened until they reached the Continent. Supplies that were susceptible to moisture damage were to be waterproofed, and their containers were to be strong enough to withstand the hazards of open storage.[70]

Subsequently many improvements were effected in packing, crating, and marking. Skids and pallets were used to facilitate handling of supplies. Pallets are small platforms with openings for the prongs of fork lift trucks. Skids are pallets fitted with sled-like runners. According to the palletized load plan of the Army Service Forces, items were strapped securely on skids or pallets so that they might be handled as a unit. During the assault, loaded skids could be dragged onto beaches by hand.[71] Though this type of loading would facilitate the segregation of supplies on the beaches and would lessen breakage and pilferage, it was expensive and impracticable except on those transports that were equipped with large doors and hatches. In addition, specially trained men were required to handle skid- or pallet-loaded supplies.[72]

In order to facilitate the shipping of thousands of tons of supplies to the proper destinations overseas, various systems of marking were initiated. The UGLY system, which the War Department proposed on 26 July 1942, was one of the early methods of requisitioning and assigning code combinations to oversea shipments. The purpose of this system was to provide the oversea commander with information as to the specific loads on each vessel proceeding to his command. The code word UGLY designated shipments from the New

York Port of Embarkation to the United Kingdom. On oversea addresses it was followed by a symbol designating the date of shipment, the abbreviated name of the using service, Roman numerals indicating the class of supply being shipped, and the requisitioning series and number. The markings on the shipments and the requisitions were identical. For instance, UGLY-F-QM II—T89 meant that quartermaster class II supplies requested on requisition number T89 would be shipped to the United Kingdom during shipping cycle F.[73] When shipments began to be made direct to the Continent, HAIL was substituted for UGLY. When shipping was stabilized, markings were used to identify ports. For example, WIPE, which stood for Antwerp, or LEGS, which stood for Le Havre, was added to the address.[74]

In addition to this documentation, each shipper forwarded to the port of embarkation six copies of the shipping ticket, which indicated the exact items that had been shipped against each requisition. The port forwarded two of these to the oversea commander by officer air courier. Finally, the port sent to the oversea commander a copy of the ship's manifest and a cargo loading cable, identifying specific shipping tickets.[75]

The Assistant Chief of Staff for Operations, ASF, wrote the Commanding General, SOS, ETOUSA, on 6 March 1943 that the UGLY system, although elaborate and complete, did not seem to him to be feasible.[76] The Chief Quartermaster replied that he did not like the UGLY system either. In the first place, shipping tickets delivered by air couriers might not reach their destinations in time for proper distribution. In the second place, no description other than the number of the shipping ticket was to be given in the cargo loading cable. Thus, if the shipping tickets failed to arrive, there would be no way to determine the items aboard ship. Finally, a material increase in clerical personnel would be required to handle the shipping tickets both at the port of embarkation and in the European Theater. Therefore, he recommended an alternate system of marking. Every case of supplies would contain the code name of the destination, the abbreviated name of the using service, the type of supplies, and the requisition number. The cargo loading cable would contain the same information as that marked on the cases and, in addition, a detailed description of contents and weight.[77]

Nevertheless, on 23 March 1943 the War Department activated part of the UGLY system. Ports of embarkation were made responsible for preparing the ships' manifests.[78] Copies of the manifests were delivered by air couriers. Every requisition initiated overseas—whether sent by mail, cable, or radio—was identified by a serial letter and number of not more than three digits. Numbers would be assigned in blocks to services as follows:

1— 99	Quartermaster Corps
100—199	Transportation Corps
200—299	Medical Department
300—399	Ordnance Department
400—499	Corps of Engineers
500—599	Army Air Forces
600—699	Signal Corps
700—799	Chemical Warfare Service
800—899	Army Exchange Service
900—999	Special Services Branch [79]

By June 1943, a year before D-day, the entire UGLY system was in effect [80] and was continued throughout the war.

The marking of boxes and skid loads with luminous lettering was developed in OCQM to expedite identification of supplies moved at night. When the 10-in-1 rations were being made ready for shipment during the first days of the Continental operation, menu numbers were written on the boxes with luminous paint. Cases were loaded on skids and covered with waterproofed duck. Each skid load was marked with 1-inch luminous tape, formed into letters about 5 inches high and pasted onto the duck covering. It was found that the tape on loads thus marked was not loosened even when supplies were stored outdoors in "English weather" for as long as a week.[81]

SHIPMENTS FROM THE UNITED STATES

On 8 December 1943 the Chief of Operations, SOS, ETOUSA, notified the Chief Quartermaster that a conference would be held with the Chief of Transportation to discuss the type loading of cargo ships.[82] At the meeting held 2 days later the Chief of Transportation stated that he would be called upon to move at least a million and a half tons of

supplies each month during the first 6 months of 1944. He suggested, therefore, that each service prepare a plan whereby certain supplies could be block-stowed at the New York port and shipped direct to the Continent.[83]

The block-stowing, or type-loading system was defined at another conference held a week later. Each service would develop its own block, or brick, of supplies weighing from 100 to 500 long tons and containing a balanced stock of items for a given number of men for a given period of time. Bricks from two or more services would be loaded on the same vessel so that the loss of any one vessel would not have too great an effect upon the supplies of any one service. In order to prevent unloading portions of bricks when bulk cargoes reached the United Kingdom, bricks would be marked in such a manner that they would not be confused with supplies for other projects. The bricks for one supply service would be loaded separate from the bricks of other supply services to avoid mingling during unloading on the Continent. Type loading would eliminate four handlings in the United Kingdom—unloading at ports, unloading at depots, reloading at depots, and outloading at ports.[84]

The Deputy Chief Quartermaster estimated on 4 January 1944 that 158,500 long tons of supplies could be type loaded for the period between D-day and D-plus-90 day. The following table shows the quantity of quartermaster supplies scheduled for type loading in 500-long-ton bricks during the first 3 months of the Continental operation:

	Class I (*Long tons*)	Class II (*Long tons*)	Total* (*Long tons*)
D-day to D+30	**	(4,500)***	(4,500)***
D+31 to D+60	60,000	8,500	68,500
D+61 to D+90	80,000	10,000	90,000
Total	140,000	18,500***	158,500***

*No class III supplies were included because stock piles of packaged oils and greases were being built up in the United Kingdom for the period through D-plus-90-day. Petrol was provided from pool stocks in the United Kingdom.

**All class I supplies for this period were being stock-piled in the United Kingdom.

***Stocks from the United Kingdom level of supplies were used to meet requirements for this period. The inclusion of this 4,500 tons in a plan for direct receipt on the Continent was optimistic and, therefore, they were not included in the total. If the situation permitted, however, part of this was to go direct to the Continent.[85]

On 21 January 1944 the Commanding, SOS, ETOUSA, pointed out the advantages of sending type-loaded supplies to the Continent and asked NYPE's approval of the system.[86] NYPE concurred on 3 February and requested that quartermaster requirements for type loading be forwarded immediately.[87] Consequently, on 8 February OCQM informed NYPE that 140 bricks of class I supplies and 46 bricks of class II and IV supplies would be required by D-plus-90-day. Each class I brick would weigh 500 long tons and contain enough operational rations for 21,000 men for 10 days. Each class II and IV brick would weigh approximately 626 long tons and contain enough supplies for 50,000 men for 30 days.[88] (See vol. II, app. X.)

SHIPMENTS FROM THE UNITED KINGDOM

Bolero culminated on D-day. A month later RHUMBA was initiated. The Commanding General, Communications Zone, stated the purpose of the RHUMBA program as the gradual reduction of supplies in the United Kingdom by regularly scheduled shipments to the Continent. After 1 September 1944 the quartermaster monthly tonnage allocation would be 62,000 long tons, approximately 2,000 long tons daily.[89] A week later the Chief Quartermaster set forth the goal that the OCQM intended to reach in reducing stocks in the United Kingdom. He reported that 188,078 long tons of quartermaster supplies were due in from the United States by 1 August 1944, approximately 20,000 long tons of which would be delivered eventually to the Continent. He also reported that another 188,357 long tons of supplies were expected to materialize from local procurement. This entire amount was intended for Continental delivery. The maximum quantity that could be shipped to the Continent during the period from 1 August to 31 December 1944 was 300,000 long tons. Off-loading and shipping limitations within the United Kingdom and on the Continent permitted 53,000 long tons to be shipped in August; the 62,000 long tons prescribed by the Commanding General, Communications Zone, would apply thereafter. The Chief Quartermaster concluded his report by saying that 361,235 long tons of supplies should be set up for delivery to the Continent by the end of the year.[90]

Later he pointed out that 438,404 long tons of supplies would have to be moved from the United Kingdom by the end of December to meet Continental requirements and requested that the quartermaster tonnage allocation be increased.[91] On 8 October 1944 G-4 agreed

that the tonnages should be increased and allocated 88,000 long tons to the Quartermaster Service on the November lift.[92]

In the meantime OCQM had attempted to operate with the smaller allocation. On 9 September 1944 the Quartermaster, United Kingdom Base, stated that 15,000 long tons of supplies were shipped to the Continent during the week ending 8 September. Although this was slightly over the 2,000-long-ton daily allocation, the excess supplies were composed largely of gasoline and food for civil affairs, which did not apply against RHUMBA planning.[93]

On 31 October 1944, a day before increased shipments from the United Kingdom began, the Chief of the Storage and Distribution Division reported that from June to the end of October, 464,305 long tons of quartermaster supplies had been received on the Continent from the United Kingdom.[94] After having given the Chief Quartermaster an increased allocation for November, G-4 found that increased demands for more vitally needed supplies to support the armies pushing into Germany would force a general reduction in allocations for all services and a reduction of the quartermaster allocation to 77,000 long tons. Several days later, however, G-4 decided that this allocation was still too high and reduced it to 47,000 long tons.[95] On 19 December 1944 the Chief Quartermaster informed G-4 that this allocation was less than the absolute minimum he required. He pointed out that from 1 September to 9 December 1944, the Quartermaster Service shipped almost 225,000 long tons from depots in the United Kingdom. This was approximately 36 percent of the total tonnage moved by all services. The allocation of 47,000 long tons for December was only 23 percent of the total allocation to all services. The Chief Quartermaster went on to say that the quartermaster allocation had not been sufficient since shipments from the United Kingdom began and that this condition would continue unless he was given an allocation of 94,000 long tons monthly.[96] On 27 December 1944 the Chief of the Military Planning Division reported that G-4 had increased the quartermaster allocation to 70,000 long tons monthly, beginning 1 January 1945.[97] In his report of operations for the month of February 1945, the Quartermaster, United Kingdom Base, wrote that the Quartermaster Service had been allocated 93,400 long tons for water shipment to the Continent during February. This increase of more than 20,000 long tons was in line with the general increase of activities in the United Kingdom Base. Southampton was named the port of movement for subsistence supplies to the Continent. These supplies were moved by coaster, and most of them were discharged at Rouen. Clothing and equipage moved out of Avonmouth in the Bristol Channel; petroleum and fuels moved out of Poole and Port Talbot.[98] In March 1945 the Quartermaster Service had an allocation of 94,000 long tons. It moved 125,336 long tons, however.[99] During April 1945, the Quartermaster Service was allocated 79,500 long tons and moved 95,690 long tons. During the month of May 1945, the Quartermaster Service moved 93,976 long tons.[100]

On 1 September, almost 2 weeks after the Communications Zone moved to Normandy, OCQM published the procedures for submitting tonnage allocations for shipments from the United Kingdom to the Continent. Based upon the tonnage allocations from G-4, Communications Zone, the Plans and Training Division would make biweekly tonnage and priority allocations to the operating divisions, which in turn would submit to the Storage and Distribution Division the quantities they desired. The Storage and Distribution Division would consolidate requirements and forward them to the Quartermaster, United Kingdom Base. This division was also responsible for establishing priorities and ports of discharge for vessels arriving from the United Kingdom. Requisitions would be placed upon the United Kingdom Base only for those supplies to be shipped by motor express (RED BALL) or by air express or for those supplies locally procured in the British Isles.[101] These policies remained in effect for the next 3 months.

The Chief Quartermaster issued on 6 December 1944 new procedures governing shipments from the United Kingdom to the Continent. Thereafter, supplies would be shipped from the United Kingdom on the basis of requirements prepared and submitted by OCQM to the Quartermaster, United Kingdom Base. Distribution directives (DD's) would be projected 30 days in advance. Cargo designated for lift from the United Kingdom would be actually required on the Continent and would not be lifted for the purpose of closing out depots or transferring supplies for storage. The December directive did not change the functions of the Plans and Training Division, the Storage and Distribution Division, and the operating divisions. Items could not be

requisitioned, however, if their withdrawal would reduce the level of supply in the United Kingdom below 45 days. The Quartermaster, United Kingdom Base, would edit priority lists against depot reports. He would then take action to have cargo shipped according to priority and report to OCQM all supplies shipped from depots during the past 24 hours. He would also submit three times monthly a report showing the tonnage shipped from depots during the preceding 10 days. The Quartermaster, United Kingdom Base, would determine whether a distribution directive should cover one item or a group of related items. Generally, these directives would be prepared for a minimum number of items and never, except in the case of petrols, would call for the shipment of more than 200 long tons. Petrol, oil, and lubricants could be set up in lots of 400 long tons. Related items such as spare parts, could be grouped and set up on one distribution directive. Individual items that might become critical would be set up alone in order to make rapid delivery possible and to preclude the necessity of canceling them on distribution directives when they were no longer needed.[102]

The supply of the Continent by air from the United Kingdom began after the fall of Paris and continued throughout September and October 1944, the most fluid period of the European campaign. On 9 September the Quartermaster, United Kingdom Base, informed the Chief Quartermaster that an air lift of MT 80 gasoline had been set up for the Third Army.[103] A week later, the Chief Quartermaster directed the Quartermaster, United Kingdom Base, to set up a daily air lift of 10 tons of sales store items.[104] The air-lift program continued to expand throughout the next 6 months. The Quartermaster, United Kingdom Base, reported that approximately 554 long tons of supplies were flown during February 1945.[105] The expanded air-lift program ended on 1 March 1945; yet G-4 notified the Quartermaster, United Kingdom Base, on 25 March that gasoline would be flown to the Continent as soon as airfields were available. Eighty plane loads took off 4 days later.[106] By April, one-third of the 1,500 tons of supplies flown to France was MT 80 gasoline.[107] Though air tonnage decreased in volume after VE-day, during May, 459 long tons were delivered to the Continent by air.[108]

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34 Quartermaster Procedure Governing Requisitioning, Shipments, Allocation of Tonnages, & Assignment of Priorities, OCQM, 1 March 1945.
35 Memorandum, G-4, SOS, ETOUSA, to Quarter-Master Service, 22 January 1945 with indorsement, DCQM to G-4, SOS, ETOUSA, 23 January 1945.
36 Cablegram WARX-51991, AGWAR to ETOUSA, 12 March 1945.

[37] Directive No. 15, OCQM to UK Base, 10 March 1945.

[38] Requisitioning Directive No. 17, OCQM, 9 April 1945.

[39] See note 3, *supra*, p. 213.

[40] See note 3, *supra*, p. 216.

[41] Cablegram R-9131, AGWAR to USSOS, 4 June 1943.

[42] See note 3, *supra*, 213-223.

[43] Letters, SOS, ETOUSA, to chiefs of all services, 24 June 1943, 9 July 1943, and 12 July 1943.

[44] Cablegram W-1201, USSOS to AGWAR, 28 June 1943.

[45] Cablegram R-514, AGWAR to ETOUSA, 25 July 1943.

[46] Letter, AG 381 (12 August 1943) MGD, 12 August 1943, with 1st indorsement, SPOPP, ASF, 8 September 1943.

[47] Cablegram R-3290, AGWAR to ETOUSA, 19 September 1943.

[48] Cablegram W-7780, USSOS to AGWAR, 27 September 1943.

[49] Cablegram R-4209, AGWAR to USSOS, 10 October 1943.

[50] Memorandum, G-4, ETOUSA, to chiefs of all services, 17 April 1944.

[51] Memorandum, CQM to G-4, ETOUSA, 4 July 1944.

[52] Operational Study No. 18, OTCQM, 15 November 1945. p. 6.

[53] Letter, CG, SOS, ETOUSA, to CG, 8th Air Force, 31 December 1942.

[54] Memorandum, G-4, SOS, ETOUSA, to AG, SOS, ETOUSA, 19 April 1943.

[55] Letter, AG 523.07 MGD, ETOUSA, 3 May 1943.

[56] See note 3, *supra*, p. 195.

[57] Cablegram K-997, ETOUSA to PEMBARK, 24 May 1943.

[58] Memorandum, G-4, SOS, ETOUSA, to CG, SOS, ETOUSA, 9 June 1943.

[59] Letter, AG 400.62 OpGD, SOS, ETOUSA, 17 April 1944.

[60] Memorandum, Q-X 523.07, OCQM, 10 May 1944.

[61] Letter, AG 700.62, ETOUSA, 20 August 1944.

[62] TWX conference, NYPE and OCQM, 13 November 1944.

[63] Letter, AG 400.32, OpGD, ETOUSA, 5 April 1944.

[64] Operation OVERLORD Supply Movement (US) Instructions, SOS, ETOUSA, 6 May 1944.

[65] Memorandum, S-4959, G-4, to chiefs of supply services, 16 May 1944.

[66] Letter, CQM to QMG, 13 June 1942.

[67] Letter, CQM to QMG, 24 June 1943.

[68] Letter, QMG to CQM, 9 July 1943.

[69] Letter, AG 400.16 (20 November 1942), CG, SOS, ETOUSA, to commanders, all organizations and installations, *et al.*, 24 November 1942.

[70] Cablegram WX-29, USSOS to AGWAR, 19 May 1943.

[71] Letter, Assistant Chief of Operations, ASF, to CG, SOS, ETOUSA, 14 May 1943.

[72] Report, Test Loading and Landing of Palletized Supplies, Amphibious Training Command, Atlantic Fleet, 19 November 1943.

[73] Directive, WD to CG, NYPE, chiefs of services, *et al.*, 23 December 1942.

[74] See note 34, *supra*.

[75] See note 73, *supra*.

[76] Letter, Assistant Chief of Staff for operations, ASF, to CG, SOS, ETOUSA, 6 March 1943.

[77] Memorandum, CQM to G-4, 26 March 1943.

[78] WD Letter, AG 400.161, 23 March 1943.

[79] *Ibid.*

[80] Memorandum, Chief of Services to CQM, 6 June 1943.

[81] Letter, CQM to QMG, 21 March 1944.

[82] Memorandum, Chief of Operations, SOS, ETOUSA, to CQM, 8 December 1943.

[83] Memorandum, Chief, Plans and Training Division, to CQM, 12 December 1943.

[84] Memorandum, Chief, Plans and Training Division, to DCQM, 21 December 1943.

[85] Memorandum, DCQM to COT, 4 January 1944.

[86] Letter, CG, SOS, ETOUSA, to CG, NYPE, 21 January 1944.

[87] Cablegram NYO-190-L-91, NYPE to ETOUSA, 3 February 1944.

[88] Cablegram KN 548, SOS QM to PEMBARK, 8 February 1944.

[89] Letter, AG 400, OpGD, 8 August 1944.

[90] Memorandum, CQM to DCQM, 17 August 1944.

[91] Memorandum, CQM to CG, Com Z, 29 August 1944.

[92] TWX, UK 11246, G-4, UK Base, to G-4, Com Z, 8 October 1944.

[93] Letter, QM, UK Base, to CQM, 9 September 1944.

[94] Report, Chief, Storage and Distribution Division, to CQM, 31 October 1944.

[95] Cablegram EX-71977, G-4, Com Z, to G-4, UK Base, 8 December 1944.

[96] Memorandum, CQM to G-4, Com Z, 19 December 1944.

[97] Memorandum, Chief, Military Planning Division, to Chief, Storage and Distribution Division, 27 December 1944.

[98] Historical Report, Office of the Quartermaster, UK Base, 1 February to 28 February 1945.

[99] *Ibid.*, 1 March to 30 March 1945.

[100] *Ibid.*, April 1945 and May 1945.

[101] OCQM Memorandum No. 13, 1 September 1944.

[102] Circular, Q-MP 400, OCQM, 6 December 1944.

[103] Letter, UK Base, to CQM, 9 September 1944.

[104] Letter, CQM, UK Base, 15 September 1944.

[105] See note 98, *supra*.

[106] *Ibid.*, March 1945.

[107] *Ibid.*, April 1945.

[108] *Ibid.*, May 1945.

CHAPTER 5

STORAGE AND DISTRIBUTION

All the years of scientific research resulting in the development of the 70,000 quartermaster items of World War II would have represented wasted time and thought if the storage and distribution program had failed. The supply task of the European Theater of Operations was greater than any other in the history of warfare. Stock piles in the bomb-wrecked and overcrowded United Kingdom had to be built up to support troops during an indefinite period of waiting and during a more indefinite period of operations on the Continent. There, supply trains behind the lines could not be protected from enemy fire; living off the country would no longer be possible; and providing for the civilian population of liberated countries would add a new military responsibility.

A German general was quoted as saying, "The blitzkrieg is paradise for the tactician but hell for the quartermaster." Ernie Pyle, writing from Europe, changed the metaphor by describing the Continental operations as "a tactician's hell and a quartermaster's purgatory." He attributed American victory to the quantity of our weapons and to our soldiers' vigor, youth, and fine health, which were "cared for so exactingly" by physicians and quartermasters. Reaching the coast of Normandy on D-plus-1-day, he saw mined ships, submerged tanks, overturned boats, burned trucks, shell-shattered jeeps, and personal odds and ends—valueless small things that had been loved a while and lost. Lying to off the beaches were ships loaded with food and other supplies. Weary service troops were toiling to clear the wreckage in order that more men and more supplies might be unloaded. All that had been expended could be replaced over and over, for months of training and months of planning had gone into the logistics of the greatest war of all time.

BOLERO

Provision of storage space for the great volume of supplies that would be required for maintenance of troops in the United Kingdom and for Continental operations was one of the major tasks confronting the BOLERO Combined Committee at the beginning of its organization.

Over-all Planning

In the first edition of the BOLERO Key Plan, which was published on 31 May 1942, depots and other installations needed by the Services of Supply, USAFBI, were considered under two main headings: those that would meet ROUNDUP requirements, based on a 60-day level of supply, and those that would meet BOLERO requirements, based on a 75-day level. In rear areas 3,066,000 square feet would be required for reserve holdings. The Quartermaster Service would need 1,800,000 square feet of this space. The amounts that were then available or could be constructed were roughly estimated.[1]

Subsequently, estimates of requirements and available space were revised. The second edition of the BOLERO Key Plan, published on 25 July 1942, hopefully predicted that United States requirements could be met by installations under the control of the British Southern Command, by buildings under control of Board of Trade, and by new buildings that could be constructed in the near future.[2]

In the third edition of the BOLERO Key Plan, which was published on 11 November 1942, storage requirements for United States forces were estimated at 13,750,000 square feet. The British could provide 9,950,000 square feet in existing installations and would contruct new installations with storage space of approximately 3,800,000 square feet. For the estimated open storage requirements of 26,000,000 square feet, the British would be able to provide cleared, hard-surface ground known as "hard standings" or "hards."[3]

In the fourth edition of the BOLERO Key Plan, published on 12 July 1943, the United States estimate of covered space requirements had increased to 18,000,000 square feet and the open space requirements to 27,800,000 square feet. The British would provide the space as needed throughout their Southern, Eastern, Northern, and Scottish Commands, and the London District. When this key plan was published, however, 4,437,000 square feet of the estimated covered space requirements and 10,208,000 square feet of the estimated open space requirements had not been constructed.[4]

No estimate of space requirements for petroleum or oil appeared in the first edition of the plan. When the second edition was being prepared, calculations of the quantities to be held in bulk or in containers had not been completed. A vague plan was outlined, however, for a reserve to be held for United States operational units on the scale provided for British units with an operational role. The third edition of the plan provided that, until United States Army depots could be established, United States Army units (other than Air Forces units stationed at British airdromes) would obtain their bulk supplies through the officer in charge of supplies, Royal Army Supply Corps. Packed petroleum and lubricants would be drawn from the nearest command supply depot or retail issue depot. United States Army Air Forces units stationed at British airdromes would draw gasoline and lubricants from the Royal Air Force. If necessary, United States vehicles would draw petroleum from British pumps. The fourth edition of the BOLERO Key Plan provided for 1,275,000 square feet of space, sufficient to store 175,000 tons of petroleum and 3,000,000 gallons of lubricants. By that time, more than a year in the United Kingdom had furnished United States forces experience upon which to base their estimates of future needs.

In June 1942, when large contingents of American troops were being directed to England and when Northern Ireland had become only a transit area, computations of space requirements were based entirely upon World War I figures.[5] On 17 June 1942, 9 days after the establishment of the European Theater of Operations, an inspection party set out from Services of Supply headquarters in London to explore the possibilities of obtaining storage space. The report submitted on 23 June was far from encouraging. Many of the installations visited were inconveniently situated, old, and incapable of expansion. Clearly, much work had to be done before supplies for a full BOLERO program could be stored.[6]

The day that the inspection party made its report, the Director of Operations, SOS, ETOUSA, expressed the fear that the amount of cargo expected in the United Kingdom during the next few months would cause congestion of ports and rail lines. In order to expedite clearance of supplies he had instructed the New York Port of Embarkation to send to the Operations Division within 24 hours after the departure of a ship, a cablegram listing the contents of the cargo. This would be extracted for the information of the interested services, who were to make themselves in readiness to receive their portions of the shipment and to inform the Transportation Division, Services of Supply, where supplies should be sent.[7] The Deputy Chief Quartermaster immediately directed the Chiefs of the Supply Division and the Subsistence Division to furnish instructions concerning the disposition of quartermaster items, saying that he would consolidate the instructions and send them to the Transportation Division.[8]

During these early days the problem of planning was made more difficult because storage was in the hands of the General Depot Service, which in the reorganization of the Army on 9 March 1942 had been set up coordinate with other services under the Services of Supply. It was on 11 July 1942 that the General Depot Service was discontinued.[9] The transfer of its work to the Quartermaster Service cleared the path for the better functioning of storage and distribution in the United Kingdom.[10]

Procuring Space

From the summer of 1942 to the spring of 1944, the Quartermaster Service was engaged in the struggle to obtain the space necessary to store the supplies without which victory would have been impossible. In World War I it had been found that 0.168 square feet of space was required to store one man's supplies for 1 day and that 0.060 square feet of this space should be covered storage.[11] The total storage requirements were computed by multiplying the troop strength by the space factor and by multiplying the product by the number of days in the supply level. During World War II the per-man-per-day factor that had been established during World War I was subjected to revision. In the summer of 1943, for instance, it was estimated that 0.09045 square feet per man per day was required, exclusive of storage space for petroleum, lubricants, and solid fuels. In the fall of 1945 this factor was 0.0912 square feet, and the factor for petroleum and lubricants was 0.70176 square feet, and for solid fuels 0.02891, bringing the space factor for all supplies to 0.82259.[12] That the World War II factor for total storage space was larger than the World War I factor was mainly brought about by the necessity to store vast quantities of petroleum

and lubricants for more highly mechanized warfare.

On 14 July 1942 the Chief of the Depot Division reported that 4,013,600 square feet of closed space had been assigned to the Chief Quartermaster at 10 general depots, that 590,000 square feet of closed space had been assigned at 13 quartermaster reserve depots, that 578,000 square feet of space would be furnished at distributing points, and that 600,000 additional square feet of space had been requested at distributing points.[13]

At that time BOLERO planning was based upon the ROUNDUP troop strength of 1,049,000 men. When the figure was raised in the second edition of the BOLERO Key Plan, when it was lowered in the third, and when it was raised again in the fourth and again after the Quebec Conference of August 1943, space requirements were adjusted accordingly. For planning purposes the figure of 1,118,000 men was used for ROUNDUP troop strength at the time that the third edition of the BOLERO Key Plan set the figure at 1,049,000.[14] The estimates in the fourth edition of the BOLERO Key Plan were based on a troop strength of 1,340,000 men, a figure that was raised for planning purposes to 1,345,000. Writing to the Chiefs of Services on 6 August 1943, the Chief Quartermaster said that 6,746,759 square feet of closed storage space would be needed, which was 590,281 square feet more than the amount available. Though the BOLERO Combined Committee had estimated that space would be provided to meet the requirements, new depots and additions to existing installations were still under construction in the summer of 1943. The estimated requirements of covered storage, moreover, were based upon maximum use of open storage space. Approximately 50 percent of class II supplies would be placed in open storage and 40 percent of class I supplies, even though closed storage was preferable for all food.[15]

The fourth edition of the BOLERO Key Plan was coordinated with the first plan for operation OVERLORD, which was published by the Chiefs of Staff of the Supreme Allied Command on 15 July 1943, and looked toward a D-day in the first half of 1944 (see ch. 1). Yet as late as August 1943 inadequate provision had been made for storing operational supplies or for receiving at ports supplies to be used immediately. Though the figures that the Chief Quartermaster quoted in his letter to the Chiefs of Staff on 6 August seemed to indicate that enough storage space would be available, many of the warehouses that had been provided were still in the blueprint stage. As remedial measures he urged that construction be rushed to completion, that space be conserved by economical arrangement of items, and that 500,000 square feet of additional space be acquired for static storage of items that would not be needed until a later date.[16]

The Chief Quartermaster controlled three types of depots—general depots, quartermaster depots, and depots for petrol, oil, and lubricants (POL). General depots stored supplies distributed by two or more services. Quartermaster depots stored supplies distributed only by the Quartermaster Service. POL depots stored petrol, oil, and lubricants. The cold storage space provided for United States supplies in British plants was assigned to specific depots (see vol. II, ch. 3). The first 6 general depots were activated on 11 July 1942, 6 more before the end of the year, and 8 others in 1943. The first quartermaster depot was activated on 15 July 1942, 4 others before the end of the year, and 8 in 1943. The first POL depot was activated on 28 September 1942, another on 26 October 1942, and 12 in 1943. By the end of 1943, 6,363,000 square feet of covered storage space and 5,210,000 square feet of open storage space were assigned in general depots, and 1,604,110 square feet of covered storage space and 1,125,849 square feet of open storage space were assigned in quartermaster depots. Of these amounts, 3,620,000 square feet of covered space and 1,424,000 square feet of open space were in use in general depots, and 1,765,824 square feet of covered space and 391,912 square feet of open space were in use in quartermaster depots. A list of general and quartermaster depots (except POL depots), as of 10 November 1943, with activation dates, space assigned and in use, and classes of supplies stored appears in appendix XXVII.

On D-day 3,261,271 square feet of covered space and 2,482,804 square feet of open space were assigned in general depots, and 897,430 square feet of covered space and 747,730 square feet of open space were assigned in quartermaster depots. Of these amounts 2,596,539 square feet of covered space and 1,581,735 square feet of open space were in use in general depots, and 613,076 square feet of covered space and 420,789 square feet of open space were in use in quartermaster depots. A list of general and quartermaster depots (except POL depots), on 8 May

1944, with activation dates, space assigned and in use, and classes of supplies stored appears in appendix XXVIII.

TYPES OF INSTALLATIONS

General quartermaster depots and depots in the United Kingdom bore little resemblance to their corresponding installations in the United States--Army Service Forces depots and quartermaster depots. Before the arrival of United States troops, 4 years of aerial warfare had destroyed many buildings that would have made suitable storehouses, and many of those still usable were needed for the storage of British supplies. Time, materials, and personnel were not available for new construction comparable to that of depots in the United States. Consequently, supplies were stored in such areas as a cattle sales center, a race tract, a castle, a blitzed area, a farm, and a tobacco warehouse, which were converted into depots by hasty improvisation. Descriptions of a few depots will give an idea of the types of storage installations in the United Kingdom.

The Stanley tobacco warehouse was one of the buildings used by General Depot 14 at Liverpool. Although this warehouse was 700 feet long and 14 stories high and was equipped with a basement vault and a ground-floor quay, its facilities were inadequate to handle supplies for the troops it served. Near a railroad station close by was a blitzed area of approximately 500,000 square feet. The rubble was pushed to the sides to form surrounding walls, and the area was used to store thousands of tons of supplies. It was known by the appropriate name of "Blitz Park."[17]

General Depot 45 used the racecourse at Newbury, the station road camp at Thatcham, and a castle at Aldermaston, Berkshire. Depot troops were quartered in rooms behind the racecourse grandstand and in a few hastily built huts. As the depot expanded, the castle and its surrounding areas were procured from the British. Headquarters officers and officers' quarters were in the castle.[18]

The depot at Exeter, Q-134, occupied buildings that were formerly used for cattle sales. Iron cattle pens had to be removed before supplies could be properly warehoused. Within a month the former cattle sales center was converted into a supply depot. [19]

General Depot 18 near Sudbury, Derbyshire, was originally part of Hound Hill Farm. The land on which the depot was situated had been extensively used for grazing. Fields bordered by hedges, small streams, low hills, and small groves of trees made the country ideal for fox hunting. It was not an uncommon sight during the war to see a hunting party riding through this area in spite of all the heavy American trucks and equipment encountered along the way. [20]

SORTING SHEDS

Sorting sheds served as valuable adjuncts to the depots. No provision had been made in the BOLERO plans for the use of sorting sheds at ports--even after the Casablanca Conference had brought about the acceleration of the BOLERO program. Inland sheds, however, served depots in Liverpool, Bristol, Newport, and Glasgow. On 22 March 1943 the Chief Quartermaster requested that the Quartermaster Service be allocated the following space at these sheds: 150,000 square feet at Liverpool, 100,000 square feet at Bristol, 50,000 square feet at Newport, and 50,000 square feet at Glasgow. He requested also that 150,000 square feet of shed space be made available at London, Southampton, and Plymouth. [21]

Soon after submitting his request for space in inland sheds, the Chief Quartermaster heard with concern of the general understanding that only unmarked or illegibly marked packages were to be handled at inland sheds. Many items, he said, should be sorted before they were delivered to depots. If shoes, for instance, which came in 90 sizes, were sorted at sheds, much time could be saved. Remembering the experiences of the year before, when supplies were loaded on cars and shipped to depots immediately upon their arrival at ports, the Chief Quartermaster urged that maximum use be made of sorting sheds and a minimum amount of time be allowed for supplies to remain at sheds.[22]

In the spring of 1943 the supplying of depots from sorting sheds behind the ports was put into effect on an experimental basis, with the thought of making the practice permanent.[23] The success of the experiment resulted in the general adoption of the sorting shed. On 15 August 1943 the Commanding General, SOS, ETOUSA, directed each service to furnish a representative to the staff of each port commander or a liaison officer to the port commander and also to furnish to the port commander military personnel qualified to supervise technical operations. The supplies that would be sorted at port sheds were

FIGURE 6.—Stanley Tobacco Warehouse Used by General Depot 14

FIGURE 7.—Open Storage in Blitz Park

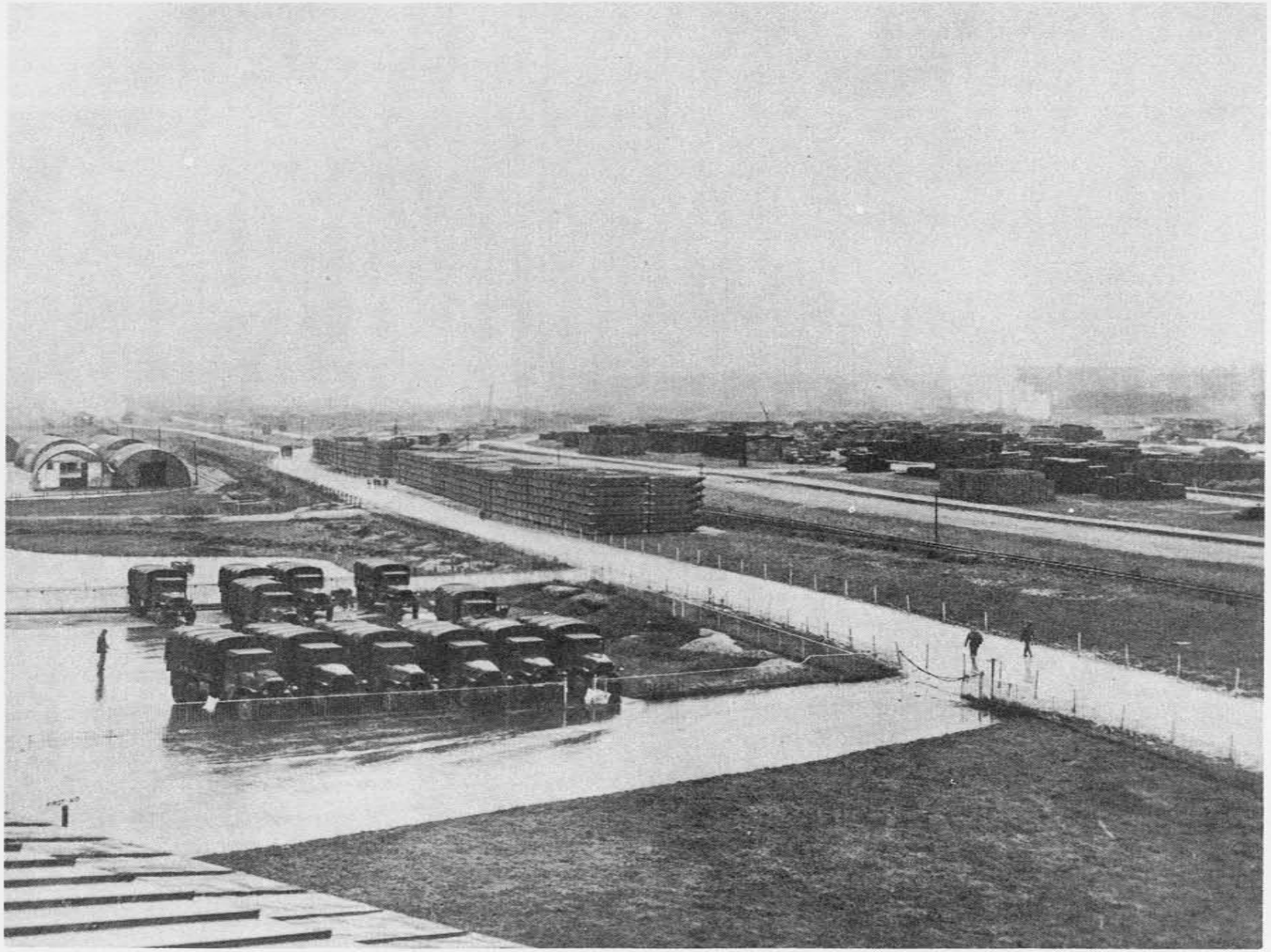

FIGURE 8.—The Newbury Race Track Used by General Depot 45

FIGURE 9.—Castle at Dorchester Used by Quartermaster Depot 324

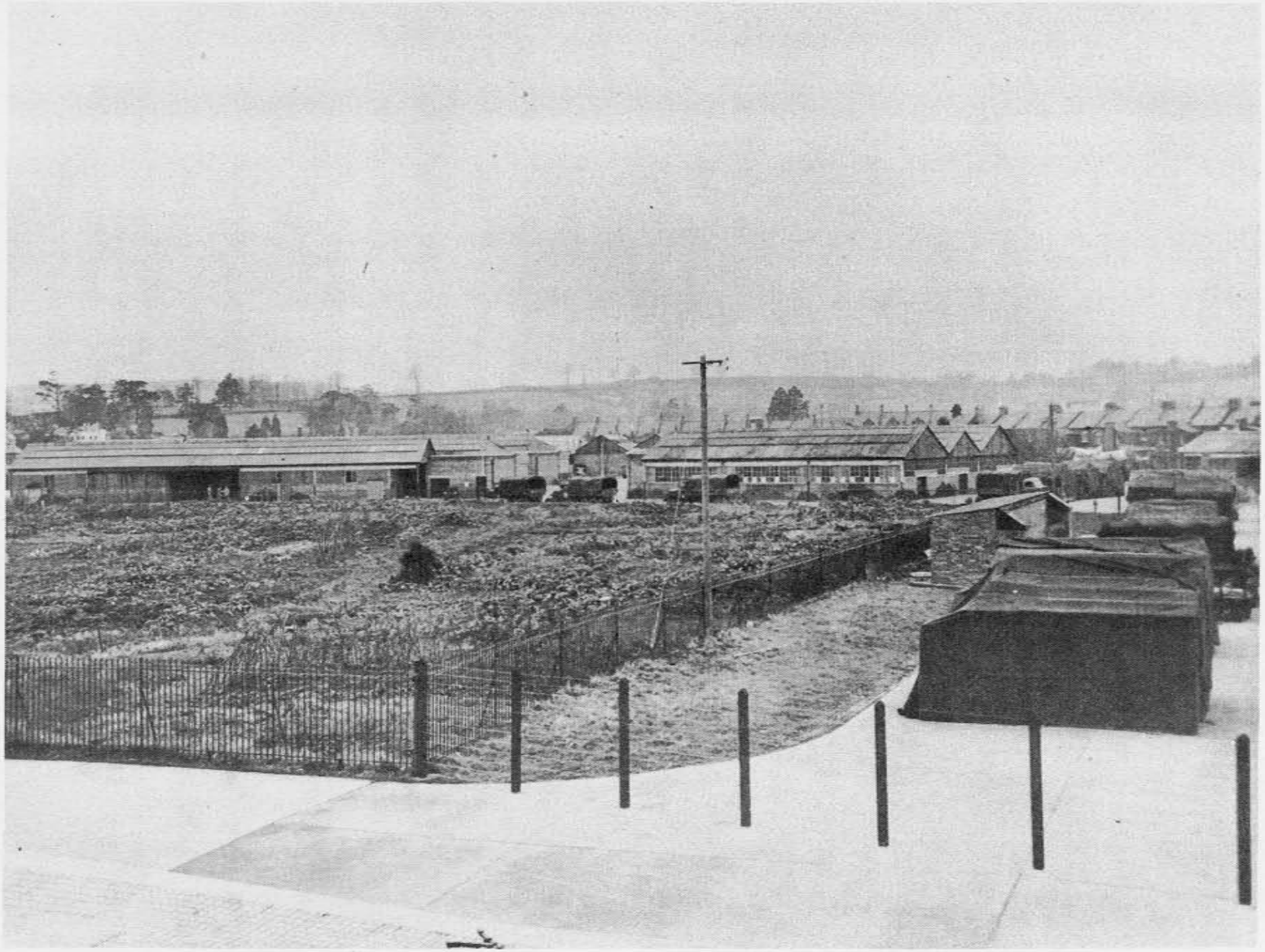

FIGURE 10.—Former Stockyard Used by Quartermaster Depot 134

FIGURE 11.—Fox-hunting Territory Converted into a General Depot

to be those that could not be identified from the manifest, sized items of clothing that had been shipped in bulk but had to be distributed among several depots, and other items that the port commander desired to dispose of quickly in order to clear the port.[24]

In an effort to clarify the procedure, the executive officer of the Storage and Distribution Division recommended that the control of sorting-shed operations be exercised by the Office of the Chief Quartermaster through the quartermaster representatives and the military personnel assigned to ports.[25] In line with this recommendation the Chief Quartermaster directed that responsibility for handling sorting-shed activities pertaining to the Quartermaster Service be vested in the port commander but that close liaison be maintained between the port commander and the Distribution Branch of the Storage and Distribution Division.[26]

Depot Procedure

Depot nomenclature was decided upon soon after the European Theater was established. A conference held on 16 June 1942 suggested a scheme [27] that was accepted, with minor changes, on 3 July. General depots and depots of the services were assigned blocks of numbers as follows:

1 - 99	General depots
100 - 199	Quartermaster depots (for class I, II, and IV supplies)
200 - 299	Transportation depots
300 - 399	POL depots (for quartermaster class III supplies)
400 - 499	Medical depots
500 - 599	Engineer depots
600 - 699	Ordnance depots
700 - 799	Ammunition depots
800 - 899	Signal depots
900 - 999	Chemical warfare depots

Within these blocks, depots were numbered from north to south, starting with smaller numbers in the north. Subsidiary blocks were set up to indicate the approximate locality. In turn, within these blocks, numbers were skipped so that, when new depots were activated, renumbering of old depots would not be necessary.[28]

Depot procedure was established by depot operations memorandums, which began to be issued after the General Depot Service was discontinued. Revised procedures were consolidated in Depot Operations Memorandum No. 41 of 26 June 1943, which was superseded by Depot Operations Memorandum No. 50 of 26 September 1943. The first edition of the Depot Operations Manual was published on 1 December 1943. After the publication of Depot Operations Memorandum No. 41, however, changes in procedure were of a minor nature. On 1 August 1944 the memorandums were consolidated and published as the Depot Operations Manual.

A depot existed for the purpose of supplying, either directly or indirectly through distributing points, all troops within a designated area and for the purpose of receiving, storing, and issuing additional supplies over and above its model-stock levels in order that its storage facilities might be fully utilized. Quartermaster model stock was defined as the estimated quantity of specific items needed to supply a given number of troops for a definite period of time. All depots were required to carry model stocks of supplies for a given number of men for a given period of time. A model stock had to be balanced: in other words, it contained not only the required quantity of each item but quantities of sized items sufficient to fit the designated number of troops.

A commanding officer was in charge of each depot. The commanding officer of a general depot exercised the functions of a post commander and coordinated the activities of the several depot supply officers. The commanding officer of a quartermaster depot performed the functions of the commanding officer of a station and the operational functions of the quartermaster supply officer of a general depot. The administrative assistant (executive officer) was second in command of the depot. He relieved the commanding officer of details connected with administration, organization, and operation of the depot and assisted him otherwise as directed. The quartermaster supply officer of a general depot was the representative of the Office of the Chief Quartermaster. Under the direction of the depot commander, he was responsible for the internal management of the depot. Other officers on the depot staff were a warehousing officer, a depot quartermaster, an accountable property officer, a perishables officer, and a warehouse officer or a warehouse noncommissioned officer.[29]

Problems

Reports of two inspection tours reveal difficulties with which depots had to cope. Some of these could be overcome; others could be ameliorated; but others were of such a nature as to be insurmountable.

The Director of the Storage Division, ASF, visited the United Kingdom in June 1943. He reported that depots were competently managed and well located and that the morale of their personnel was good. On the other hand, he pointed out many weaknesses. The need for better-trained officers and better supervision was apparent. If an agency could be created to teach new methods to the personnel of the depots, improvements could be effected in packing, crating, stacking, and layout. Closer liaison should be maintained with Washington and among the several services in the United Kingdom. No central point had been designated for the collection of data on the services' needs for space and equipment. The multiplicity of reports of which the commanding officers complained could be supplanted by a single comprehensive report. The materials handling equipment that the Chief Quartermaster had requisitioned had not arrived and was greatly needed. The Commanding General, SOS, ETOUSA, acknowledging the report, said that all suggestions would be acted upon at once.[30]

An inventory flying squad was organized by the Services of Supply in the European Theater on 29 March 1944.[31] The next day the squad started on its inspection of depots. The captain in charge submitted his report on 14 April 1944. In his opinion the number and the quality of depot personnel made compliance with the Depot Operations Manual impossible. The depots visited were not maintaining all the records and were not using all the forms required by the manual. Those that were making an effort to comply were far behind in their posting. Limited transportation difficulties necessitated rapid unloading without regard to warehouse principles. Frequently cars had to be dumped before their contents could be counted. Efficiency was lessened by continual rotation of personnel. Officers and key enlisted men were often absent from duty because they were required to comply with military training directives. The great volume of requisitions and the immediacy of needs caused units to call for supplies before paper work could be completed. Warehouse labor was constantly being diverted to emergency work. Those depots that had disregarded the Depot Operations Manual were found to have the most nearly accurate records. It was the opinion of the team that little could be accomplished toward increasing the accuracy of stock records and inventories if strict adherence to the Depot Operations Manual was required.[32]

Adequate Storage Space

The procurement of adequate covered space not only was the first problem that confronted the Chief Quartermaster but was a continuing problem. Successful stock piling in the United Kingdom was made possible by conservation of space and the use of open storage for the items least subject to deterioration. From the outset depot operations memorandums stressed the importance of a layout that was both economical and efficient. From the early days of depot operations in the United Kingdom the practice of stacking from walls to aisles was inveighed against; and a block system was advocated, which would do away with all aisles except those absolutely essential.[33] On 16 September 1943 the Chief of the Research and Statistics Branch of the Plans and Training Division was able to report that conservation measures had brought about a saving of 500,000 square feet. Stacks had been raised in height from 6 to 7 feet; the number of aisles had been materially reduced; and no space was being wasted.[34]

The Chief Quartermaster had come to the European Theater expecting large quantities of space to be turned over to him immediately. For various reasons the British had not been able to meet at once the space requirements set down in the BOLERO Key Plan. Consequently, for some months outdoor storage had to be used even for those subsistence supplies that needed to be placed in covered storage. For instance, in Northern Ireland during 1942 several million rations were stored outdoors.[35] Later, when it became clear that closed storage would not be available for all subsistence, a memorandum was directed to depot commanders giving a list of subsistence items that could be stored safely outdoors and giving also instructions in the methods to be used in outdoor storage of subsistence.[36]

Materials Handling Equipment

The Depot Service began its work in the European Theater with only the old-fashioned and long-used materials handling equipment supplied by the British. On 23 June 1942 the Chief of the Depot Division, OCQM, sent to the Chief of the Depot Service a list of equipment that the Quartermaster Service would need immediately. It included everything

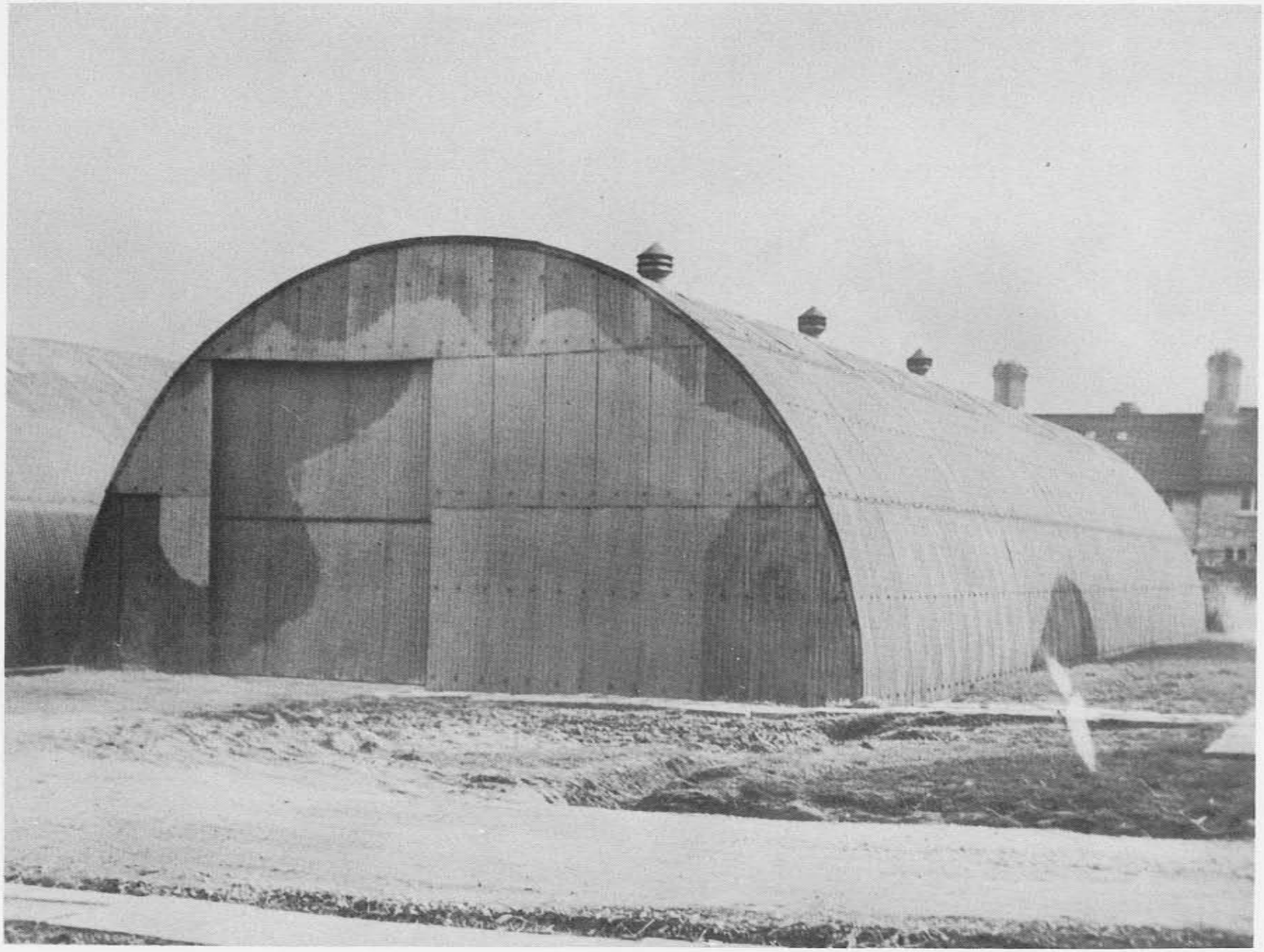

FIGURE 12.—Typical Sorting Shed in the United Kingdom

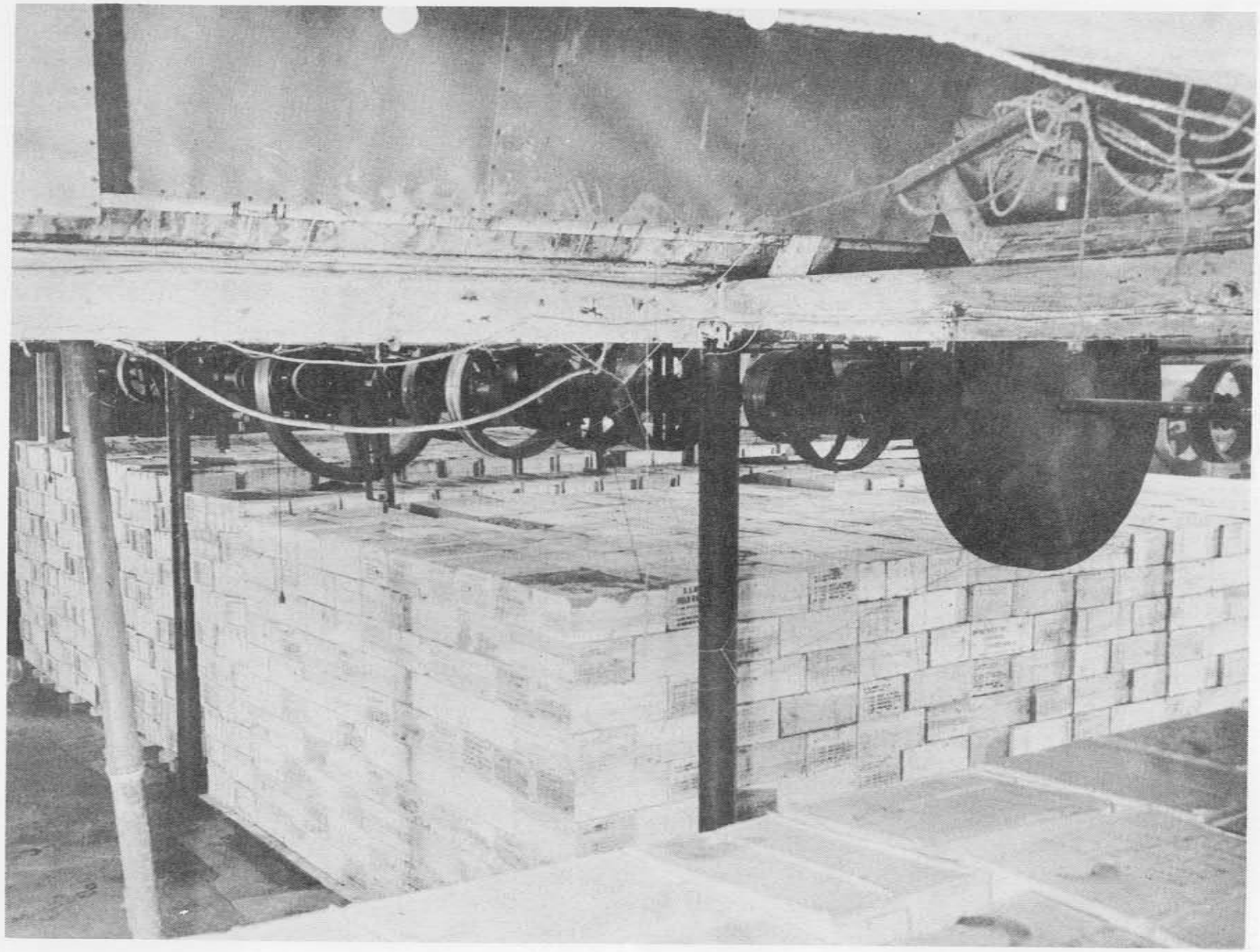

FIGURE 13.—Section of Subsistence Supplies, Showing C Blocks and Storage Difficulties

FIGURE 14.—Interior View of a Warehouse in the United Kingdom

from four-wheel trailers and two-wheel warehouse hand trucks to nail pullers and tin shears.[37] The list was considerably augmented on 7 July.[38] On 17 July the Chief of the Depot Division wrote the Deputy Chief Quartermaster emphasizing the immediate need for 1,350 2½-ton trucks and 100 1-ton trucks.[39] For many months, however, depot operations were hampered by the inadequacy of equipment.

On 11 November 1942 Lieutenant General Brehon B. Somervell dispatched to London Ezra W. Clark of the Clark Equipment Company, Battle Creek, Michigan, to study the problem of materials handling equipment in the European Theater. During his stay in England Mr. Clark conferred frequently with Major General John C. H. Lee and Brigadier General Robert M. Littlejohn. On 12 January 1943 officers assigned to general and quartermaster depots met at Brigadier General Littlejohn's headquarters to hear Mr. Clark on the subject of modern equipment and methods. Mr. Clark reported that officers did not have copies of War Department manuals dealing with materials handling equipment and suggested that the manuals be made available to them. With the assistance of Mr. Clark the Depot Division compiled a list of essential equipment. Mr. Clark completed his report with a number of comments upon the storage and distribution situation in the United Kingdom. Because British docks and quays had no modern materials handling equipment, he recommended that mechanical devices be installed at once. About 14 ship tons were required to land a soldier and his equipment and to support him during a 6-month stay in England. Supplies, therefore, should be stored in such a way as to be moved quickly to the docks. To bring this about pallet storage was essential. Because there was no pallet storage anywhere in England, pallets should be supplied at once, and a survey should be made to determine the type of pallets needed and the places to which they would be sent. There was an immediate need also for fork lift trucks and tractor-trailers.

Mr. Clark reported that few physically fit men were available in Britain as dock laborers. "British women," he said, "are competent and are doing a wonderful job and supplemented by WAAC's could operate fork trucks and tractor-trailer machines under the supervision of experienced stevedores;—and thus utilize the ability of the old dockers who are unable to perform the hard labor of manually handling cargo and freight."[40]

As a result of Mr. Clark's recommendations, requisitions were made for necessary types and quantities of materials handling equipment.[41] On 16 June 1943, however, the Chief of the Storage and Distribution Division reported to the Chief Quartermaster that all equipment ordered from the British was being received according to schedule except conveyors, pallets, and skids; but that equipment ordered from the United States had been received only in limited quantities, though there was likelihood that more would arrive within the next 3 weeks.[42]

The situation had improved by the 1st of August, but it was far from ideal. Accordingly, the Office of the Chief Quartermaster issued instructions dealing with more efficient use of the equipment on hand. The Chief Quartermaster believed that better-trained personnel constituted the only solution of the problem. Thorough training would reduce not only the number of workers but the amount of equipment necessary.[43]

Fulfilling Specific Missions

The mission of a depot was twofold: serving the supply needs of troops stationed in a designated area and building reserve stocks of operational supplies. In theory each depot was informed as to the number of troops it was expected to serve,[44] and upon this basis would maintain its model stock.[45] Because firm troop locations could not always be provided, requisitions frequently could not be properly edited.[46] In many instances, depots were called upon to store and issue supplies in excess of their model stocks.[47] When the adjutant of the Western Base Section expressed the wish that a depot be permitted to have a mission in conformance with the number of troops quartered in its immediate vicinity,[48] the Chief Quartermaster replied that stocks had to be placed wherever space was available and that the building of model stocks based on full BOLERO could not be accomplished in any one base section without affecting the supply levels in other base sections.[49] In other words, the exact troop strength of base sections could not be forecast with sufficient accuracy to admit of literal interpretation of a depot's mission. The success of BOLERO was dependent upon a high degree of flexibility.

Pilfering

Larceny of one kind or another is a perennial depot problem. That it was greater in

United States Army depots situated in a foreign country during the greatest war of all times is not surprising. Millions of cigarettes, thousands of handkerchiefs, hundreds of blankets, and many other items were pilfered from sorting sheds, depots, trucks, and trains. Many of these were sold to a few British merchants who worked hand in glove with the thieves. The files from the Office of the Chief Quartermaster show that suspects were handled promptly and effectively.

Investigations of large-scale thefts from United States stores and warehouses led the Provost Marshal General to report on 28 May 1943 that inadequate security measures were in effect.[50] In reply the Chief Quartermaster cited actions that had been taken immediately upon the discovery of thefts. When the Quartermaster supply system was established, he explained, there was no prescribed procedure for warehouse accountability. He had instituted accountability procedure in those warehouses for which he was responsible. Subsequently the thefts that had been committed had been due to the shortage of qualified officers to staff the depots.[51] The commanding officer of a large general depot reported that he was doing all in his power to prevent stealing. His task was made difficult, however, because the platforms on which freight was unloaded were not under his control. It was easy for supplies to be thrown into horse-drawn wagons passing close to the platforms.[52] The Deputy Quartermaster reported that since February 1943, when changes were made in fiscal policies, in the layout of warehouses, and in accounting procedures, thieves had been caught and promptly convicted, with the result that stealing had steadily decreased.[53]

Delivery of Supplies

The essential procedure governing the delivery of supplies placed a heavy burden upon transportation facilities in the United Kingdom. Vessels bound for the European Theater were loaded in the United States without regard to specific ports of debarkation. Although the Ministry of War Transportation, upon information furnished by the chiefs of services, had tried to direct vessels to destinations that could best handle the major portion of their cargo, many supplies had to travel long distances overland before arriving at the proper depots.[54]

To correct the situation the Ministry of War Transportation proposed that vessels be loaded for the ports serving the depots in which cargoes were to be stored. The Ministry of War, however, after studying the problem, reached the conclusion that loading for specific depots was impracticable and that loading for areas was all that could be attempted. Accordingly, it was suggested that the United Kingdom be divided into three zones: one to be served by the Mersey River ports, one by the Bristol Channel and South Wales ports, and one by the east coast ports. London and Southampton were to be "neutral" ports to receive cargo for any destination. The chiefs of services were asked to determine the approximate percentage of each class of supplies that would be distributed in each zone. The Chief of Transportation, United States War Department, would be given the tabulated data and requested to direct vessels to ports within the zones where the cargo would be stored. Whatever additional tonnage was necessary to fill the vessels would be sent to depots in the vicinity of the neutral ports.[55]

The agreement that was reached early in March 1943 by the British War Office and the Chief of Transportation, United States War Department, provided for the zoning of the United Kingdom.[56] Zone I, known as SOXO, covered the United Kingdom north of a line drawn through London and Banbury across Wales to the coast near Dolgelly, and was served by the ports of Liverpool, Hull, and Immingham. Zone II, known as GLUE, covered the area south of the London-Banbury line and was served by the ports of Southhampton, Plymouth, and Bristol. Zone III, known as BANG, was to be added if troops continued to be stationed in Northern Ireland. The zones were subdivided into areas.[57] About 33⅓ percent of all vessels would feed into the Liverpool area, about 36⅔ percent into the Bristol Channel and southwestern areas, and about 30 percent into the southern and eastern areas. Glasgow would receive the small amounts of cargo that would be sent to depots in its vicinity.[58] (See app. XXIX.)

The procedure for handling supplies after they reached the ports was made as simple as possible. Representatives of the services furnished information as to where supplies should be delivered and helped identify cargoes. Each service controlled and operated its portion of the sorting sheds.[59] The Transportation Service was responsible for the delivery of supplies to the proper depots, using British goods wagons, its own trucks, or lorries provided by the Service Agents—an

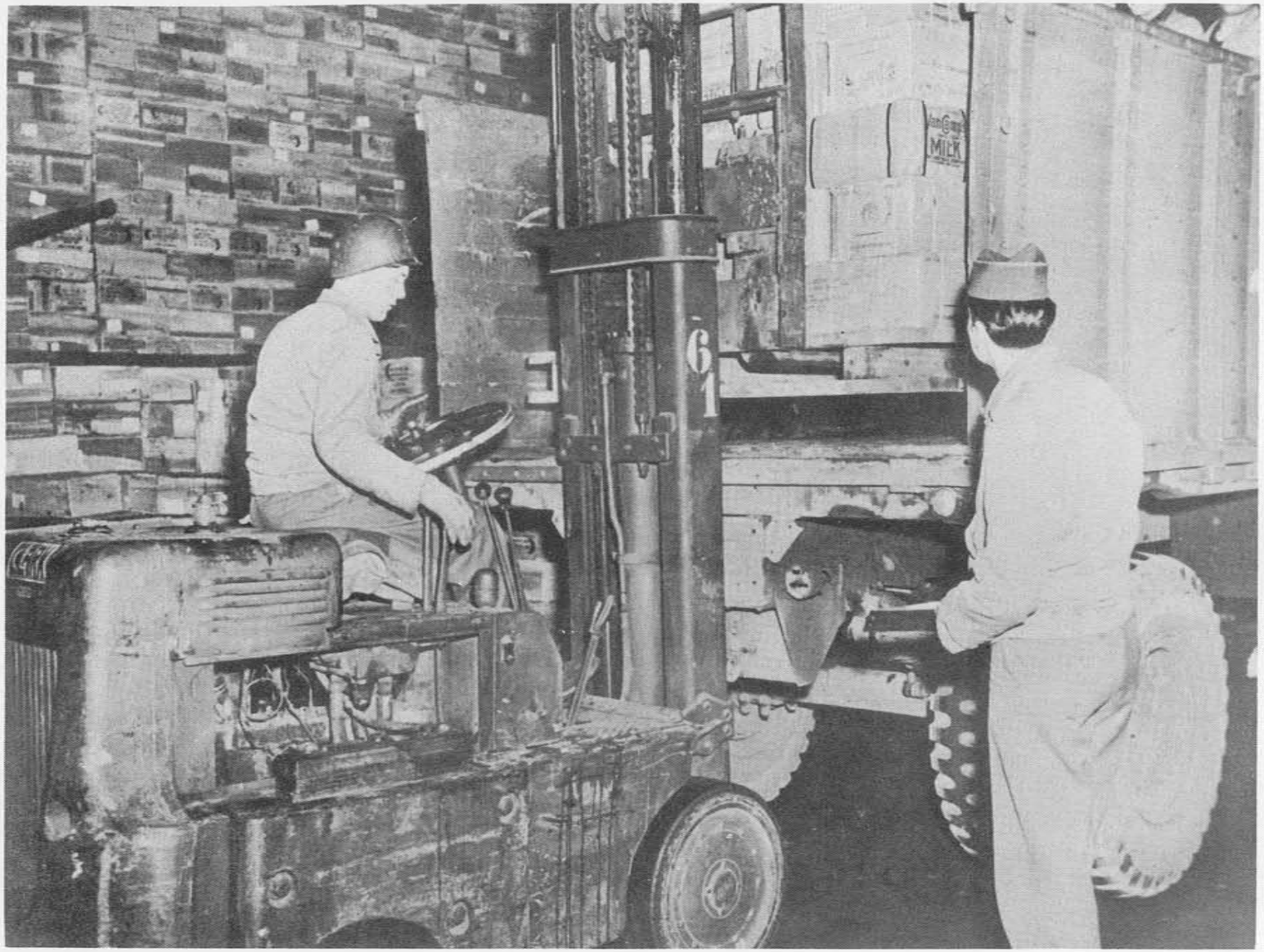

FIGURE 15.—Supplies Being Stacked by Fork Lift Trucks

organization of truckers operating under the Transportation Division of the Ministry of Supply.

Despite all difficulties, the goods were delivered. On the eve of D-day, 18 general depots and 11 quartermaster depots in the United Kingdom were serving 1,525,025 troops.[60] (See app. XXX.)

PLANS FOR INVASION

Before plans for storage and distribution on the Continent could be presented in blueprint form, a foothold had to be established in enemy-occupied territory. Long before the invasion the Office of the Chief Quartermaster knew how much food and what kinds of clothing and equipment would be needed by men in combat. But the setting up of dumps and depots and the procedure governing distribution were too closely interlocked with the tactical situation and the availability of storage areas and buildings for detailed plans to be of value. On 6 January 1944, the day before COSSAC issued the second edition of the OVERLORD plan, the Chief of Operations, SOS, ETOUSA, asked the Chief Quartermaster to estimate quartermaster storage requirements for the Continent.[61] The Chief Quartermaster replied that he would need 3,750,000 square feet of closed storage space and 4,500,000 square feet of open storage space by D-plus-180-day. These figures did not include cold storage space or space needed for salvage and petrol.[62]

According to Planning Directive, Series A, published on 7 February 1944, army dumps on the beaches would be turned over to ADSEC on D-plus-10-day, and four major depot areas would be established by D-plus-90-day—Granville, Laval, Vitre, and Rennes. Vitre and Rennes would be set up to operate through D-plus-90-day, and D-plus-70-day Laval would be able to handle their overflow. Granville would be set up on a temporary basis. ADSEC would assume control of depots in the Granville area on D-plus-30-day, and the Communications Zone would assume control of depots in the Vitre and Rennes areas on D-plus-40-day.[63] Accordingly, each service was requested to submit its storage requirements up to D-plus-90-day. OCQM reported that it would need 3,056,800 square feet of open and closed space (see app. XXXI).

The estimate had been based on a D-plus-30-day factor of 25.425 pounds of quartermaster supplies per man per day. The Quartermaster Service would provide per day for each soldier 6.800 pounds of food, 0.582 pounds of clothing, 17.350 pounds of gasoline and allied products, and 0.693 pounds of post exchange and general supplies. This factor could gradually be reduced to 24.181 pounds per man per day by D-plus-90-day. (See app. XXXII). The quartermaster requirement for the first 6 months of the Continental operation was estimated at 6,736,000 square feet.[64]

OCQM issued the final depot plan for OVERLORD on 7 May 1944. At this time it was known that closed storage would not be available until D-plus-60-day or later. It would have to be available, however, by D-plus-90-day to coincide with direct shipments from the United States. According to a careful estimate, the Quartermaster Service would need 10,191,880 square feet of space by D-plus-120-day and 14,697,736 square feet by D-plus-210-day [65] (see app. XXXIII). G-4 approved the estimates to D-plus-120-day but directed OCQM to review subsequent requirements and project them through D-plus-360-day.[66] The Chief Quartermaster estimated on 14 June that 25,500,000 square feet of open and closed storage would be needed by D-plus-270-day, which would be the maximum requirement (see app. XXXIV). This figure having been approved, G-4 announced that 25,000,000 square feet would be available by 31 May 1945.[67]

OVERLORD

Battleships and cruisers opened fire on the Normandy coast at 0630 on 6 June 1944. Ships loaded with men and supplies lay to off the beaches, ready for the greatest invasion of all times. Though vast numbers of men and vast quantities of supplies would be lost during the first days of the assault, the Allied forces were invincible because more and more men and more and more supplies could be hurled against the European fortress, which Hitler had chosen to call impregnable. Beginning at H-hour, 0730, the invaders landed on a 60-mile stretch of the Normandy coast between Le Havre and the Cotentin Peninsula. The First Army established the central and western beachheads on both sides of the Vire River. On UTAH beach the VII Corps advanced and crossed the marshes to make contact on OMAHA beach with the 82nd Airborne Division of the XIX Corps. Here troops of the V Corps, who had landed under heavy fire from enemy batteries on the cliffs, seized a beachhead from a reinforced enemy division. Fighting

inland, the V and VII Corps joined their lines on high ground at Carentan. On 12 June the 101st Airborne Division of the V Corps entered the town under a smoke screen. By 15 June high ground was available for air strips and dumps.[68]

Storage on the Beaches

The First United States Army under the Twenty-first Army Group was responsible for coordinating the logistical work of all United States forces from D-day to D-plus-14-day. The armies and the Air Force made up detailed requisitions within the tonnage allocations laid down for each day. Administrative Order No. 1 provided that equipment be stripped to the minimum and that maximum use be made of all transportation. Additional requirements for which there was no room on the ships presented a last-minute problem, which was solved by two expedients. First, landing barges, vehicle (LBV's), and barges were obtained. These were loaded with supplies to be unloaded on D-plus-1-day. Second, 3,835 long tons of supplies were carried across the Channel in vehicles belonging to army truck companies. The vehicles were driven straight from ships to dumps, thus eliminating one unloading and reloading operation.[69]

Class I truckheads and class III dumps were established during the first days of the assault. On 12 June class II and class IV supplies began to arrive. On 18 June the First Army turned over beach operations to ADSEC.[70] That day the VII Corps cut the Cotentin Peninsula in half by driving to the coast opposite their beachhead and opened the way for the assault on the port of Cherbourg. The direct attack on the city was launched on 22 June, and the German garrison surrendered on 27 June.[71]

That day Colonel Michael H. Zwicker, ADSEC Quartermaster, entered the city to make preliminary reconnaissance.[72] He found the perimeter of the city and the dock areas badly damaged. The center of the city was not destroyed, however; and, though the harbor was blocked, the railways were in better condition than he had expected to find them. He estimated that a limited amount of power and water could be restored within a week and that within another week the port might be in operation. Within the city there were many tons of potatoes, small quantities of meat, limited stocks of clothing and general supplies, and a 1-week supply of coal. Immediately a truckhead was established and stocked with class I and class III supplies from UTAH. Colonel Zwicker reported that he and his party were subjected to much artillery fire from the east and west of the city but that the casualties consisted of one cow and one old French lady who died from fright.[73]

Despite the lack of a deep-water harbor, men and supplies flowed into Normandy through artificial ports off the beaches. These ports, known by the code name of MULBERRIES, were the key to the entire Continental operation. One of them, MULBERRY A, through which United States supplies were landed, was constructed off OMAHA, the American beachhead near Bayeux. The other, through which British supplies were landed, was constructed off the British beachhead at Arromanches.

The project was started early in 1943 by the British War Office. Blueprints called for 150 concrete caissons (PHOENIXES) to act as harbor walls. PHOENIXES would be of six different sizes, the smallest weighing 1,670 tons and the largest 6,000 tons. Steel floats, weighing 15,000 tons, would be constructed to be used as breakwaters. These would be supplemented by a line of sunken blockships. More than 7 miles of prefabricated pier equipment in sections 480 feet long, would be towed across the Channel.

The PHOENIXES began to rise on 27 sites scattered throughout the British Isles. Some were built on launching ramps, like ships; others were erected in specially constructed basins. A fleet of 165 tugs was assembled from every port in the British Isles to tow the giant caissons across the Channel. Meanwhile old ships from all over the world were gathered in English and Scottish ports. Many of them had to be fitted out with new engines just to make the short run across the English Channel. Nazi observation planes spotted the activities, yet failed to realize their purpose. Months before D-day commando and ranger units had secretly surveyed the offshore bottom along the invasion beaches. On D-day morning these results were rechecked. During the late afternoon of D-day the first blockships began to arrive. The ragged line of ancient hulks sailed in beyond the hundreds of other ships in the transport area and anchored about 1,200 yards off the beach. They sank one by one as skeleton crews detonated charges, which blew gaping holes in the bottom of each ship. On the morning of 7 June a neat line

FIGURE 16.—Landing Supplies from Ships at the Edge of the Beach Flat

of 60 ships rested offshore in 4 fathoms of water. The waves broke over them, but their force was spent and smooth water for small craft lay inside. These smaller harbors for the protection of small craft were known as GOOSEBERRIES. On the second day of the slow trip across the Channel, the Germans finally suspected the purpose of the caissons and sent Messerschmidts to the attack. Although some tugs and caissons were lost, there were still spares in England when the operation was complete. The caissons were sunk in 5½ fathoms of water, allowing ships up to a 30-foot draft to anchor behind them at low tide.

During severe storms, Channel waves often rose 12 feet and were forceful enough to topple and destroy some of the concrete caissons. Because ships outside the artificial harbor could be torn loose and sent careening into the caisson walls, the steel floats were anchored about a mile from the harbor edge to serve as an outer breakwater. Within the harbors were British bridge piers, large enough for LST's and coasters to moor alongside. These piers were built on Prime Minister Churchill's personal orders. They overcame the problem of tides by resting on hollow steel legs. At low tide the legs rested on the bottom and brought the pier floor even with the level of the ship's deck. At high tide the piers floated on their hollow legs, rising just enough to keep the floor above water. MULBERRY A, at OMAHA, was destroyed by a gale that ravaged the invasion coast from D-plus-13-day to D-plus-16-day. MULBERRY B, near the British beachhead, rode out the storm unharmed.[74] Because Liberty ships were too large to enter MULBERRIES, efforts were made to speed up rehabilitation of the small captured ports at Isigny and Grandcamp. Isigny began operations on 12 June 1944, and Grandcamp 3 days later.[75]

Cherbourg

Cherbourg was the first major port to fall to the United States forces. The ruined port was another example of German demolition efficiency. The harbor and wharves were heavily mined, all cranes were blown up, the breakwater was damaged and slips and fairways were choked with scuttled ships. Cherbourg was not ready to receive ocean-going ships until the end of August 1944.[76]

The Engineer Service at once tried to determine the storage installations that each service would require. On 10 July the ADSEC engineer reported to the ADSEC quartermaster that 350,000 square feet of open storage and 170,000 square feet of closed storage and space for 3,336 tons of packaged POL could be provided in Cherbourg. Already the quartermaster requirement of 200,000 square feet of open storage at OMAHA beach and 100,000 square feet of open storage at UTAH beach had been made available. For cold storage a warehouse in Cherbourg could be used immediately, and at Isigny and Les Vey buildings could be made ready by means of minor repairs.[77]

A class I dump had been established at Cherbourg on 30 June. By 20 July other dumps were strategically located at Cherbourg, Bouteville, Chef du Pont, Barneville-sur-Mer, Mosles, Formigny, and Saint-Jacques de Nehou.[78]

Soon Cherbourg was receiving large quantities of quartermaster supplies. Here on 17 July the first quartermaster depot on the Continent was established in an old arsenal at 41 Rue de Val-de-Saire.[79] Plans looked toward the development in the Lison-Saint-Lo area of the first temporary major depot area and at Le Mans of the first permanent major depot area.[80] It was apparent that the contemplated construction in the vicinity of Cherbourg would not meet requirements. Therefore the ADSEC quartermaster requested the ADSEC engineer to provide the following closed space: 2,000 square feet by D-plus-60-day, 450,000 square feet by D-plus-90-day, and 520,000 by D-plus-120-day.[81]

Beginning on 25 July, United States forces concentrated upon piercing the enemy line on a narrow front at Saint-Lo. The operation ended successfully with the fall of Avranches on 31 July. After the capture of Le Mans and Laval a week later the plans for the establishment of the first major depot area were begun.[82]

The Battle of France began in August. At the time Brittany was being overrun by the tanks of the Third Army, the Office of the Chief Quartermaster moved to the Continent, where it could give closer supervision to the great supply task that was its responsibility (see ch. 2). On 15 August the operation DRAGOON was set in motion, when the Seventh United States Army landed at Marseille. On 25 August Paris was liberated, and on 28 August the Third Army captured Chateau-Thierry and swept toward Soissons and Reims. On 31 August the Canadians were sealing up the Germans in the port of Le

Havre, and the British captured Amiens. That day General Eisenhower announced that the Battle of France was 5 days ahead of schedule.[83]

Organization of Section and Base Sections

Shortly after the liberation of Paris, the Commanding General of the Communications Zone stated that the Communications Zone would be composed of seven and/or base sections. Three of these—ADSEC and the Normandy and Brittany Base Sections—already existed; two others—the Seine Section and the Loire Section—would be added during September and October; the two others—the Oise Section and the Channel Base Section—would be established during October and November.[84]

The decision to form the Advance Section of the Communications Zone (ADSEC) had been made in December 1943, when the Theater Commander and the Commanding General, SOS, ETOUSA, had agreed that a service headquarters should be established as soon as United States troops gained a foothold on the Continent. ADSEC had been provisionally activated on 7 February 1944, pending War Department approval, and finally constituted on 24 April 1944. It was responsible for the detailed planning and development of the Communications Zone from D-plus-20-day to D-plus-40-day.[85] The Forward Echelon, Communications Zone (FECZ), had been activated on 10 March 1944 and was given the responsibility of detailed planning for the development of the Communications Zone from D-plus-40-day to D-plus-90-day.[86]

The first plan for the development of the Communications Zone was published 2 days after the activation of FECZ. It provided that, as ADSEC moved forward to continue direct support of the combat elements, three base sections, which had been organized in the United Kingdom, would be called forward to assume control of the area relinquished by ADSEC. Base Section I, which would extend over the Brittany Peninsula from Avranches in the north to the Loire River in the south, would arrive on the Continent upon the capture of the ports at the mouth of the Loire River and on the coast of the Quiberon Bay. This base section would be responsible for the development, organization, and operation of these ports and the Brittany area as the principal supply base for support of operations to the northeast. Base Section II would assume control of the area east of the Brittany Base Section when ADSEC moved ahead. Because FECZ administered these base sections, it would assume control of the entire Communications Zone upon the arrival of Base Section I.[87] Actually, ADSEC landed in France on 15 June 1944, 9 days after D-day. FECZ never became operational and was dissolved in the United Kingdom on 26 June 1944.[88] Base Section I, which became the Brittany Base Section, and Base Section III, which became the Normandy Base Section, began operating on 6 August 1944.[89] Base Section II, which became the Loire Section, was directed to assume control on 24 June of the area south of the Normandy Base Section to the Loire River but was not established until September.[90] (See app. XXXV.)

Tentative Depot Plans

On 31 August the Deputy Chief Quartermaster directed the Plans and Training and the Storage and Distribution Divisions to collaborate on a new depot plan. Major General Littlejohn had realized soon after reaching the Continent that revision was necessary in order to meet the needs of a rapidly changing tactical situation. He wrote that the depot at Cherbourg should not be changed; that the OMAHA and UTAH depots should operate through October and that thereafter should have their missions transferred to Brest; that Metz and Le Mans should carry supplies for 500,000 men for 15 days; that Paris should carry supplies for 500,000 men for 30 days; and that Coblenz should become a large installation to be supplied by rail through southern and western France and by water down the Rhine.[91]

By early fall Cherbourg was discharging 24,000 long tons of United States supplies daily. UTAH and OMAHA, which would be used only until 1 November, were handling 14,000 long tons daily. MULBERRY B at Arromanches was being used by the British but would be turned over to the United States forces by mid-October. The capacity of this artificial harbor was 6,000 long tons daily. The Ordnance Service would get 80 percent of this tonnage; and the Quartermaster Service would get about one-tenth of the remaining 20 percent. Granville, Saint-Brieuc, and Paimpos were being used as coal ports only. Saint-Vaast, Isigny, and Barfleur were handling priority 2 coasters and would stop operating as soon as Antwerp became available.[92]

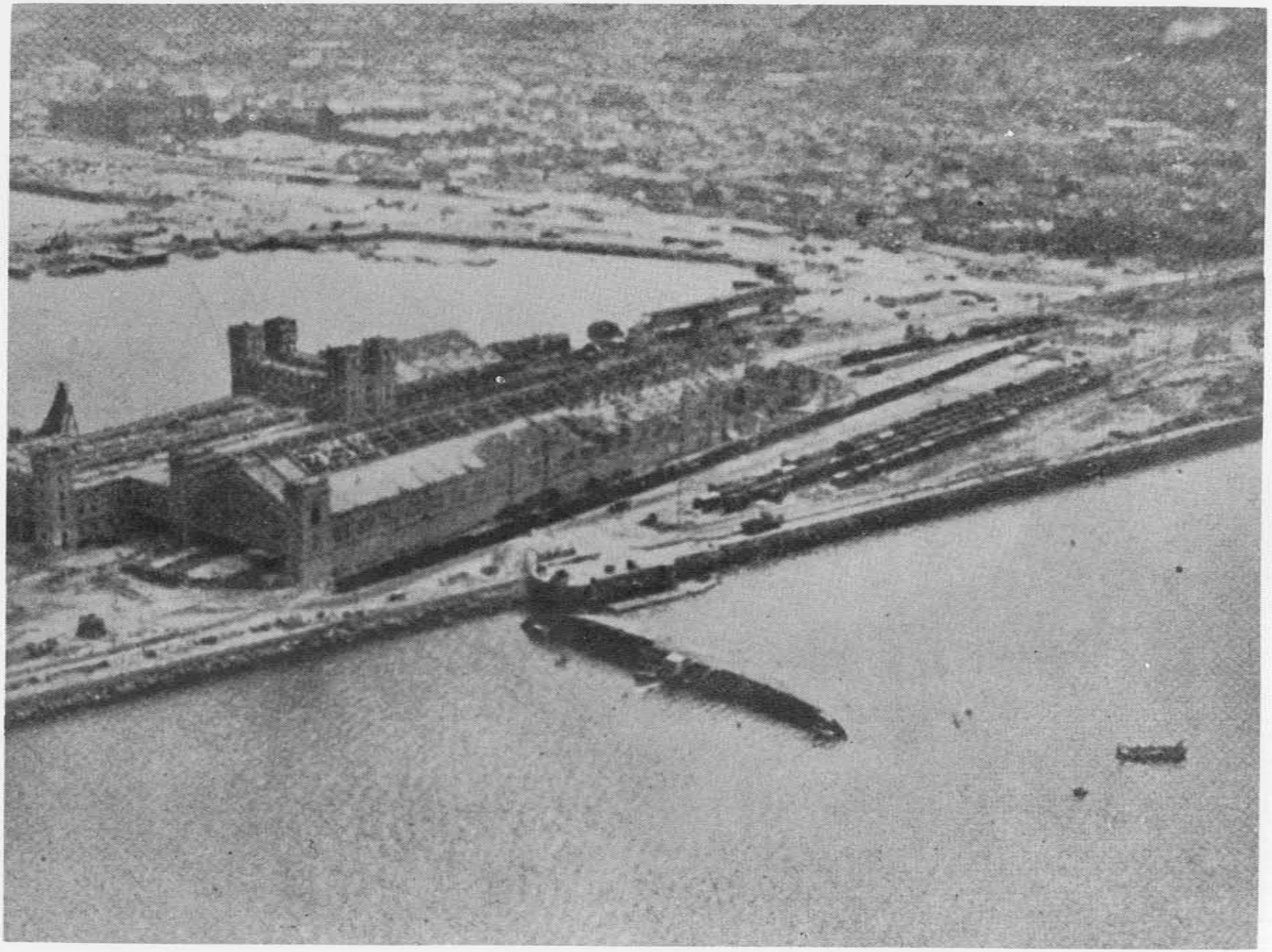

FIGURE 17.—An Aerial View of the Damage Done by the Germans at Cherbourg

On 9 September the Plans and Training Division prepared two tentative depot plans—a long-term plan and a short-term plan. The former was based upon the assumption that United States forces would have to be supported at the German boundary during a period of stabilized warfare. The Normandy Base Section would take over some of the supply work that had formerly been planned for the Brittany Peninsula. This load would later be transferred to Le Harve and other Channel and river ports to the northeast. The second plan contemplated the rapid progress of armies toward and into Germany. The mission of the Normandy Base Section in this plan was identical with that of the long-term plan. The plan provided that first Paris and then Metz would be constituted as the main storage area. If necessary, temporary dumps would be used to supply troops until the United States Army moved into its area of occupation in Germany.[93]

Need for Intermediate Depots

On 23 September, a little more than 2 weeks after the First Canadian Army captured Le Havre, G-4 stated that operations at Le Havre would begin about 1 October and that Antwerp would be ready 10 days later.[94] The first quartermaster supplies were discharged at Le Havre on 2 October 1944.[95] Less than a week later G-4 stated that for the time being Le Havre would be developed to unload daily 3 Liberty ships and 3 LST's. As soon as possible the port would be expanded to handle 6 Liberty ships daily and eventually 12.[96] By 27 October 30 ships, carrying 32,762 long tons of quartermaster supplies, had been received at Le Havre.[97]

The lines of communication had been so lengthened by early October that the establishment of intermediate depots became imperative. On 7 October the Chief Quartermaster wrote the Assistant Chief of Staff, G-4 that intermediate depots were being established in Paris for class I, post exchange, sales store, and selected class IV items; and at Reims for class II and selected class IV items. He considered Nancy and Liege and Namur as the next areas suitable for intermediate depots to handle all classes of supply.[98] To work out details for a revised depot plan representatives of G-4 and OCQM met at ADSEC headquarters on 25 October.[99]

The Plan of October 1944

A new over-all supply plan, though not yet published, had been developed for the establishment of intermediate depots. The conference of late October provided for the establishment of two additional intermediate depots for the storage and distribution of class I supplies: one in the Huy-Liege area to supply the First and Ninth Armies and another at Verdun to supply the Third Army and ADSEC. Supplies would be sent direct to the areas instead of passing first through Paris.[100]

The first of a series of over-all quartermaster supply plans that were worked out to conform to rapidly changing tactical situations was published on 30 October 1944. The Supreme Commander had organized the Twelfth Army Group, which consisted of the First, Third, and Ninth Armies, under the command of Lieutenant General Omar N. Bradley. While the Twenty-first Army Group under Field Marshal Sir Bernard Law Montgomery continued the sweep along the Channel coast to Holland, the United States forces would drive south to take up positions for the attack on the Rhine River.

In the October plan depots were designated for the first time as base, or port, depots and intermediate depots. The former were to operate at Cherbourg, Le Havre, and Antwerp; and the latter in the Liege and Verdun areas and at Reims and Paris. In addition, distribution points were to operate in army areas and in sections and base sections. Quartermaster items were to flow from Brittany and Normandy ports through intermediate depots to the armies. Stocks at both base and intermediate depots were to be part of the theater reserve under control of OCQM and would be issued only on OCQM directives or in accordance with specific authority delegated to sections by OCQM.[101]

The plan provided for no general depots. On 21 November 1944, however, the Commanding General of the Oise Section suggested that the 11 depots operating in Reims be grouped into a general depot and expressed the opinion that consolidation would promote economy of labor and transportation.[102] The Chief Quartermaster, however, resisted the establishment of general depots. The situation, on the Continent, he said, must remain liquid. Consolidation of the 11 depots at Reims into one large installation would defeat the purpose of their existence, which was the delivery of supplies in the shortest possible time. The quartermaster program in the Oise Section was operating efficiently and should be let alone.[103]

On 1 November 1944 the European Theater had assumed supply responsibility for the Sixth United States Army Group. This group, commanded by Lieutenant General Jacob L. Devers, consisted of the Seventh United States Army, the French First Army, and several divisions of French colonial troops. Initially, this group, which had invaded Southern France, had been supplied by the North African Theater of Operations, which became the Mediterranean Theater of Operations on 1 November 1944. However, when the Sixth Army Group reached the Belfort Gap, the Supreme Commander realized that the line of communications from North African bases was too long and that the force could be supplied more feasibly by the European Theater. Consequently, the Continental Advance Section (CONAD), the supply organization of the Sixth Army Group, was transferred to the Communications Zone.[104] Thus, a second advance section was added to the supply structure.

On 20 November 1944 the Communications Zone of the European Theater absorbed the Southern Line of Communications (SOLOC), the Communications Zone first of the North African Theater and then of the Mediterranean Theater of Operations.[105]

Antwerp

The first quartermaster supplies were unloaded at Antwerp on 3 December 1944.[106] Although the 11th Armored Division of the Second British Army had entered the port on 4 September, the German garrisons defending the forts at the mouth of the Scheldt River were not cleared out until 3 November.[107] The British had been able to enter the port with comparative ease because the Belgian underground had disconnected the wires to the explosives with which the Germans had mined the bridge at Boom and thus had prevented German demolition. The sudden and swift attack left Antwerp virtually unharmed.[108]

Antwerp was the largest and most efficient port used by the Allies on the Continent. Located 55 miles from the sea, at the head of the Scheldt estuary, the port had 30 miles of docksides and quayside mooring space. In 1937 Antwerp had handled 57,812,160 tons of goods traffic. It housed the Continental works of General Motors and Ford Motors, the combined area of which was 22 acres. The port was served by the densest railway net in all Europe, 19 miles of railway per square mile. There were more than 500 miles of double-tracked sidings in the harbor area alone. The facilities at the port included 800 warehouses, 24 elevators, and 208 acres of petroleum installations.[109]

Shortly after the city was taken, a reconnaissance officer reported that two bridges over a main-line railway were destroyed, that elsewhere damage was slight, and that the port could be made ready for use in approximately 3 weeks.[110] However, work did not begin on the port until the siege was lifted in November. On 12 November G-4 stated that Antwerp would begin operating on 20 November and requested the quartermaster plan for the port. The Chief of the Storage and Distribution Division replied that all classes of supplies, except classes II and IV, would be discharged at Antwerp and moved by barge or train to Liege and Verdun. Classes II and IV would normally be discharged at Le Havre, and at Antwerp only if Le Havre was congested.[111]

The Plan of December 1944

The capture of Antwerp and the consequent flow of supplies to armies that had already reached the German frontier radically changed the whole supply situation.[112] Accordingly a new quartermaster supply and storage plan was developed. Published on 1 December 1944, it was based on the assumption that before 1 January 1945, 20 tons of quartermaster supplies could be unloaded daily at Antwerp and promptly cleared from the port and that berths allocated for offloading quartermaster supplies at Antwerp, Le Havre, Rouen, and Cherbourg would be adequate to discharge all quartermaster supplies. Therefore, supplies would be off-loaded at the ports nearest those depots designated to receive them. Implicit in the plan was the further assumption that hostilities would continue until about 1 March 1945 and that tactical operations would not be fundamentally changed.

Supplies would be moved from shipside direct to intermediate depot. No quartermaster storage space would be provided in Antwerp except for perishable foods, bulk POL, and supplies necessary for the support of dumps. Similarly storage at Le Havre and Rouen would be provided for only perishable foods, bulk POL, and supplies for a part of the military population in the Channel Base Section. Most of the stocks in Normandy, except those in Cherbourg and Couville,

FIGURE 18.—Aerial View of Liege Storage Areas

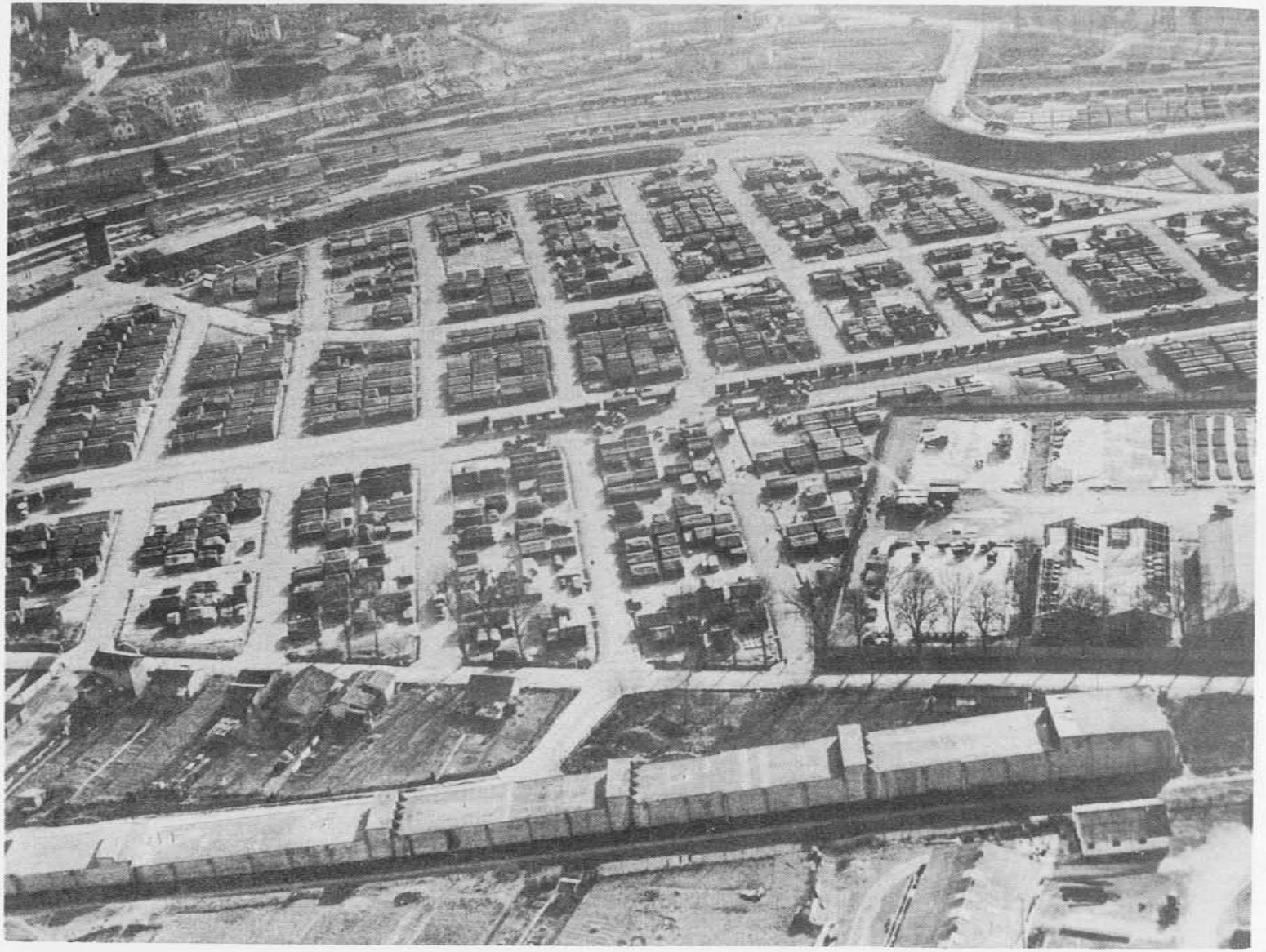

FIGURE 19.—Aerial View of Storage Area at Verdun