

CHAPTER 6

COFFEE

Early BOLERO planning provided that all coffee from the United States armed forces would be shipped from the United States as roasted and ground coffee or in bulk to be roasted and ground in American mobile roasters. The proposed method of supply not only taxed shipping space but necessitated the use of much tin plate. Therefore, other sources of procurement were explored.¹

For United States troops the British could bring green coffee from India, Africa, and Madagascar on ships that were returning to the United Kingdom with small cargoes. Tests showed that this coffee, although not of the best quality, could be brewed into an acceptable drink. A survey made in September and October 1942 revealed that the British Government was obtaining from South America practically all the Royal Army's requirements of canned corned meats. Since the United States imported most of its green coffee from South and Central America, the War Department and the Office of The Quartermaster General suggested that green coffee for the United States forces be shipped from Brazil along with British cargoes of canned meats. By this plan ship tons could be saved, and better coffee could be procured.²

PROCUREMENT

On 20 November 1942 negotiations for the purchase of coffee were opened with the British Ministry of Supply.³ The Chief Quartermaster presented his estimates of 1943 requirements at a series of conferences held with the Ministry of Supply. In December he estimated requirements for the year at 20,119,440 pounds of coffee, approximately 152,420 bags. Of this amount 13,271,280 pounds would be green bulk coffee to be roasted, ground, and packed by civilian roasters selected by either the Ministry of Food or the United States Army, and the remaining 6,848,160 pounds would be roasted and ground vacuum-packed coffee.⁴ The Ministry of Food, when asked whether it could supply 11,220,000 pounds—85,000 bags—made from a blend of 50 percent Kenya and 50 percent Madagascar or Cameroon Robusta coffees,⁵ agreed to supply the entire amount of green coffee required for the American forces.⁶ Later, however, the Chief Quartermaster raised the

estimate of coffee requirements for 1943 to 21,779,000 pounds. The Ministry of Food then said that it could supply only 12,050,000 pounds of green coffee against the American requirements and that the remaining 9,729,000 pounds of coffee would have to be made up of roasted and ground coffee packed in Great Britain and green coffee imported from the United States by the Quartermaster Service.⁷

Negotiations for the procurement of the 1944 coffee requirement were opened on 16 March 1943, when the British Ministry of Food made inquiry as to the amount that would be needed and suggested that an estimate be made covering the entire year.⁸ A preliminary estimate, made on 7 April 1943, indicated that 29,700,000 pounds, or 225,000 bags, would be required. The British were asked to furnish 13,200,000 pounds, or 100,000 bags, during the first 6 months of 1944. Because of short crops, however, it was thought that only half that amount could be delivered in the time specified but that another 50,000 bags would be available during the latter part of the year. At least 125,000 bags, or 17,400,000, would have to be procured from the United States or South America.⁹ A more careful estimate, prepared in April 1943, set 78,516 bags as the requirement for the remaining months of 1943 and 209,754 as the requirement for 1944—a total of 288,270 bags. A balance of 79,000 bags was still to be drawn against the 85,000 bags already purchased from the British. Therefore, the additional requirement for 1943 and 1944 was 209,270 bags, or 27,623,640 pounds.¹⁰

Though the coffee was not of the standard demanded in America, the saving in money and shipping space was a compelling reason for its purchase. The Chief of the Subsistence Division expressed the opinion that the blend "is not too radical a change to cause comment, although it differs from the coffee formerly supplied in the United States."¹¹ The Chief of the Coffee Roasting Branch, therefore, recommended to the Chief of the Subsistence Division that an equal amount of better grade coffee be imported from the United States or South America in order that the blend might be improved.¹² On 8 May 1943 the Ministry of Food estimated that it could supply 9,779,880 pounds of coffee during the re-

maining months of 1943 and 26,123,000 pounds during 1944. The Ministry anticipated no difficulty in procuring the Cameroon Robusta and Madagascar coffees but feared that the full supply of Kenya and India coffees might not be available. If in the early months of 1944 it was found to be impossible to provide the finer grades, the British promised to inform the coffee roasting branch at once.¹³

Droughts in India and Kenya cut the coffee crop to such an extent that the Ministry of Food was unable to live up to its agreement.¹⁴ The British offered, however, to transport to the European Theater coffee that the United States would purchase in South America.¹⁵

The Deputy Chief Quartermaster reported on 6 August 1943 that 7,000,000 pounds of the 11,000,000 pounds that the British had first agreed to deliver had not been received. This amount, added to the 1,000,000 pounds of Venezuelan coffee that had been intended for Russia but had been transferred to the Office of the Chief Quartermaster, would fill 1943 requirements. Since the coffee that the Ministry of Food was able to procure was of inferior grade and in quantity sufficient to meet only half the 1944 requirements, he recommended that procurement in the United Kingdom be suspended and that Brazilian coffee, which was then available, be shipped direct from the United States.¹⁶

The following figures contained in a report submitted by the Chief of the Subsistence Division, presented a comprehensive picture of the coffee situation:

Green Coffee Requirements:	Pounds	Pounds
1943, August through Dec.	8,025,000	
1944	37,277,000	
Total		45,302,000
Green Coffee		
on Hand and on Order:		
On hand, 30 July		
(78 days' supply)	2,500,000	
Due on requisition from British		
(110 days' supply)	7,000,000	
Due on requisition from United States, to arrive by early 1944		
(95 days' supply)	8,500,000	
Soluble Coffee		

On Requisition, 225,000 pounds	
Green coffee equivalent	400,000

Total	18,400,000
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Balance of Requirements	26,902,000 ¹⁷
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In his report the Chief of the Subsistence Division recommended that the British offer to deliver green coffee from Brazil be accepted. The recommendation brought immediate action. The Ministry of Food confirmed its offer to bring coffee from Brazil along with canned meats; representatives of the Office of The Quartermaster General went to Brazil to arrange acceptance of 400,000 pounds of coffee, which was a gift from the President of Brazil to the President of the United States; and the Office of The Quartermaster General made 1,000,000 pounds of soluble coffee available to the European Theater of Operations. Accordingly, on 27 September 1943 the Chief of the Procurement Division was able to say to the Chief Quartermaster, "Our coffee supply is assured. U. S. coffee, mostly non-quota, is available in the United States and in Brazil."¹⁸

With full information in hand concerning the anticipated troop strength in the theater, Brigadier General Littlejohn notified the Ministry of Food on 15 October 1943 that his requirements through December 1944 would be 53,119,000 pounds of coffee. "It is my understanding," he said, "that this coffee will be furnished by the British Government here in the U. K. from stocks purchased by the United States of America in Central and South America and turned over at suitable ports in such countries." He concluded his letter by asking that the delivery schedule be confirmed.¹⁹

This, in brief, is the account of the toil and diligence that went into the procurement of one of the items that made up the huge stock pile necessary for successful invasion of the Continent.

On 24 August 1944 (D-plus-79-day) the total coffee assets in the United Kingdom amounted to 20,856,896 pounds. Because this stock was not adequate to assure uninterrupted supply of coffee for the American forces on the Continent, the Chief Quartermaster considered it of great importance to find out the amount that could be shipped from America.²⁰ Writing on 15 October 1944, the Chief of the Subsistence Division said, "We have authorized additional issue of



Figure 28.—Coffee Roaster and Grinder Ready for the Road.

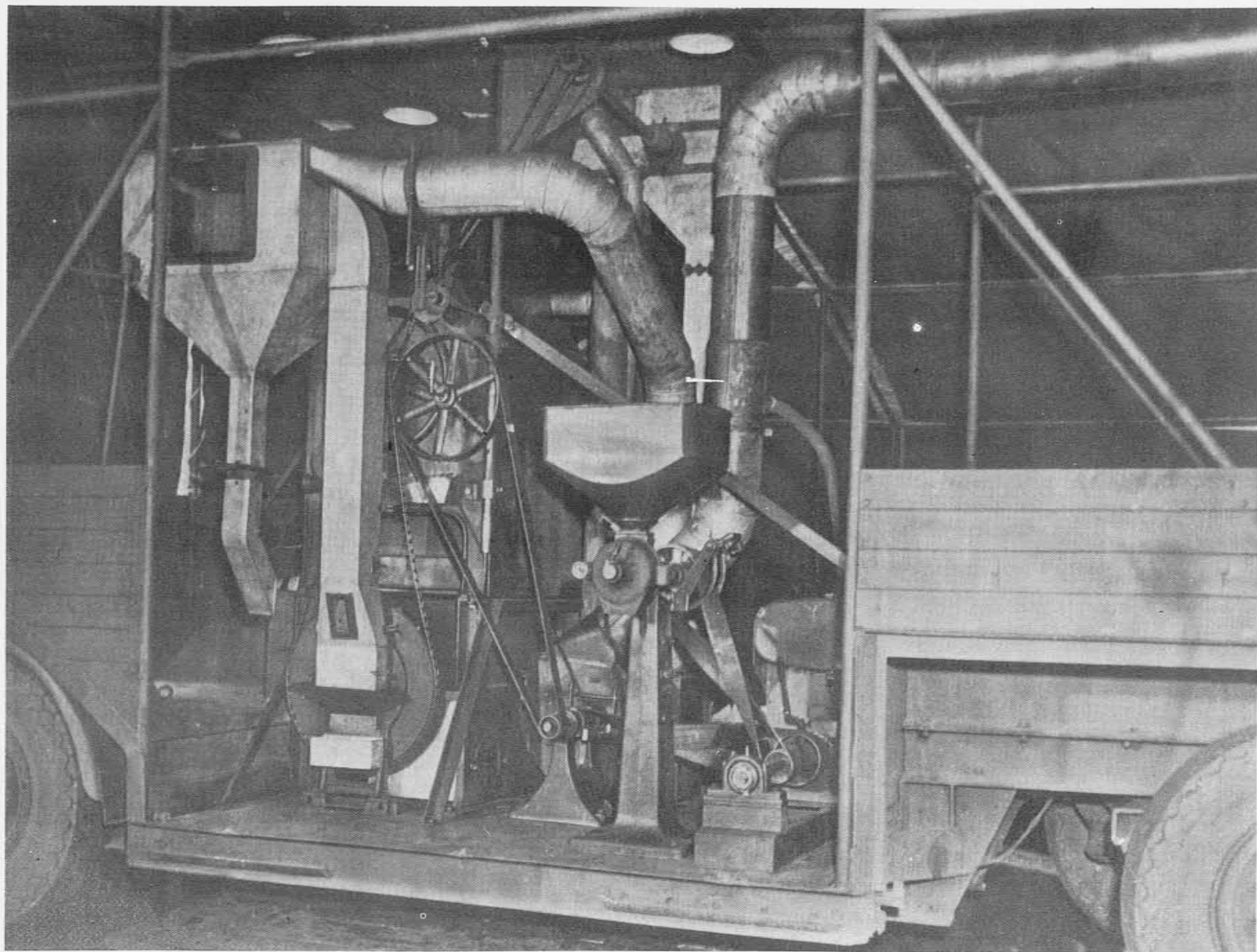


Figure 29.—Interior of Jabez Burns Coffee Roaster.

green coffee for Ground and Air Forces on the Continent and must reproject our requirements in order to requisition sufficient additional supplies on the United States." A revised green coffee status report showed total assets to be 29,044,744 pounds; total liabilities, which included 6,452,955 pounds for consumption through 31 December 1944, to be 23,586,394 pounds; and the amount available for shipment to the Continent to be 1,289,690 pounds.²¹

On 17 November 1944 The Quartermaster General increased the green coffee requirement for the first 4 months of 1945 by 10,500,000 pounds for the United Kingdom and for the first 6 months of 1945 by 20,000,000 pounds for the Continent.²² This increased allotment enabled the Quartermaster Service to provide approximately 27,000,000 pounds of freshly roasted and ground coffee to the 3,000,000 troops who fought on the Continent during the 300 days between D-day and VE-day.

ROASTING

In the fall of 1942 there were only two mobile coffee roasters in the United Kingdom,²³ and there were no personnel trained to operate them.²⁴ By the 16th of January 1943, however, eight more roasters had arrived. One of these was operating at Oakley Farm, and plans were in progress for setting up the others at depots. A school for coffee roasters would be established at Oakley Farm as soon as personnel were assigned for the operation and maintenance of the coffee roasting units. Colonel R. F. Carter, Chief of the Subsistence Division, asked that 17 enlisted men be sent to Oakley Farm.²⁵

On the 8th of February the Chief of the Subsistence Division notified the Plans and Training Division that 96 casualties would be required to operate 31 roasting units. The 31 units would be able to supply coffee for 744,000 men. At that time British civilian concerns through the Ministry of Food were committed to the roasting of coffee for 340,000 men.²⁶

The number of roasting units needed in the theater was reduced to 23 on 14 March 1943. TORCH would receive 10 of the units, the United Kingdom 10, and 3 were to be held as reserves. The reduction was made because the workday had been increased from 8 to 16 hours, production was being substantially supplemented by civilian roasters, and too large a strength figure had been anticipated.²⁷

Misinterpretation of the requisition brought about considerable correspondence and consequent delay in the arrival of the coffee roasting units.²⁸ The status report for the week ending 31 October 1943, however, showed that 23 semimobile coffee roasting units were in the European Theater, that 5 were expected, and that 41 more were on order and would be delivered by 31 December. The 11 units then operating roasted 18,055 pounds of coffee daily, or 66 percent of the total production in the theater. British roasters supplied 5,755 pounds daily, or 21 percent; and canned coffee to the amount of 3,520 pounds, or 13 percent, was used daily.²⁹

Roasters were of no use without trained personnel to operate them. On 13 February 1943 the detailed program of instruction for the Coffee Roasters' School was approved.³⁰ The course, which would cover a 12-day period, was designed to teach personnel to roast and grind coffee under field conditions. Of the 76 hours, 70 were to be spent in practical work, and 6 were to be given over to lectures and demonstrations.³¹

At first, casualties were trained at the school and then sent to depots to operate roasters. On 26 June 1943, however, Brigadier General Littlejohn recommended that coffee roasting companies be activated. In a letter to the Commanding General of the theater, he said, "The units now in operation are inadequately manned by small groups of enlisted men who do not belong to any organization. It is desirable for purposes of administration, discipline, and training that the detachments now assigned and to be assigned to each unit of machinery be organized into a self-contained unit." He suggested that a coffee roasting company be activated in the United States at the Fort Meade Bakers and Cooks School, or that men who had been trained at Fort Meade be transferred to him as casualties to be organized into a company in the United Kingdom.³²

On 9 July Brigadier General Littlejohn submitted to the Commanding General of the theater a Table of Organization and a Table of Basic Allowances for a coffee roasting company. One company, he said, operating 20 units on an 8-hour-a-day basis could provide 40,000 pounds of roasted coffee daily, or enough coffee for 666,000 rations.³³

In the fall, however, Brigadier General Littlejohn evolved a plan that increased the efficiency of the coffee roasting program. He combined bread baking and coffee roasting

operations and made it possible for troops in the field to be supplied with two commodities from a single source. Experiments under field conditions had proved that the plan was feasible. A standard Jabez Burns coffee roasting machine had been transported on two Q-trucks and had been operated satisfactorily along with mobile baking equipment. Therefore, merely by adding coffee roasting equipment to the Table of Equipment of the Quartermaster Bakery Company, Mobile (Special), Brigadier General Littlejohn was able to provide both bread and coffee rations with a minimum of personnel.³⁴

The Jabez Burns roaster could be operated on any level site that had 2,500 square feet of storage space. It consisted of 12 cases and had a gross weight of 8,000 pounds. When static, it was mounted on a platform 8 feet square. When mobile, it was mounted on a trailer.³⁵

For the week ending 20 December 1943, 19 of the 32 coffee roasters then in the United Kingdom produced 49,481 pounds of coffee. As United States troops in the United Kingdom increased in number, more units were operated. For the week ending 31 May 1944, 32 roasters averaged a daily production of 98,968 pounds of coffee.³⁶

In plans for operations on the Continent soluble coffee was to replace canned coffee in the B ration from D-day through D-plus-30-day; canned coffee was to be used in the B ration from D-plus-31-day through D-plus-90-day.³⁷ The production of fresh coffee on the Continent was planned to begin on D-plus-60-day, with a percentage of distribution paralleling that of bread (see ch. 5).

The Bakery and Coffee Roasting Plan for the Static and Operational Phases in the European Theater was adopted in January 1944. Phase I of this plan dealt with operations in the United Kingdom, and phase II with operations on the Continent.³⁸ During phase I roasters were to provide coffee for the 1,280,000 American troops who were scheduled to be in the United Kingdom prior to D-day. Each Quartermaster Bakery Company, Mobile, (Special) would train six coffee roasting specialists. The daily requirement of coffee would be 115,440 pounds. Of this amount, the 32 coffee roasting units that were expected to be on hand by 31 December 1943 would produce 102,400 pounds, and British civilian roasters 13,040 pounds. Green coffee was to be purchased by the United States Army from Central America

and South America and transported to the European Theater in British ships. During phase II coffee roasting, which was to begin on D-plus-60-day, would be done by 55 coffee roasters attached to Quartermaster Bakery Companies, Mobile, (Special). These units would be able to provide coffee for 2,200,000 troops. In order to meet the requirements, it was necessary to requisition 23 additional roasters.³⁹

The basic bakery plan, which was adopted on 17 November 1943, and its subsequent revisions recommended that bakery companies move to the Continent with their complete equipment. Later it was found that heavy equipment could not be transported earlier than D-plus-45-day. The bakery companies were ordered, therefore, to box, crate, and mark their coffee roasting equipment, which would be stored in Depot Q-140 to be shipped to the Continent later.⁴⁰

Coffee roasting on the Continent was begun on D-plus-49-day, 25 July 1944. From ADSEC Headquarters, Lieutenant Colonel E. J. Fitzpatrick wrote the joyful news as follows:

Green coffee has been roasted in Normandy! Gold has been discovered in California! Surely these are events of parallel historic importance.

There was some minor difficulty in locating the cargo at Air Strip #2, to which it had been flown for reasons which are undoubtedly clear to someone. This was dealt with expeditiously, and roasting done the next day.⁴¹

By the 14th of August the Quartermaster Service had received 69 coffee roasters. Of these, 37 were in the United Kingdom; and 32 were operating on the Far Shore, 21 of which had been completely mounted on trailers as early as 7 August.⁴²

On 30 August Colonel Willkie was able to report that during the months of September and October 21,132,036 pounds of green coffee, 10,293,447 pounds of roasted and ground coffee, and 568,792 pounds of soluble coffee would be available for the Continent.⁴³ Subsequently, there was an uninterrupted flow of green coffee, which was roasted and ground and served to men in the field.

REFERENCES

- ¹ Cablegram S-447, CG, ETOUSA, to AGWAR, 21 July 1942.
- ² Letter, Maj. Gen. C. A. Hardigg to Maj. Gen. Frank F. Scowden, 12 September 1942; and letter, Chief, Procurement Division, to CG, ETOUSA, 30 October 1942.



Figure 30.—Storage Section of a Coffee Plant on the Continent.

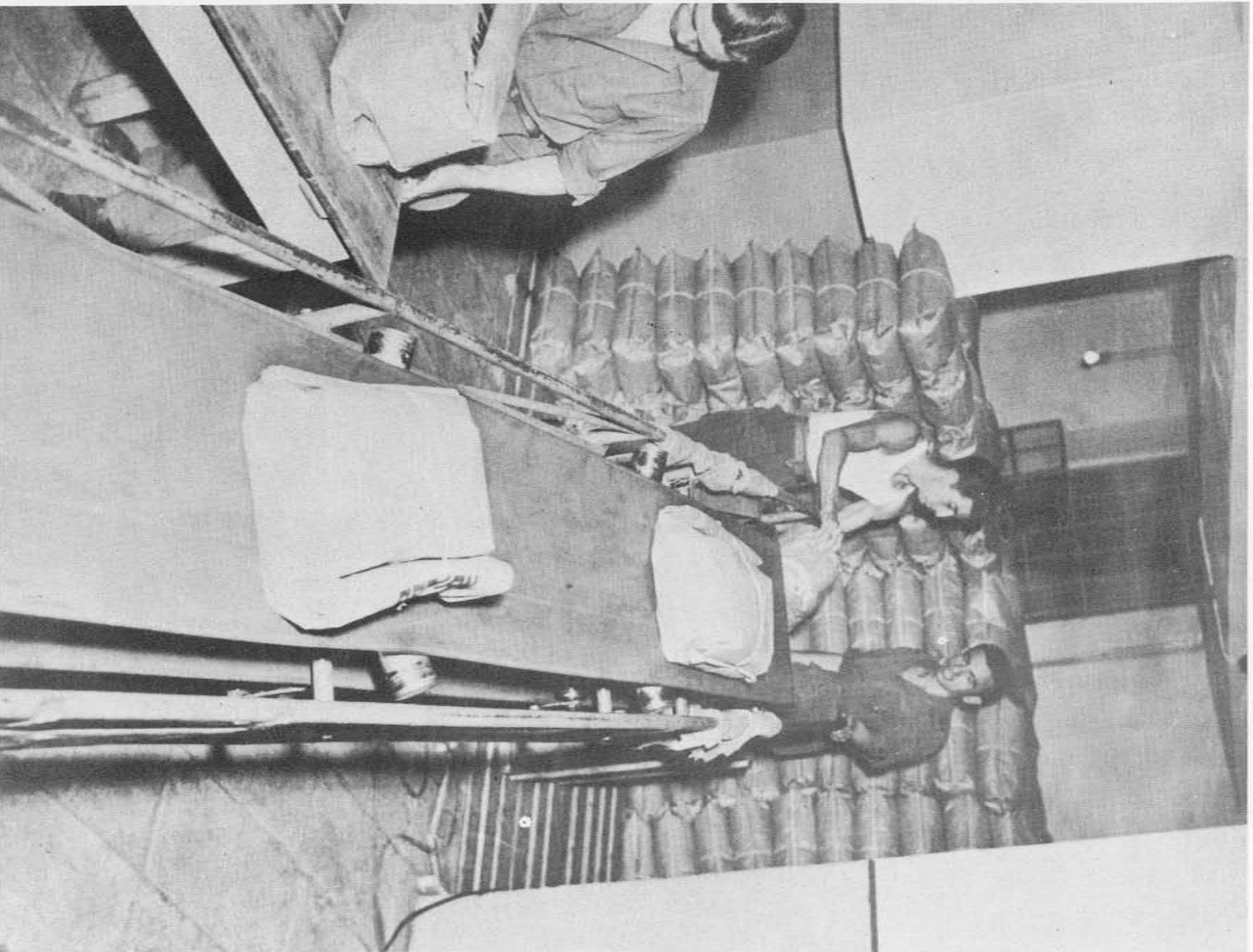


Figure 31.—Blended, Roasted, and Ground Coffee Ready for Delivery to Distributing Points.

- 3 Letter, MOF to Chief, Subsistence Division, 5 February 1943.
- 4 Letter, OCQM to MOF, 5 December 1942.
- 5 Letter, MOF to OCQM, 20 January 1943.
- 6 Memorandum, Chief, Subsistence Division, to CQM, 21 January 1943.
- 7 Report of Conference at USA Procurement Headquarters, Selfridge's Annexe, 4, 5, and 9 February 1943.
- 8 Letter, MOF to OCQM, 16 March 1943.
- 9 Memorandum, Chief, Subsistence Division, to CQM, 7 April 1943.
- 10 Memorandum, DCQM to Chief, Procurement Division, 16 April 1943.
- 11 See note 6, *supra*.
- 12 Memorandum, Chief, Coffee Roasting Branch, to Chief, Subsistence Division, 1 May 1943.
- 13 Letter, MOF to Chief, Coffee Roasting Branch, 8 May 1943.
- 14 Memorandum, Chief, Coffee Roasting Branch, to Chief, Procurement Division, 13 July 1943.
- 15 Memorandum, Chief, Coffee Roasting Branch, to Chief, Subsistence Division, 16 July 1943.
- 16 Memorandum, DCQM to CQM, 6 August 1943.
- 17 Memorandum, Chief, Subsistence Division, to DCQM, 9 August 1943.
- 18 Memorandum, Chief, Procurement Division, to CQM, 27 September 1943.
- 19 Letter, CQM to MOF, 15 October 1943.
- 20 Memorandum, DCQM to Chief, Subsistence Division, 24 August 1944.
- 21 Letter, Chief, Subsistence Division, OCQM, to Chief, Subsistence Division, UK Base, 15 October 1944.
- 22 Letter SPQSS 435, OQMG to CG, NYPE, 17 November 1944.
- 23 Cablegram S-2167, CG, ETOUSA, to AGWAR, 21 October 1942.
- 24 See note 1, *supra*.
- 25 Memorandum, Chief, Subsistence Division, to Executive Officer, 16 January 1943.
- 26 Memorandum, Chief, Subsistence Division, to Plans and Training Division, 8 February 1943.
- 27 Cablegram K-522, DCQM to PEMBARK, 14 March 1943.
- 28 Cablegram, PEMBARK to Hq, SOS, ETOUSA, 26 March 1943; memorandum, DCQM to Chief, Subsistence Division, 6 April 1943; memorandum, Chief, Coffee Roasting Branch, to Chief, Subsistence Division, 11 April 1943; and cablegram, Chief, Subsistence Division, to PEMBARK, 5 April 1943.
- 29 Weekly Status Report, "Coffee Operations," OCQM, 31 October 1943.
- 30 Memorandum, Chief, Subsistence Division, to Chief, Plans and Training Branch, Operations Division, 3 February 1943 with 2nd indorsement, CQM to Chief Operations Division, 13 February 1943.
- 31 Detailed Program of Instruction, Coffee Roasters' School, OCQM, (undated).
- 32 Letter, CQM to CG, ETOUSA, 26 June 1943.
- 33 Letter, Q-Sub 430, CQM to CG, ETOUSA, 9 July 1943.
- 34 Cablegram R-3879, AGWAR to ETOUSA, 4 October 1943; letter AG 322, OB-I-SPMOU-M (8 October 1943), 12 October 1943; and memorandum, Senior DCQM to OCQM, 20 October 1943, with inclosure.
- 35 Record of an interview with Lt. Col. John J. MacManus, Historical Branch, OCQM, (undated).
- 36 OCQM Current Operating Data Book, OCQM, June 1944.
- 37 The Class I Plan for an Operation on the Continent, OCQM, 28 May 1944.
- 38 The Bakery and Coffee Roasting Plan for Static and Operational Phases in the European Theater, OCQM, January 1944.
- 39 Memorandum, Chief, Plans and Training Division, to Chief, Subsistence Division, 22 January 1944.
- 40 Memorandum, Chief, Subsistence Division, to CQM, 12 May 1944.
- 41 Chief, Subsistence Division, ADSEC, to Chief, Subsistence Division, OCQM, 25 July 1944.
- 42 Status Report of Bakery Operations on the Continent, OCQM, 14 August 1944.
- 43 Memorandum, Capt. A. S. Levine to Col. Robert T. Willkie, 30 August 1944.

CHAPTER 7

THE OPERATIONAL RATION

Combat rations are among the remarkable developments of World War II. Though men engaged in operations on the European Continent could not be served the homelike A- or B-type rations, they were provided with food high in calories and vitamins. The combat rations of 1944-45 were a far cry from the beef, rum, and vinegar rations of the Revolutionary War, the dried meat and hardtack of the Civil War, or the baked beans and corned-beef hash of World War I. Years of planning, experimenting, and testing lay behind the feeding of those millions of men who were engaged in combat thousands of miles from the home base.

DEVELOPMENT IN THE UNITED STATES

The five major combat rations used in the European theater had been conceived in the War Department during the decade immediately preceding the outbreak of World War II.

The C Ration

The C ration had its beginning in 1932, when a colonel in the Sanitary Corps submitted to the Quartermaster Subsistence School "a balanced meal in a can." As further developed, it consisted in 1938 of a 12-ounce can, containing 8 ounces of bean cereal, 1 ounce of soluble coffee, and a 3-ounce chocolate jam bar. Though tests were conducted from time to time, the ration had its most serious try-out in 1940 during maneuvers of the Third and Fourth Armies. The first procurement directive, calling for 1,500,000 C rations, was issued on 13 August 1941, and the first delivery was made the following October. By March 1943, 96,245 C rations had been procured. Experiments and tests had been continually conducted to the end that the components and packaging methods might be improved. In May 1943 the C ration consisted of six cans with a net capacity of 12 fluid ounces. Three of the cans were meat (m) units and three bread (b) units. The ration was packed to withstand any kind of weather from 50° below zero to 120° above zero. The food could be eaten either hot or cold but tasted better hot. The beverage powders contained in the b units were soluble in hot or cold water.

The K Ration

The K ration was developed to meet the needs of troops engaged in highly mobile warfare introduced by the early German blitzkriegs. From a concentrated food known as pemmican, which was first used by the American Indians, food specialists got the idea that resulted in the development of the K ration. Originally pemmican was made of lean venison, which had been dried, pounded into paste, mixed with fats and a few berries, and pressed into cakes. A similar food was made later from dried beef and fruits. This was one of the foods upon which Arctic and Antarctic explorers depended. Tests of pemmican, made at the University of Minnesota in 1940, were reported unfavorably; so the proposal to use the pemmican biscuit as the sole ingredient of a new operational ration was discarded. In the summer of 1941 a sample of a ration was submitted by the Quartermaster Corps Subsistence Research Laboratory. It contained 9 pemmican biscuits, 1 peanut bar, a packet of raisins, and a tube of bouillon paste, and weighed 5½ ounces. The second sample contained 12 pemmican biscuits, a 1½-ounce D ration chocolate bar, a meat preparation, and a fruit powder, and weighed 8½ ounces. This ration was the forerunner of the field ration K and marked the beginning of research directed toward obtaining the greatest possible food value in the smallest possible space.

After a prolonged period of testing, the ration was standardized on 25 May 1942. By March 1943, 50,160,000 K rations had been procured.* The composition of the K ration appears in appendix XXVII.

The K ration proved to be the most nearly perfect combat ration ever developed for mobile troops. It was nutritional and palatable. Its packaging was tough enough to withstand the hardships of battle. The meat, cheese, and egg components were in hermetically sealed cans; and the other components were in sealed bags. All items were inclosed in an inner carton, which was dipped in a wax that did not melt until the temperature exceeded 145°. Over this carton was an outer carton sealed with a water-resistant glue.

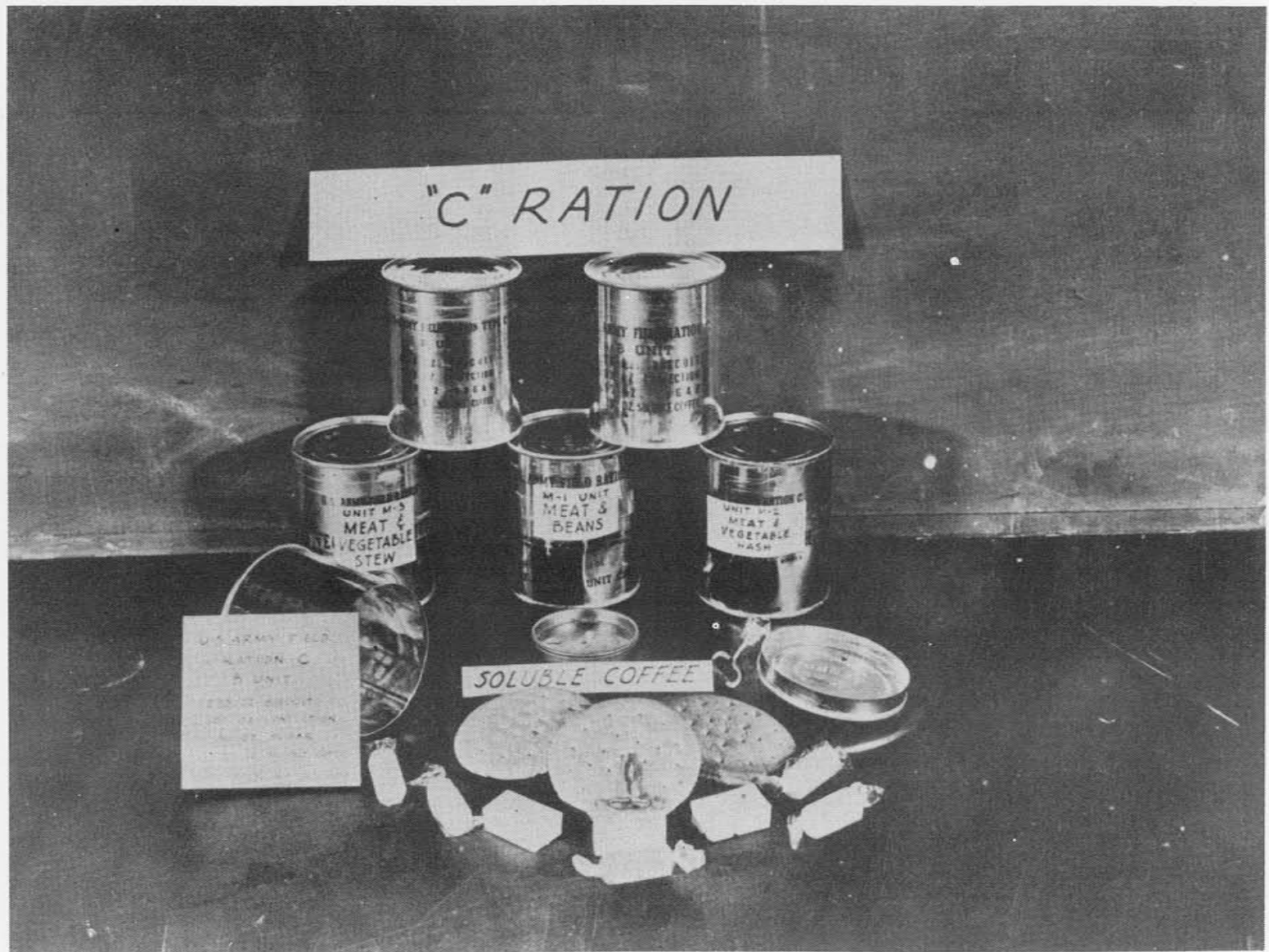


Figure 32.—Components of the C Ration.



Figure 33.—Components of the K Ration.

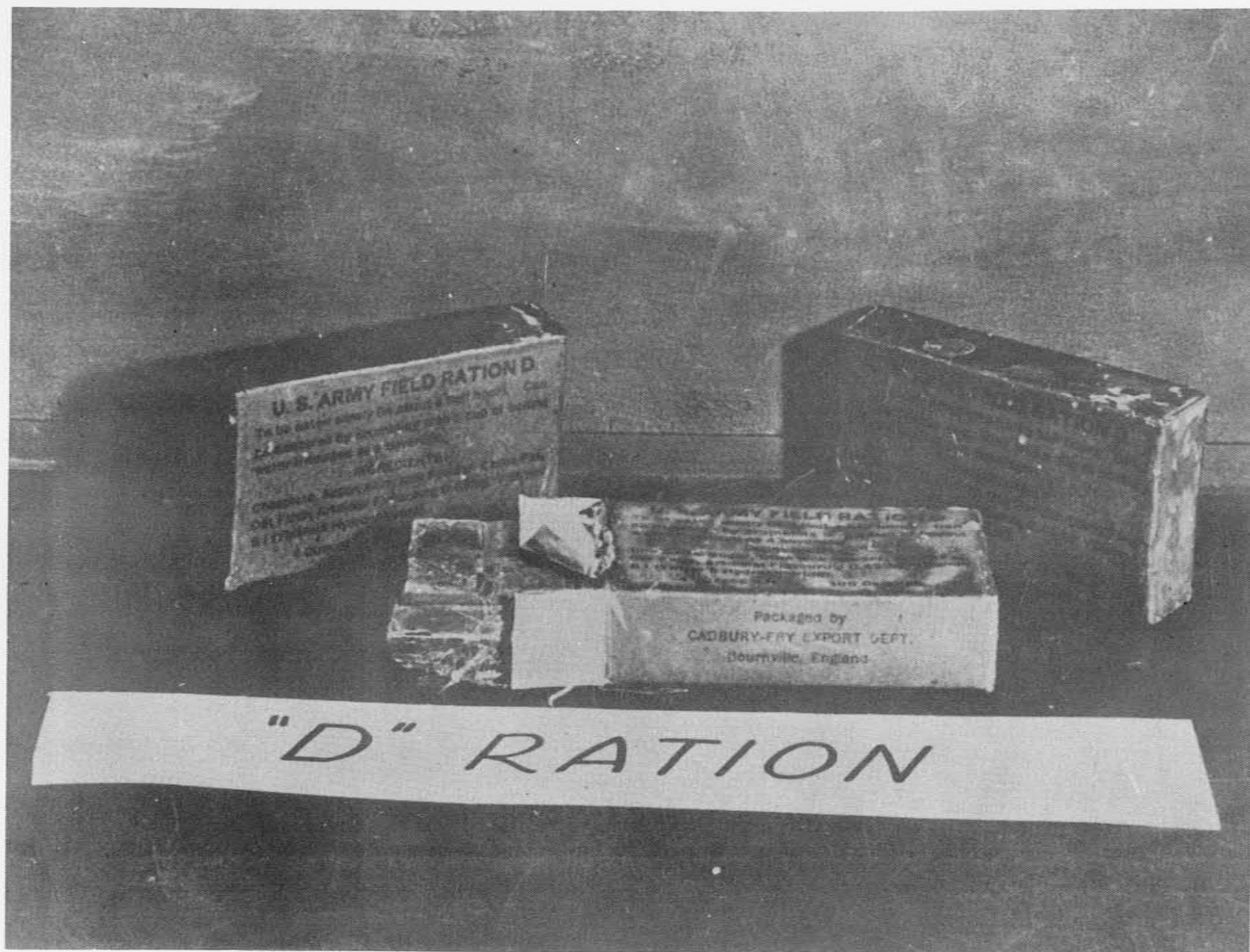


Figure 34.—A D Ration Procured in Great Britain.



Figure 35.—Components of the 5-in-1 Ration.

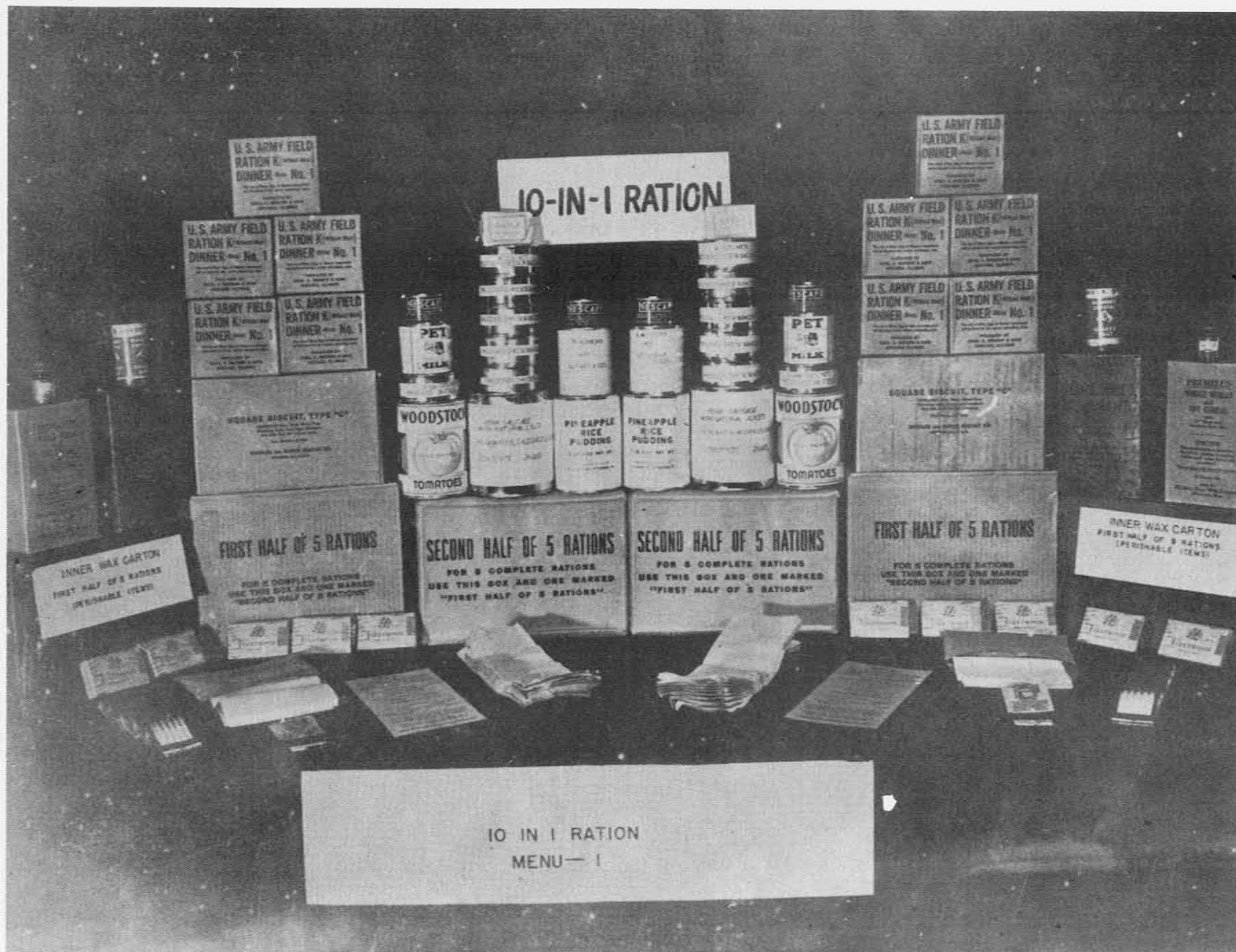


Figure 36.—Components of the 10-in-1 Ration.



Figure 37.—Components of the 12-in-1 Ration.

The D Ration

Indian warriors in the southwest territory used to carry an emergency ration that consisted of jerked beef and a mixture of meal made of mesquite beans and grains. Before World War I, United States Army officers had concocted an emergency ration made of powdered evaporated beef, cooked parched wheat, and sweetened chocolate. From this ration evolved the Armour Ration of World War I. While Captain Paul P. Logan was head of the Quartermaster Subsistence School between August 1934 and April 1936, he developed the chocolate emergency ration that was given the name "Logan Bar." In April 1937 arrangements were made with the Hershey Chocolate Corporation to manufacture 90,000 of these bars, which were to be used in field tests. On 17 October 1939 the "Logan Bar" was standardized as type D ration. It was procured on a large scale after the spring of 1941. A few minor changes were subsequently authorized. The formula used at the end of 1942 appears in appendix XXVIII.³

The 5-in-1 Ration

Observers who had served with the British Army in the Lybian campaign reported in the fall of 1941 that in their opinion the United States Army should provide complete rations specially packed for troops operating in desert areas.⁴ By January 1942 a project to develop such a ration had been started, and on 1 April a container that would hold five rations had been completed. After considerable experimentation, a procurement directive was issued in June 1942 authorizing the purchase of 30,000 5-in-1 rations to be used in tests. Large-scale procurement began on 16 August 1942, when 1,500,000 rations were ordered. Between June 1942 and April 1943, 9,530,000 5-in-1 rations had been procured.⁵

The 10-in-1 Ration

The possibility of packaging British rations in units of ten was suggested as early as 1941. The project for the development of the 10-in-1 ration got underway after the success of the British composite pack during the North African campaign. The ration was developed for the subsistence of troops in advance areas that could not be served by field kitchens. It was to be used by combat troops before actual combat, by troops isolated in small groups, and by highly mobile troops.⁶ Because the ration was greatly needed, it was developed and tested expeditiously. By the

end of April the project was completed for a 10-in-1 ration containing 3,548 calories in its three menus. During the months that followed the procurement of the first supply, the ration underwent a number of minor changes.⁷

PLANNING IN THE UNITED KINGDOM

The 10-in-1 Ration

Of the rations developed for use during the Continental operation, the 10-in-1 ration gave the Office of the Chief Quartermaster the greatest concern. Impressed by the success of the British composite pack, or 14-in-1 ration, Brigadier General Littlejohn had early directed work upon a similarly packed ration for United States troops. On 27 April 1943 he was able to write The Quartermaster General that a 12-in-1 ration had been developed and to recommend its approval by the War Department.⁸ The Quartermaster General replied on 31 May that the 10-in-1 ration was nearing completion.⁹ The two rations differed chiefly in caloric content, the 12-in-1 ration containing about 2,000 more calories than the 10-in-1.¹⁰

On 9 July 1943 Brigadier General J. L. Frink, of the Office of The Quartermaster General, expressed the opinion that even though some troops consumed as high as 5,000 calories daily they were exceptional cases and that to build a ration around such cases would be wasteful and would lead to overeating by a majority of the troops.¹¹

On 20 July 1943 Brigadier General Littlejohn recommended that the 10-in-1 ration be accepted for the European Theater but reiterated his opinion, based on European experience, that the caloric content was too low.¹² The deficiency would be made up by requisitioning and issuing 10 rations for 8 men in the front lines or at hard labor and 10 rations for all other groups of 10 men.¹³ The Quartermaster General replied that the caloric content of the 10-in-1 was being increased.¹⁴ A comparison of the menus provided by the 10-in-1 ration in November 1943 and in January 1945 shows the degree of improvement that was achieved (see app. XXIX).

Many field tests were conducted in the United Kingdom to determine not only the caloric content but the nutritional and palatable qualities of operational rations. The first of these was the extensive test directed in the fall of 1943 by the European Theater Ration Board under the presidency of Lieu-

tenant Colonel Wendell H. Griffith, of the Sanitary Corps.

In its preliminary report on 2 November 1943 the board stated that a "significant loss of body weight and evidence of hunger occurred when the 10-in-1 ration was issued on a 10-man basis" but that the energy requirement of the test troops was satisfied by the issue of the ration on an 8-man basis. Other findings of the board were that less cold beverages and some sort of heat unit should be included. The major recommendation was that the 10-in-1 ration be increased to 3,900 calories.¹⁵

A report submitted on 30 November 1943 to The Quartermaster General by the Director of the Quartermaster Corps Subsistence Research Laboratory confirmed the findings of the European Theater Ration Board and endorsed the recommendations for the increase in calories, the reduction of concentrated fruit juice powders in favor of coffee, and the inclusion of heat units.¹⁶

In the meantime, the Chief Quartermaster had transmitted to The Quartermaster General on 19 November the results of the European Theater Ration Board test and had suggested that the caloric deficiency be remedied if production schedules for the 10-in-1 ration had not yet been completed. Since the policy of issuing one 10-in-1 ration to every eight men had been previously disapproved, the Chief Quartermaster expressed his desire to increase the number of calories the men would receive by issuing one D ration bar with each ration.¹⁷

The Quartermaster General was of the opinion that the 4,500 calories expended during the tests was abnormal. Colonel Georges F. Doriot, Chief of the Military Planning Division, OQMG, notified Brigadier General Littlejohn on 9 December that the caloric value of the 10-in-1 ration would be increased to 3,850 calories.¹⁸

On 10 March 1944 a report from the Fatigue Laboratory, Harvard University, indicated that during field trials of operational rations conducted by the Canadian Army during January and February 1944 the daily expenditure of energy had ranged from 4,500 to 5,000 calories.¹⁹ These findings substantiated those of the original European Theater tests. In regard to nutritional adequacy of the ration, it had been noted that there had been an increased amount of grumbling and shirking of duty among the men tested and that 7 of the 11 casualties on the 2-day march

were among those subsisted on the 10-in-1 ration.²⁰ The Quartermaster General presented on 1 May 1944 an analysis of the 10-in-1 ration showing that the caloric content of the five menus had been increased to 3,867 calories.²¹

Final Days of Preparation

Subsistence planning for the invasion had three principal objectives: proper feeding of the soldier prior to embarkation and while on landing craft, scheduling to the Continent the proper percentages of operational rations, and supplying balanced A and B rations as the Continental liberation developed.

According to the OVERLORD and NEPTUNE plans for the Continental operation, each individual engaged in the assault stages would carry one D and one K ration. In addition, each organization would carry three rations per man, either C or K, which would be landed with the organization. A ration reserve would be built up to prescribed levels; and, in addition to this reserve, a daily maintenance would be snipped to the Continent. From D-day to D-plus-3-day this maintenance would consist of 60 percent C and 40 percent K rations; from D-plus-4-day through D-plus-14-day, 50 percent would be 10-in-1, 25 percent C, 20 percent K, and 5 percent D.²²

On 5 May 1944 Brigadier General Littlejohn wrote the Deputy Quartermaster General that, despite assurances from the Quartermaster General that the augmented 10-in-1 ration could be requisitioned, the New York Port of Embarkation had disapproved all such requisitions.²³ This accounted for the statement from the Office of the Chief Surgeon, on 8 June 1944 that at the start of the invasion depot stocks in the United Kingdom did not contain any of the newly developed 3,900-calorie rations but merely the original 3,400- and the modified 3,700-calorie types.²⁴

USE ON THE CONTINENT

Early experience with operational rations on the Continent bore out the expectation of the Office of the Chief Quartermaster in regard to caloric values and nutritional adequacy. Until D-plus-16-day all rations arriving on the Continent were C, D, K, or 10-in-1. The supply of these operational rations was transported in prestowed ships, loaded at the New York port weeks before the invasion and containing from three to eight 500-ton blocks of rations based on the percentages of

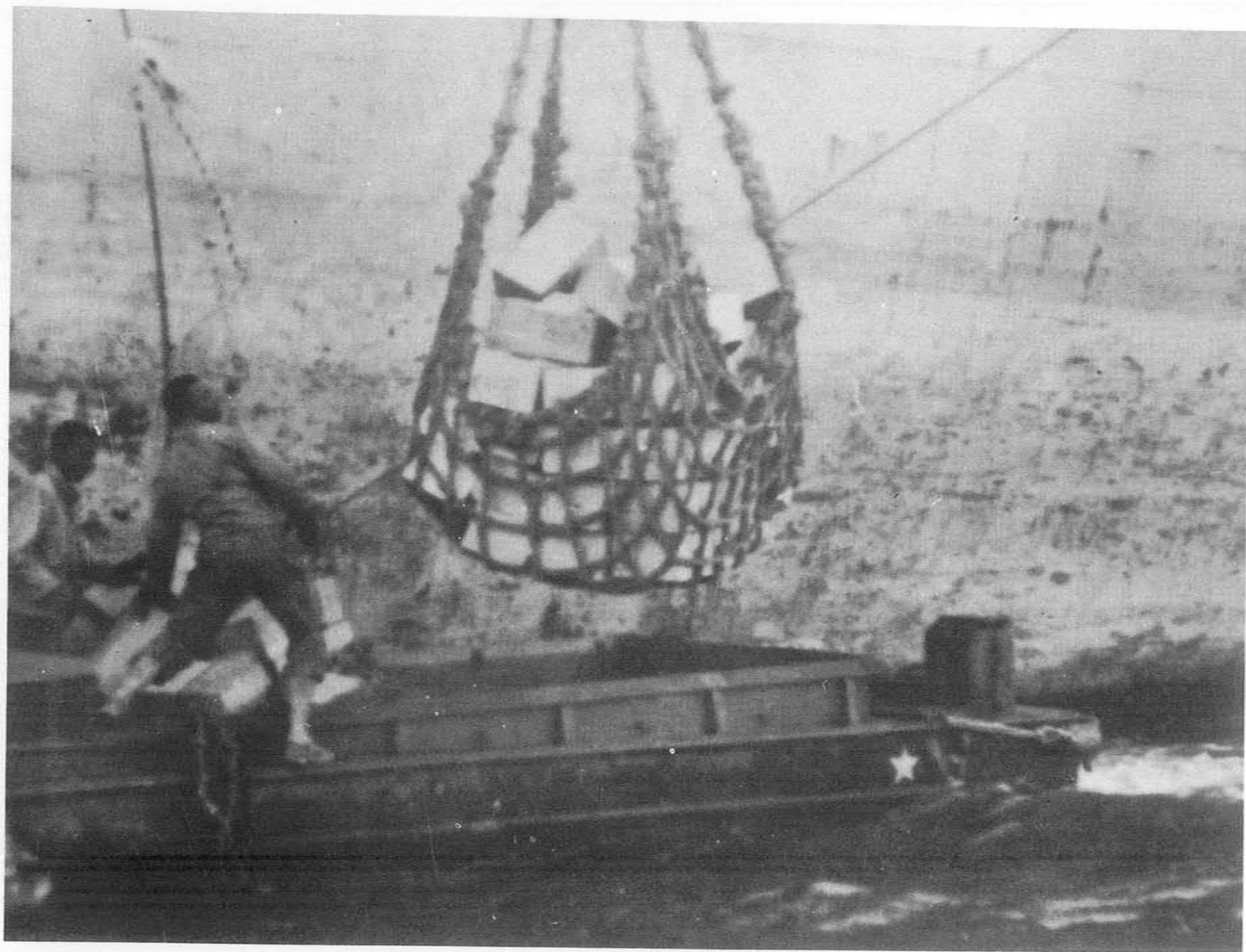


Figure 38.—Unloading Operational Rations from a Prestowed Ship to a DUKW.



Figure 39.—C Rations Being Served on the Continent.



Figure 40.—Serving the 10-in-1 Ration in a Captured German Home.

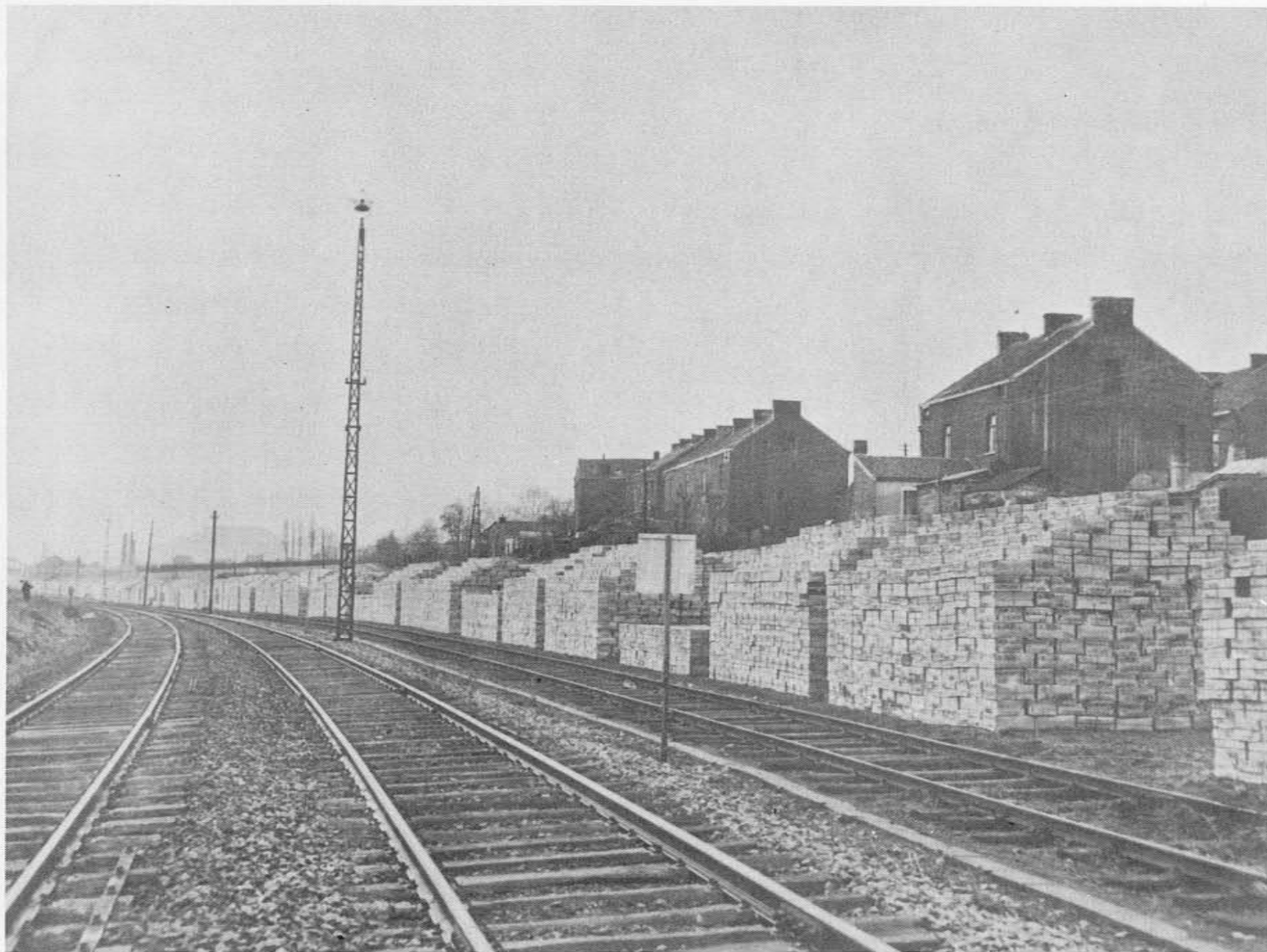


Figure 41.—Operational Rations—a 7-day Supply for 1,000,000 Men.

the types as calculated in the NEPTUNE plan.²⁵ By this method 59,574,122 operational rations were supplied during the first 27 days of the Normandy landings.²⁶

Rations and Assault

During the period of intense combat, troops ate when and where they had the time. Meals were the rations they carried with them or the composite-packed rations brought to them from the rear. There were no sheltered mess halls. The ground or a rock was used as a table or a chair. The aim was for adequacy rather than variety. Operational rations were a temporary expedient designed to sustain troops until the homelike balanced meal of fresh components could be provided.

Major General Littlejohn reported that during the campaigns in Normandy and northern France, type K was the most popular of the operational rations. Several more attractive types of biscuits were substituted for the hard biscuit of the original packs, and the often-discarded dextrose tablets were replaced by caramels and other confections. Some soluble coffee was added to the supper meal. Old and new menus are compared in appendix XXX.²⁷

The Office of the Chief Quartermaster conducted extensive tests to determine the nutritional adequacy, caloric content, and combat suitability of the C ration. After reports of these tests and other findings based on actual combat experiences were submitted to The Quartermaster General, the following changes made the menus more varied and attractive:

a. Several excellent items, fully as attractive and palatable as any of the meat product specialties offered in the grocery stores at home, were substituted for the stew-type meats of the original packs.

b. Cookies of several types were included. A variety of crackers replaced the indestructible C cracker.

c. Some soluble coffee was added.

d. More popular confections were substituted for the old-style hard candy.

e. An accessory packet of cigarettes, matches, chewing gum, halazone tablets, and toilet paper was included with each ration. A comparison of the components of November 1943 and January 1945 appears in appendix XXXI. A better carrier for ascorbic acid than the lemon or orange powders was

one of the few problems of the C ration to remain unsolved.²⁸

Even though earlier experimentation had shown the 5-in-1 ration to be unsatisfactory as a composite-packed ration, a factor that led to the development of the 12-in-1 ration, it continued to be packed in the European Theater because of its nutritive value. In the early stages of the operation the 5-in-1 ration was used exclusively by field hospitals.²⁹ The three menus composing this ration are included as appendix XXXII.

The three 4-ounce bars of chocolate comprising the D ration were not intended to sustain a soldier. Their primary purpose was to serve as an emergency ration to be carried by the troops in combat areas. In the European Theater an effort was made to use the D ration for the secondary purpose of supplementing the quantity of food in the C and K rations. This measure was not successful, however, because the D ration was unpopular.³⁰

On D-plus-21-day, when American forces were driving the last remnants of the German garrison from Cherbourg, Major General Littlejohn toured the battle areas and found that on the whole the 10-in-1 ration was quite popular but that the lemon and orange fruit juice concentrates were being discarded. He found also that the nutritive, energy-giving qualities of all rations should be augmented.³¹ On 2 July 1944 he requested The Quartermaster General to assist him in taking steps to end the entire ration controversy.³²

The Quartermaster General replied on 13 July that measures were being taken to augment the B ration and that the 10-in-1 ration had been changed to include the ETO suggestions for the improvement of the biscuits in the lunch menu and the inclusion of coffee in place of fruit juice powder in three of the supper menus. The fruit crystals, however, had been retained in the lunches because hot water for beverage making was not usually available at the noon meal.³³

On 22 August 1944 The Quartermaster General wrote the Chief Quartermaster that further improvements in the 10-in-1 ration were being made but, because of production difficulties, complete changes would not be ready until after 1 January 1945. Individual changes, however, would be made as rapidly as possible after 1 October 1944.³⁴

Operational Developments

With the approach of cold weather the subject of too much fruit powder and not enough coffee again came up for discussion. Reports from the quartermaster technical intelligence teams assigned to the armies showed that lemon crystals were unpopular with troops and that constant requests for coffee in each menu were being received.³⁵

Hence, on 2 December 1944 the Chief Quartermaster requested The Quartermaster General to reconsider substituting coffee for fruit juice and adding other components to improve the nutritive values of the rations.³⁶ The Quartermaster General replied on 13 December 1944 that investigation was being made into the matter of coffee substitution in the 10-in-1 ration.³⁷

The improved 10-in-1 rations did become available in the European Theater as the American armies crossed the Rhine and drove for a junction with Russian forces west of Berlin. Yet, even in these rations, the lemon and orange crystals had been retained.

The relative issue rates of the several types of operational rations formed a definite pattern during the Continental liberation. In the United Kingdom virtually all rations issued were type A. During the days of final preparation before the assault, operational exercises, troop movements in the United Kingdom, and the supplying of reserve rations for all types of transports, freighters, and landing craft threatened to drain far more C and K rations than had been requisitioned for these purposes. During the first 30 days of the invasion, however, consumption of K and C rations was much lower than had been anticipated. Consequently, a heavier load was placed on the stocks of 10-in-1 rations than on the Continent.

Contemplating the dwindling 10-in-1 stocks, the Chief Quartermaster made an effort to put troops on the B ration as quickly as possible. By D-plus-39-day, 71 percent of the troops were being subsisted on the B ration, against the 50 percent that had been prefigured in plans. B ration off-loadings were just reaching a point of equalizing supply and demand when the Saint-Lo breakthrough and the rapid advance through France to the Belgian border threw the entire Third Army and a part of the First Army back onto operational rations. Accumulated stocks were being depleted rapidly when the halt of the advance relieved the pressure on the disappearing rations. Left with one

recourse, the Chief Quartermaster set out to feed the perishable A ration to the armies stabilized along the German frontier. Before this program was completed, however, the German breakthrough in the Ardennes shifted the consumption back to operational rations. It was not until the American forces were across the Rhine that operational rations began to find their way to stock piles rather than to front line foxholes.³⁸ A comparison of the planned use with the actual use of operational rations appears in appendix XXXIII.

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CHAPTER 8

TRAINING

The subsistence responsibilities of the Office of the Chief Quartermaster included not only planning, procuring, storing, and distributing rations but also training personnel to carry out a well-rounded subsistence program. The training of mess officers and key enlisted personnel was begun soon after the European Theater of Operations was organized and continued during the Continental Operation and the period of occupation.

IN THE UNITED KINGDOM

Limited shipping space, the length of the supply line, and the strict system of rationing in the United Kingdom necessitated the efficient use of all supplies. The problem resolved itself into giving the armies nutritious, palatable meals with the maximum conservation of foods. Solution was achieved by means of a training program carefully planned and conscientiously executed.

Schools for Quartermaster Personnel

Specialized schools for mess personnel were proposed as early as June 1942. The Chief Quartermaster disapproved their establishment at that time because instructors were not available.¹ In September 1942, however, two schools were opened for the training of mess personnel. On 17 August 1942 the Chief Quartermaster set forth the plan to establish two schools for bakers and cooks: one at Shrivenham and another at Tidworth, the latter to be operated by the 95th Bakery Battalion.² The Shrivenham school opened on 8 September.³ It gave a 4-week course, which combined theoretical and practical work and stressed the duties of mess sergeants and cooks and the use of British equipment. From the graduates of the school qualified cooks would be furnished to units of the Army. The 95th Battalion school gave a 2-week course, concentrating upon the use of British equipment.⁴

During the first months of the Shrivenham school's existence qualified instructors were procured with difficulty. On 8 December 1942, however, Brigadier General Robert M. Littlejohn was able to write that he had obtained six experts in mess management and nutrition, who were to give three courses at

the American School Center in Shrivenham—one for bakers and cooks, one for mess sergeants, and one in mess management.⁵ By 30 December carefully planned programs of instruction had been prepared.⁶ In subsequent months it was found that the facilities at Shrivenham did not admit of increasing the number of students attending at one time. Therefore, on 1 April 1943 Brigadier General Littlejohn recommended that the courses be shortened and that opening dates be fixed at semimonthly intervals. Thus it was possible to increase the number of students without overcrowding.⁷

The programs of instruction at the school were kept sufficiently flexible to admit of changes to meet new situations. In April 1944, for example, the mess management course was revised and reviewed in order that officers and enlisted men might be taught the operation and maintenance of British and American field cooking equipment and the use of the new ration components that were to be used on the Continent.⁸

After the assault stage of the Continental operation, training of mess personnel was transferred to the Continent. In December 1944 the American School Center had been placed under the Ground Force Reinforcement Command. Three months later, on 3 April 1945, the Bakers and Cooks School was again made a quartermaster responsibility. As the 6821st Quartermaster Catering School, it was moved to the Continent, where it was successively located at Chartres and Metz and in September 1945 at Darmstadt.⁹ The courses that it offered appear in appendix XXXIV.

Mess Advisory Service

However good the schools might be, it was soon apparent that they could not turn out rapidly enough all the personnel needed. Clearly, some procedure had to be devised for bringing training to the field. Though the food issued to troops was good, much of it was so poorly prepared as to cause waste and to lower morale. On 24 October 1942 a plan was submitted to the Commanding General for a staff adviser to assist in the supervision of messes and to establish liaison between issuing depots and lower supply echelons.



Figure 42.—Quartermaster School for Bakers and Cooks, Normandy Base Section.

The length of time he would spend with individual organizational messes was to be determined by the training and experience of mess personnel and the condition in which the messes were found.¹⁰ In approving the plan, the Commanding General insisted that each commanding officer continue to be responsible for the messing of his troops and that, though he should employ all the expert assistance available, he could "not delegate his own responsibility."¹¹

The assignment of the first staff adviser on messes marked the beginning of the Mess Advisory Service, which accounts in large measure for the efficient subsistence program in the United Kingdom. In each unit a representative was appointed to confer with the staff adviser. From time to time these representatives were called together in conferences, at which were discussed such topics as waste, the adequacy and utilization of facilities, preparation of food, handling of garbage, use of publications, housing of messes, sanitation, and personnel problems. The first of these conferences was held on 8 December 1942. A year later the Chief of the Subsistence Division declared that the meetings had become "a big business" and had accomplished much good.¹² They were attended not only by quartermaster subsistence officers but also by representatives from the Office of the Chief Surgeon.¹³ Mess bulletins sent to the field added to the effectiveness of the training program.

Subsistence Laboratory

The schools and the Mess Advisory Service drew much of their material from the Subsistence Laboratory, which was established on 23 December 1942 in Shrivenham. In outlining the plan, Brigadier General Littlejohn had written 2 days earlier that he wanted the laboratory to be staffed by personnel with knowledge of bakery operation, special items of subsistence, and storage and packaging. The laboratory would develop menus, draw up programs for the schools, prepare data for the field, and serve as a trouble-shooter wherever needed.¹⁴

TORCH, which had been begun on 8 November 1942, was in full swing when the laboratory was started. Though troops in North Africa were not supplied wholly from the European Theater, a large part of the stock pile in Britain was used in support of task forces participating in the operation. Because the American 5-in-1 ration proved too small,

the laboratory developed the 12-in-1 ration, which was first used by North African troops (see ch. 7). As plans for the invasion of the Continent took shape, the laboratory conducted many other experiments with the ration. Between 26 February and 26 April 1944, for example, 132 separate tests were made.¹⁵

Fortunately, the personnel of the laboratory had increased in number and competence. In September 1943 its officer personnel consisted of a chief; an officer with knowledge of feeding, operating messes, and planning menus; an officer with general background in subsistence; and an officer proficient in the operation of the field range. Because these officers were permanently assigned, the laboratory could accomplish its mission and at the same time train a pool of transient personnel.¹⁶

The Mess Advisory Service and the Subsistence Laboratory worked together. To the laboratory the service brought officers who needed refresher courses and training in the use of new equipment and the employment of new methods. Returning to their posts, these officers passed on to troops the instruction they had received.

The Model Mess

The model mess program, begun early in 1943, did much to improve messing in the theater. A grading system was worked out under the following subdivisions: mess management, sanitation and personnel, storage, food preparation, food conservation and salvage, and equipment. Brigadier General Littlejohn defined a model mess as follows:

1. It should be superior in every respect, without extra food, extra equipment, or extra operating personnel.
2. Sanitation and cleanliness must be of the highest order.
3. Food must be well cooked and well served.
4. Menus must be balanced and well planned.
5. Food on hand must be properly stored and turned over sufficiently often to prevent loss.
6. Each man must receive an adequate quantity of food, and none of it must be placed in the garbage can.
7. Field ranges must be efficiently operated and maintained.

8. The mess officer and the cooks must be competent to operate their own mess and, in addition, to instruct outside personnel in all the items listed previously and in the maintenance of field ranges using leaded gasoline.
9. These model messes should be available to the Ground and Air Forces to assist in the solution of their problems. One mess officer must be on duty with the model mess practically the entire time.¹⁷

The purpose of a model mess was to provide for new units and for old units that had been somewhat remiss an example of messing standards in the European Theater of Operations. The model mess in each base section was selected by means of a contest, which was carried on continuously in order that a high standard might be maintained.

Recipe Contests

As an incentive to cooks and bakers, Brigadier General Littlejohn set up recipe contests. The first of these, running from May to October 1943, drew 37 entries. The recipes fell into five categories, each requiring the use of a concentrated or dehydrated food as a basis.¹⁸ The prize money was a sound investment, because the winning recipes were subsequently issued to the theater for use in preparing dehydrated foods.

Conservation

The nutritional adequacy of the ration was of first importance. This having been established, attention was turned to the conservation of subsistence supplies. Unpalatable food and incorrectly computed requisitions were found to be the chief causes of waste. Both evils were corrected.

The Bakers and Cooks School, the Mess Advisory Service, and the Subsistence Laboratory brought about the preparation of food that troops liked to eat. Such devices as the model mess contests and the recipe contests resulted in improving the appearance of messes and the palatability of food. In consequence, waste was lessened. The school taught its students how to make maximum use of nutrients. Sirups from canned fruits were saved for custards, puddings, cakes, and other desserts. The early ration had provided a daily allowance of about 1.2 ounces of cooking fat per man. The later ration provided only .85 ounce. Therefore, mess personnel were taught to save all edible fats. They were

also taught to use less heat and less water for cooking leafy green vegetables and yellow vegetables in order that water-soluble vitamins might not be lost. The introduction of the cafeteria-style mess did much to prevent waste, in that each man was required to serve himself and to eat all the food he took. Men soon learned to take no more than they could eat.

In October 1942 the Commanding General appended a handwritten note to a communication sent to the Commanding Officer of the Eastern Base Section in which he had urged that no food be wasted. "Faithful efficient commanders will accomplish this," he had added. "Indifferent commanders' messes will be penalized by an enforced under-issue until waste ceases."¹⁹ During the spring of 1943 publicity given to food shortages in America and waste in army messes caused Brigadier General Littlejohn to redouble his efforts to conserve food in the European Theater.²⁰

Reform in the procedure for issuing rations contributed to a reduction in waste. At first, requisitions were based upon morning report strength. A company composed of 300 men would draw 300 rations. If the average attendance at breakfast or supper was lower than that for dinner, deterioration or spoilage resulted. On 22 December 1942 a new procedure was adopted, which based requisitions upon a closer per meal estimate. On the reverse side of the new requisition form, space was provided for the listing of excess stock.²¹ Depot subsistence officers were required to pay strict attention to this excess stock and to take corrective action at the next date of issue. The new procedure brought about less deterioration of static stock in company supply rooms and smaller depot requisitions.

At first, hospitals were issued the same type of rations that was issued to troops. This practice resulted in the omission of special dietary items and the waste of items that sick men could not use. Conservation was promoted by the establishment of the hospital ration (see ch. 4).

Similarly, the introduction of a standard accounting system for messes in Great Britain contributed to the reduction of waste. On 27 August 1943 Brigadier General Littlejohn directed the Subsistence Division to set up a standard mess accounting system.²² The Chief of the Subsistence Division reviewed the accounting system then in effect and made a recommendation, which was accepted, that type A officers' messes collect

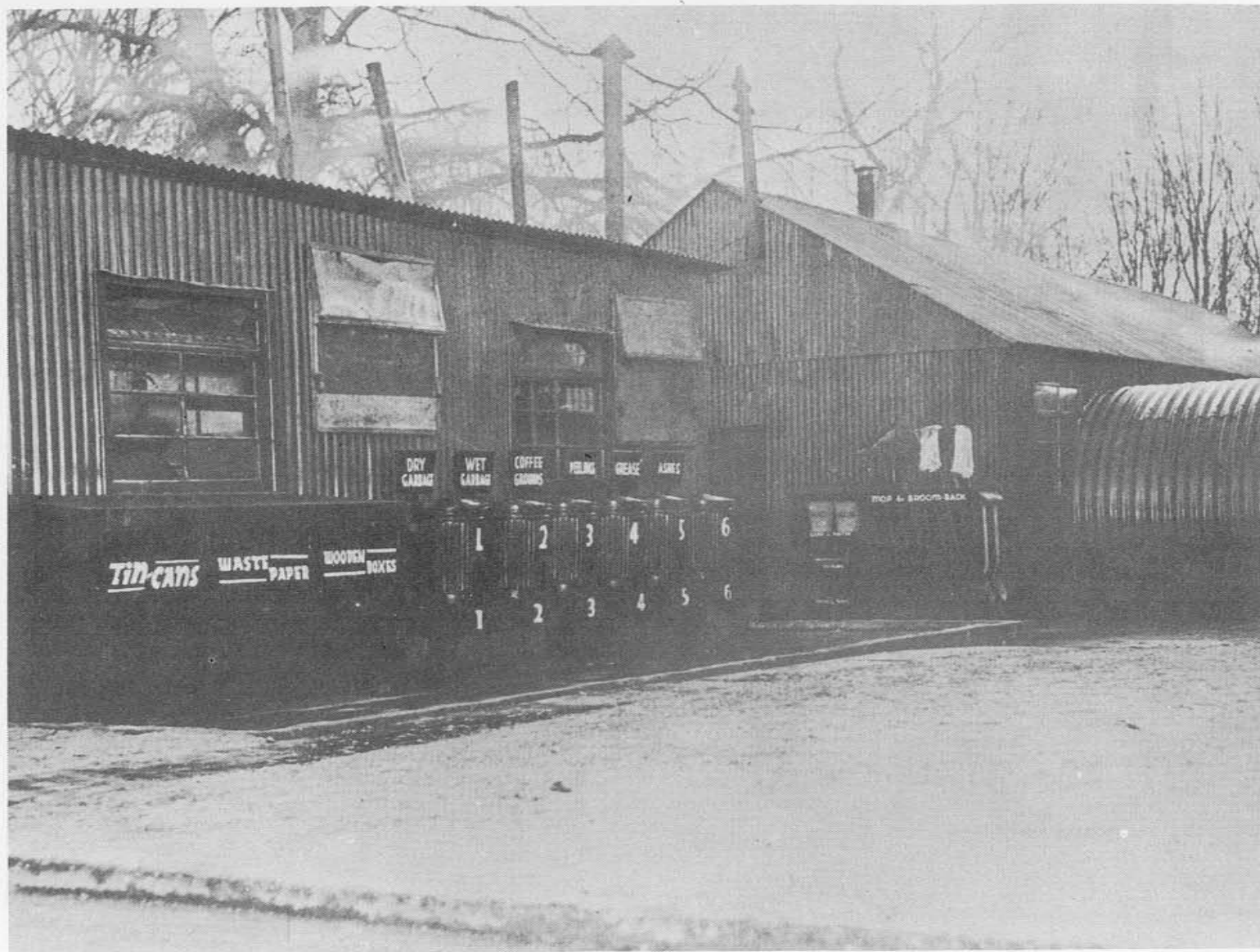


Figure 43.—Exterior of a Model Mess.



Figure 44.—Interior of a Model Mess.

only such additional assessments as were determined by the Mess Council and that types A and B enlisted men's messes maintain prescribed records.²³

Though the fallibility of personnel precluded the possibility of solving the problem completely and eliminating all waste from army messes, it was estimated on 30 November 1943 that the conservation program had effected a saving of more than 8,000 ship tons of food, or more than 10,900,000 meals.²⁴

ON THE CONTINENT

The training program that had proved efficient in the United Kingdom had to be adapted to meet the needs of the Continent. During the assault stages of the operation the nature of the campaign necessitated the use of operational rations. As the armies pushed deeper into France, the ration was augmented. By the time Saint-Lo was reached, the rear elements of advance units and all the Communications Zone that then existed were being fed the B ration. There was no time to construct sheltered mess halls. Meals could not be served under canvas until the stalemate immediately before the Belgian Bulge. It was then that the Quartermaster Service started to work on the type of food preparation and wholesomeness that had characterized operations in the United Kingdom.

Messing Teams

On 22 November 1944 Major General Littlejohn authorized the substitution of messing teams for the Mess Advisory Service. Each team was to consist of 1 qualified mess officer, 1 qualified WAC mess officer or hospital dietitian, and 10 enlisted men (mess sergeants, cooks, and bakers). They were to visit individual messes and assist in effecting a sound feeding program, which would give to troops a well-balanced, adequate diet, both nutritious and palatable. Available upon request to corps, division, and section commanders, they were to instruct and work with mess personnel.²⁵

The teams swung into action in December 1944. On 28 November the Quartermaster of the United Kingdom Base had written the Chief Quartermaster that six teams had been organized and trained. These would reach the Continent on 1 December.²⁶ The teams were part of the 537th Quartermaster Group.

Requests for the assignment of teams showed that commanding officers recognized the need for the service. On 26 November the

Ninth Army asked for a team.²⁷ Other requests came in so rapidly that on 7 January 1945 the Chief of the Subsistence Division wrote that 9 teams were needed.²⁸ On 26 January 1945 Major General Littlejohn authorized the creation of 12 complete teams.²⁹ Among the organizations served were the Ninth Air Command, the Third Army, the Ninth Army, ADSEC, the RED HORSE Staging Area, the Ground Force Reinforcement Command, and all types of organizations in the base sections.

The mess teams did not merely give advice and conduct classes. In many cases they actually established the mess, built new facilities, obtained spare parts, and worked with the mess personnel over a period of days. They showed mess sergeants how to prepare dehydrated foods, how to make palatable dishes from ingredients on hand, and how to follow the menu under difficult conditions. In the messes that they visited the teams checked personnel, cooking equipment, sanitation, preparation of food, operations, serving equipment, storage, the temperature of food when served, and waste. Their recommendations were usually accepted, even when replacement of personnel was necessitated. Among the major problems the teams encountered in the early months were field ranges that were dirty and in need of repair, poor physical set-up of messes, little baking except in hospital messes, inadequate storage facilities, lack of good substitutions on the menu, careless preparation of dehydrated foods, and inadequate supervision.

An example of the activities of a mess team assigned to a base section for the normal period of 1 month is contained in the report of the team assigned in January to the Normandy Base Section. In 30 days the team visited 23 messes, including a WAC enlisted mess, a general's mess, and messes at a quartermaster fumigation and bath company, an ordnance maintenance company, various hospitals, a medical battalion, an ordnance depot, and quartermaster gas, railhead, and sales store companies.³⁰

One team, which worked for 27 days at Camp LUCKY STRIKE in the RED HORSE Staging Area, found upon its arrival that the area was ankle deep in mud, with practically no transportation available and no planks for duckboards or construction, and that units passing through were taking the camp messing property. The team worked with two existing messes and set up two more. It supervised all work, directed the feeding of troops, and developed many ingenious expedients.

Since no trucks were available to haul gravel, each man who came to the mess was asked to bring a helmetful. In the absence of dunnage, salvaged tent ridge poles were used.³¹

The teams were able to demonstrate the practicability of serving hot meals on the troop trains of the Ground Force Reinforcement Command. Arguing that K rations be used at the noon meal instead of the sandwiches that had been served, Chief of the Subsistence Division insisted that the "objective is to give these troops that are going to the forward areas a nutritious, a pleasant, a palatable, a good meal. The objective is not to make it convenient or easy for the personnel who are operating. Every effort should be made to accomplish the first objective."³² He could make this forthright statement, because a mess team had proved that hot meals could be served on a troop train.³³

Commendations soon showed that excellent work was being done. "Superior results . . . were immediately effected within the messes," wrote the quartermaster of the Ninth Army.³⁴ From the quartermaster of the Normandy Base Section came the following commendation:

The officers and men of the Normandy Base Section have asked me to write a very special letter to you and express to the best of my ability their gratitude for the services of the Mess Team, consisting of 1st Lt. Helen A. Tremback, 1st Lt. James H. Bruner, 2nd Lt. Adele Moehl, and 2nd Lt. James B. Rebstock, that were sent down here.

The first two mentioned did a magnificent job, overcoming tremendous odds, opposition, and in one or two cases resentment, but by exerting sweet personality on the part of Lt. Tremback, and determination on the part of Lt. Bruner, they finally won over the entire command. They are directly responsible for the standard of the messes being raised in this Base Section from poor to superior. Lt. Bruner and the Enlisted Men assisted in the operation, obtaining of equipment and etc., while Lt. Tremback rolled up her sleeves and gave practical demonstrations of how to prepare quartermaster rations into appetizing and palatable dishes.

For their superior work, both of these Lieutenants were decorated with the Bronze Star Medal by the Commanding Officer of Normandy Base Section. When

I tell you that their work was outstanding and reflects the greatest of credit upon the Quartermaster Corps and themselves, I am not exaggerating . . . Today I am receiving many requests for the services and advice of the Quartermaster Mess Teams and Dietitians.

These requests are coming from all arms and services here and would be appreciated, if your office could see fit to send teams down here from time to time to visit and aid messes which were passed by previous teams.³⁵

EFFECTIVENESS OF PROGRAM

The training of mess personnel, which Brigadier General Littlejohn set in motion immediately after his arrival in the United Kingdom, was broadened and deepened while troops were based in the United Kingdom and while the Continental operation was in progress. In order that 3,000,000 troops, first quartered temporarily and then in the field, might be fed the sort of food that would make them fit for combat, mess personnel required specialized training of a highly technical nature. They had to know how to prepare dehydrated foods and how to make meals palatable, balanced, and nutritious even when facilities were inadequate and supplies insufficient. Food could not have played its considerable part in winning the war if the personnel who prepared and served it had not received thorough training.

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- 6 Memorandum, CQM to G-3, SOS, ETOUSA, 30 December 1942.
- 7 Memorandum, CQM to CG, SOS, ETOUSA, 1 April 1943.
- 8 Letter, Chief, School for Bakers and Cooks, American School Center, to Commanding Officer, American School Center, 4 April 1944.
- 9 U. S. Army Subsistence Experience in the European Theater, World War II, OTCQM, 1 November 1945, pp. 157-58.
- 10 Memorandum, QM, EBS, to CG, EBS, 24 October 1942.
- 11 Memorandum, CG, SOS, ETOUSA, to CQM, 30 October 1942.
- 12 Letter, Chief, Subsistence Division, to CQM, 8 November 1943.
- 13 Memorandum, Chief Surgeon, to CQM, 6 December 1943.

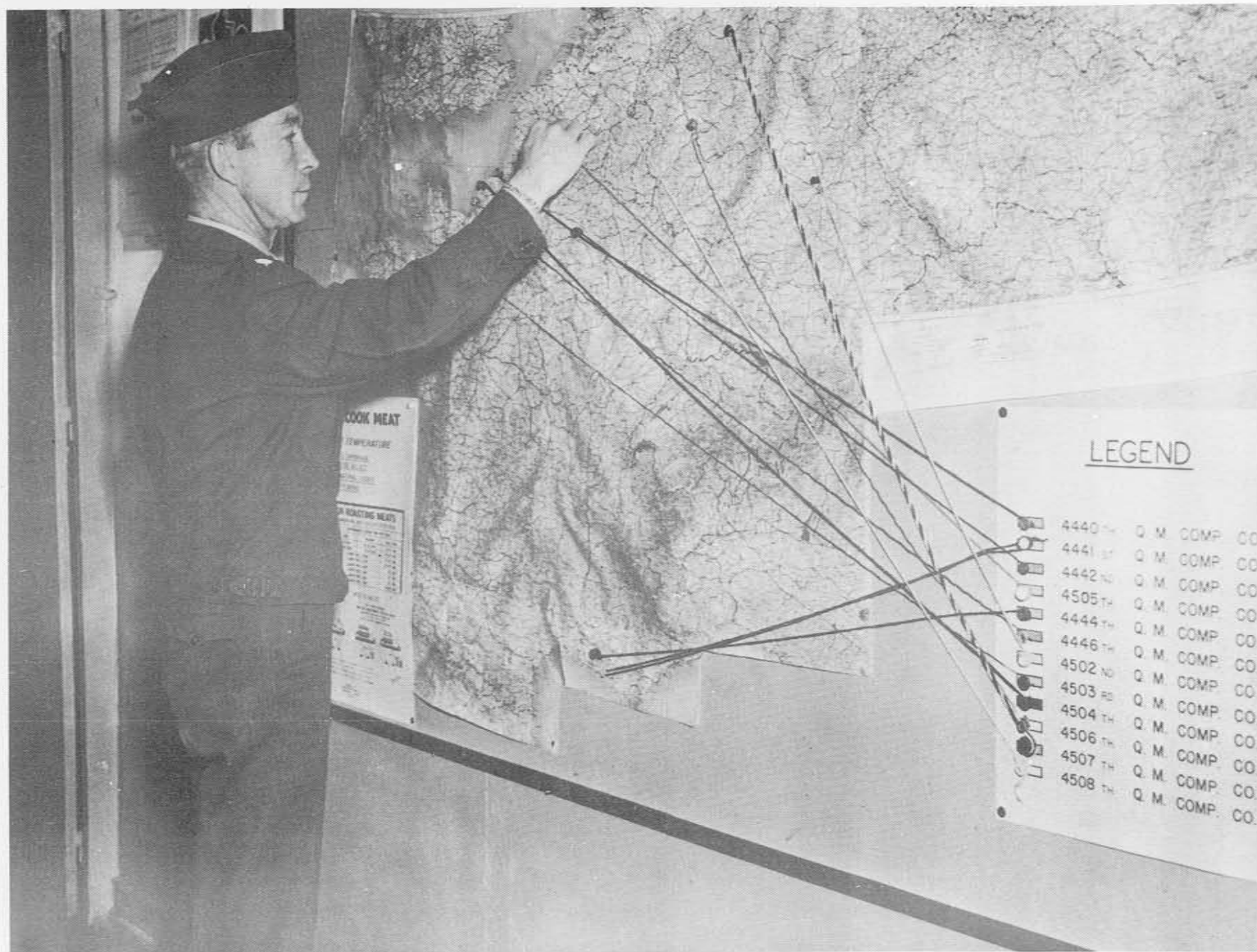


Figure 45.—Chief of Messing Teams Checking Location of His 24 Units.

- 14 Letter, CQM to DCQM, 21 December 1942.
- 15 Monthly Reports, Subsistence Laboratory, OCQM, March and April 1944.
- 16 Memorandum, Chief, Subsistence Division, to CQM, 5 September 1943.
- 17 Address by Maj. Gen. Robert M. Littlejohn, London, 14 January 1944.
- 18 Memorandum, Chief, Subsistence Division, to CQM, 12 October 1943.
- 19 See note 11, *supra*.
- 20 Letter, CQM to QM subsistence officers, all general depots; CO's, all quartermaster depots; QM's, all base sections; Assistant Commandant, School for Bakers and Cooks, 17 May 1943.
- 21 OCQM Form No. 4, 22 December 1944.
- 22 Memorandum, CQM to Senior DCQM, DCQM, and Chief, Subsistence Division, 27 August 1943.
- 23 Memorandum, Senior DCQM to DCQM, 1 October 1943.
- 24 Press release, 30 November 1943.
- 25 Circular Letter No. 84, OCQM, 22 November 1944.
- 26 Letter, QM, UK Base, to CQM, 28 November 1944.
- 27 Letter, File 331 GNMQM, QM, Ninth Army, to CQM, 8 January 1945.
- 28 Memorandum, Chief, Subsistence Division, to Maj. Patrick H. Buckley, 7 January 1945.
- 29 Memorandum, CQM to DCQM, 26 January 1945.
- 30 Inspection Report, 4442 QMC Comp Co, 4 February 1945.
- 31 Letter, Maj. Harry A. Kallberg to OCQM, 4 February 1945.
- 32 Letter, GFRC to CG, SOS, ETOUSA, 13 January 1945 with 1st ind., Subsistence Division, OCQM, 25 January 1945.
- 33 Memorandum, Maj. Patrick H. Buckley to Chief, Subsistence Division, 20 January 1945.
- 34 See note 27, *supra*.
- 35 Letter, Col. John H. Judd to Chief, Subsistence Division, 12 December 1944.

APPENDIX I

**ESTIMATED SPACE REQUIREMENTS FOR STORAGE OF UNITED STATES
SUBSISTENCE SUPPLIES IN THE UNITED KINGDOM***

1 August 1942 - 1 March 1943

(Long Tons)

Date	Area I	Area II	Area III	Area IV	Total
1 August	1,200	1,200	2,700	900	6,000
1 September	1,850	1,850	4,163	1,387	9,250
1 November	3,000	3,000	6,750	2,250	15,000
1 January	4,000	4,000	9,000	3,000	20,000
1 March	5,000	5,000	11,250	3,750	25,000
Total	15,050	15,050	33,863	11,287	75,250

July, August, and September, 1942

Item	Pounds	Long Tons	Cubic Feet
Beef	8,000,000	3,571.43	410,714
Pork	2,000,000	892.86	102,679
Bacon	1,008,000	450.00	51,750
Ham	1,504,000	671.43	77,214
Butter	1,600,000	714.29	82,143
Cheese	256,000	114.29	13,143
Total	14,368,000	6,414.30	737,643

*Letter, CQM to MOF, 4 August 1942.

APPENDIX II

**ANTICIPATED COLD STORAGE REQUIREMENTS FOR UNITED STATES SUPPLIES
IN THE UNITED KINGDOM***

1 September 1942 - 1 March 1943

(Long Tons)

Location	To 1 September 1942		To 1 November 1942		To 1 January 1943		To 1 March 1943	
	Beef	Butter	Beef	Butter	Beef	Butter	Beef	Butter
Area I The Northern, Western, and North and South Wales Divisions, and the counties of Shropshire and Herefordshire.	1,600	250	2,600	400	3,450	550	4,300	700
Area II The North Midland and Eastern Divisions (except coastal districts).	1,600	250	2,600	400	3,450	550	4,300	700
Area III The Eastern (except coastal districts), Southern, and South-western Divisions.	3,600	550	5,850	900	7,700	1,300	9,680	1,570
Area IV London and part of Southeastern and Eastern II Divisions.	1,200	200	1,950	300	2,600	400	3,220	530
Total	8,000	1,250	13,000	2,000	17,200	2,800	21,500	3,500

*Letter, MOF to CQM, 8 August 1942.

APPENDIX III

COLD STORAGE SPACE IN THE UNITED KINGDOM RESERVED AND IN USE BY UNITED STATES ARMY*

18 October 1943

(Long Tons)

Type of Storage	March		April		May		June		July	
	Space Reserved	Space in Use	Space Reserved	Space in Use	Space Reserved	Space in Use	Space Reserved	Space in Use	Space Reserved	Space in Use
14°—16° F.	13,605	6,167	13,605	5,000	13,605	4,407	16,035	3,452	16,035	2,634
28°—30° F.	200	161	300	243	500	360	500	376	1,000	743
35°—45° F.	100	59	350	263	200	98	200	44	200	95
Total	13,905	6,387	14,255	5,506	14,305	4,865	16,735	3,875	17,235	3,472
	August		September		October		November		December	
14°—16° F.	18,425	3,782	18,425	5,160	18,460		18,460		18,460	
28°—30° F.	1,000	893	5,000	1,470	5,000		5,000		5,000	
35°—45° F.	200	85	1,400	221	1,400		1,400		1,400	
Total	19,625	4,760	24,825	6,851	24,860		24,860		24,860	

*Memorandum, Chief, Subsistence Division, to Chief, Progress Division, 18 October 1943.

APPENDIX IV

**COLD STORAGE SPACE IN THE UNITED KINGDOM ALLOCATED TO
THE UNITED STATES ARMY***

8 October 1943

Freezing Space 14° to 16° F. (for Meats and Butter)

Space in Use (Long Tons)	Total Space Available (Long Tons)	Number of Troops Available Space Can Supply	Anticipated Troop Strength 31 December 1943
6,800	18,459	1,185,000	950,000

Chilled Space 28° to 30° F. (for Ham and Bacon)

Space in Use (Long Tons)	Total Space Available (Long Tons)	Number of Troops Available Space Can Supply	Anticipated Troop Strength 31 December 1943
2,400	4,995	1,244,000	950,000

Chilled Space 35° to 45° F. (for Cheese)

Space in Use (Long Tons)	Total Space Available (Long Tons)	Number of Troops Available Space Can Supply	Anticipated Troop Strength 31 December 1943
230	1,400	1,395,000	950,000

*Memorandum, Chief, Subsistence Division, to CQM, 8 October 1943.

APPENDIX V

DISTRIBUTION OF COLD STORAGE SPACE IN THE UNITED KINGDOM ALLOCATED TO UNITED STATES FORCES*

1 January - 30 April 1944

Freezing Space

Base Section or Depot	Space Available 1 Jan. 44 (Long Tons)	No. of Troops Space Avail- able Can Supply	Projected Troop Strength 30 Apr. 44	Total Space Reserved 1 Apr. 44 (Long Tons)	No. of Troops Total Space Reserved Can Supply
Southern	5,615	262,063	595,000	12,215	570,100
Western	6,204	289,553	452,000	10,204	476,166
Eastern	5,500	256,683	300,000	6,700	312,700
Central	1,855	86,576	20,000	2,205	102,900
Northern Ireland	3,460	161,481	133,000	3,540	165,216
Total	<u>22,634</u>	<u>1,056,356</u>	<u>1,500,000</u>	<u>34,864</u>	<u>1,627,082</u>

Chilled Space (for Cheese)

Liverpool	250	373,330	250	373,330
London	540	806,433	890	1,329,133
Bristol	20	29,866	20	29,866
Taunton	60	89,600	60	89,600
Total	<u>870</u>	<u>1,299,229</u>	<u>1,220</u>	<u>1,821,929</u>
 Grand Total	 23,504		 36,084	

*Quartermaster Plan for Operations in the United Kingdom, OCQM, 13 November 1943.

APPENDIX VI

UNITED STATES ARMY COLD STORAGE SPACE IN THE UNITED KINGDOM*

4 December 1943

	In Use 15 Nov. 43	Additional Available Through 31 Dec. 43	Expected to be in Use 31 Dec. 43	Anticipated Requirements Through 31 Jan. 44	Anticipated Requirements Through 28 Feb. 44	Anticipated Requirements Through 31 Mar. 44	Anticipated Requirements Through 30 Apr. 44
Freezing Space 14° to 16° F. (for Meats and Butter)	6,761	15,449	17,949	20,949	23,749	28,049	31,849
Chilled Space 28° to 30° F. (for Ham and Bacon)	476	1,050	2,500	2,800	3,200	3,800	4,300
Chilled Space 35° to 45° F. (for Cheese)	174	755	680	720	820	970	1,070
Total	<u>7,411</u>	<u>17,254</u>	<u>21,129</u>	<u>24,469</u>	<u>27,769</u>	<u>32,819</u>	<u>37,219</u>

*Letter, Chief, Subsistence Division, to MOF, 4 December 1943.

APPENDIX VII

DISTRIBUTION OF ESTIMATED COLD STORAGE REQUIREMENTS BY BASE SECTIONS*

17 March 1944

Type of Storage	From 1 March 1944	From 1 April 1944	From 1 May 1944	From 1 June 1944	From 1 July 1944
Northern Ireland Base Section					
14° to 16° F.	3,240	3,300	3,300	3,300	1,800
28° to 30° F.	240	240	240	240	240
Central Base Section					
14° to 16° F.	1,505	1,505	1,505	1,505	1,505
28° to 30° F.	800	800	800	800	800
35° to 45° F.	1,000	1,000	1,000	1,000	800
Southern Base Section					
14° to 16° F.	11,160	12,260	12,260	12,260	10,260
35° to 45° F.	60	60	60	60	60
Eastern Base Section					
14° to 16° F.	7,215	7,715	7,715	7,715	6,815
28° to 30° F.	1,200	1,200	1,200	1,200	1,200
Western Base Section					
14° to 16° F.	10,414	11,814	11,814	11,814	9,014
28° to 30° F.	1,330	1,330	1,330	1,330	1,330
35° to 45° F.	270	270	270	270	270
Total	38,434	41,494	41,494	41,494	34,094

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*Memorandum, Chief, Subsistence Division, to CQM, 17 March 1944.

APPENDIX VIII

MOVEMENT OF QUARTERMASTER SUPPLIES FORWARD ON DAILY TELEGRAM*

AUGUST 1944

Armies, ADSEC, and Base Section

G-4, Com Z

OCQM

Normandy Base Section

Depots

1. Armies submit their daily requirements by teletype through ADSEC to G-4, Com Z.
2. ADSEC submits daily requirements by teletype to G-4, Com Z, for ADSEC and Ninth Air Force.
3. Base sections submit daily telegrams direct to G-4, Com Z.
4. G-4, Com Z, allocates to each service the daily tonnage by class of supply and type of movement for each using group.
5. Storage and Distribution Division of OCQM receives daily tonnage allocations from G-4, Com Z.
6. Storage and Distribution delivers daily tonnage allocations and special instructions to each of the supply divisions of OCQM.
7. Each supply division of OCQM prepares distribution directives based on allocations, tying in distribution directives with daily telegrams.
8. Distribution directives submitted to Storage and Distribution Division for approval, recording, and distribution.
9. Storage and Distribution Division teletypes each army and base section, ADSEC, the daily tonnage allocation and movement instructions by class of supply. Also Storage and Distribution Division sends each army and base section, ADSEC, by courier the complete recapitulation by item, together with copies of distribution directives.
10. Storage and Distribution Division forwards distribution directives to Normandy Base Section (through G-4, Com Z) for action, with summary of tonnage allocations.
16. OCQM notifies each army and base section, ADSEC, what has been shipped on distribution directives, consistent with available information.
11. G-4 Normandy Base Section receives distribution directives from G-4, Com Z, and takes necessary action to insure prompt compliance, through Normandy Base Section QM.
12. Normandy Base Section QM delivers distribution directives to depots concerned.
13. Depots fill the distribution directives and move the supplies as directed transportation made available by base sections and train schedules as established.
14. Depots notify consignee of shipments by teletype or courier.
15. On prescribed form, depots notify OCQM of shipments on distribution directives, listing shortages, if any, and complete detailed data of the shipment.

*Memorandum, CQM to Chief, Storage and Distribution Division, 30 August 1944.

APPENDIX IX

BALANCED "BRICKS" OF TYPE B RATIONS FOR SHIPMENT*

Item	Unit	Total Quantity To Be Shipped	Shipping Guide	
			500 Long-Ton Train	60 Long-Ton Convoy
Beets, canned	pound	32,175	16,088	1,931
Peas, canned	pound	43,296	21,648	2,598
Tomato, Puree, canned	pound	21,648	10,824	1,299
Onions, dehydrated	pound	1,650	825	99
Potatoes, White, dehydrated, diced	pound	11,550	5,775	693
Peaches, canned	pound	44,550	22,275	2,673
Pineapple, canned	pound	44,550	22,275	2,673
Raisins, dry	pound	13,200	6,600	792
Chili Con Carne	pound	42,900	21,450	2,574
Luncheon Meats, canned	pound	49,500	24,750	2,970
Sausage Pork, canned	pound	49,500	24,750	2,970
Jam, assorted	pound	20,427	10,214	1,226
Marmalade, canned	pound	19,800	9,900	1,188
Butter, canned	pound	6,600	3,300	396
Cheese, canned	pound	6,600	3,300	396
Eggs, dehydrated	pound	9,488	4,744	596
Milk, evaporated	pound	71,775	35,888	4,307
Milk, whole, powdered	pound	1,650	825	99
Cocoa	pound	4,950	2,475	297
Coffee, roasted and ground, canned	pound	13,200	6,600	792
Grapefruit Juice, canned	pound	62,469	31,235	3,748
Candy, hard	pound	3,300	1,650	198
Crackers, type "C"	pound	3,300	1,650	198
Crackers, whole wheat	pound	3,300	1,650	198
Spaghetti, dry	pound	16,500	8,250	990
Maple Tablets	each	7,920	3,960	475
Catsup, Tomato	pound	4,620	2,310	277
Cinnamon	pound	42	21	3
Cornstarch	pound	825	413	50
Vanilla Tablets	each	10,560	5,280	634
Lemon Tablets	each	31,680	15,840	1,901
Mustard, dry	pound	42	21	3
Nutmeg	pound	42	21	3
Pepper, black	pound	248	124	15
Powder, baking	pound	1,155	578	69
Sauce, concentrated	pound	42	21	3
Vinegar, concentrated	pound	209	105	13
Cereal, whole wheat	pound	9,900	4,950	594
Salt	pound	3,300	1,650	198
Sugar, granulated	pound	26,400	13,200	1,584
		<hr/>	<hr/>	<hr/>
		694,863	347,435	41,723

*Circular Letter No. 43, OCQM, 7 September 1944.

APPENDIX X

CHARACTERISTICS OF SUBSISTENCE "BRICKS" FOR TYPE LOADING*

"Brick" for Period of D-plus-31-day to D-plus-60-day

Weight — 500 long tons

Volume — 750 ship tons

Content:

B Ration—120,000

C Ration— 20,000

D Ration— 37,000

K Ration— 20,000

10-in-1 Ration— 50,000

Candle-type heat units, 1½-oz.— 20,000

Candle-type heat units, 3-oz.— 20,000

"Brick" for Period of D-plus-61-day to D-plus-90-day

Weight — 500 long tons

Volume — 750 ship tons

Content:

B Ration—150,000

C Ration—220,000

D Ration— 30,000

K Ration— 20,000

10-in-1 Ration— 30,000

Candle-type heat units, 1½-oz.— 20,000

Candle-type heat units, 3-oz.— 12,000

*Cablegram KN-548, SOS, QM, to PEMBARK, 8 February 1944.

APPENDIX XI

THE FIRST AMERICAN RATION IN THE EUROPEAN THEATER OF OPERATIONS*

HEADQUARTERS United States Army Forces in The British Isles

CIRCULAR)
:)
NO. 8)

16 February, 1942.

SECTION I — RATIONS FOR U.S.A.F.B.I.

1. **Field Rations.** a. Field ration "A", as listed below, is prescribed as the normal ration for the United States Army Forces in the British Isles. Field rations "B", "C", or "D" may be issued in lieu thereof when condition of stocks makes it necessary and when Force Commanders so order for maneuvers, combat or other reasons:

Article	Quantity (ounces)	Article	Quantity (ounces)
Meat (1):		Coffee, roasted and ground	2
Bacon	2	Cocoa	.3
Beef, fresh (2)	10	Tea	.05
Chicken, fresh	2	Milk, evaporated	1
Pork, fresh	4	Milk, fresh	8
Eggs, fresh	1 (each)	Lard	.64
Dry vegetables and cereals:		Lard substitute	.64
Beans	.5	Butter	2
Rice	.6	Flour, wheat	4
Rolled oats	1.5	Bread, soft	8
Vegetables:		Baking powder	.09
Beans, string, canned	3	Macaroni, dry	.25
Corn, canned	2	Cheese	.25
Onions, dried	2	Sugar	5
Peas, canned	2	Cinnamon	.014
Potatoes	10	Flavoring extract	.02
Tomatoes, canned	2	Pepper, black	.04
Fruit:		Pickles, cucumber	.16
Apples, canned	1.5	Salt	.5
Jam or preserves	.5	Sirup	.5
Peaches, canned	1.2	Vinegar	.16
Pineapple, canned	1.2		
Prunes, canned	.3		

NOTES:

(1) On Thanksgiving Day and on Christmas Day the meat component will be, if obtainable: Turkey, drawn, 25 ounces or turkey, undrawn, 28 ounces.

(2) Alternate fore and hind quarters. The term "beef" means ordinary dressed carcasses. If boned beef is issued in lieu of carcass beef, it will be substituted at the ratio of 7 ounces to 10 ounces.

*Circular No. 8, USAFBI, 16 February 1942, p. 1.

APPENDIX XII

COMPARISON OF RATION SCALES PRESCRIBED FOR THE BRITISH AND AMERICAN FORCES*

August 1942

(Allowances in ounces unless stated otherwise)

Commodity	American Field Ration (Cir. No. 28, Hq. ETO)	British-American Ration	British Ration
Meat	15.0000	15.1430	9.5600
Egg	2.0000 (1 ea.)	0.2890 (1/7 ea.)	—(1)
Bread	7.0000	10.5700	10.5700
Flour	3.0000	2.5000	2.0000
Rice	0.6000	0.4290	0.4290
Oatmeal (rolled oats)	0.5000	1.4290	0.8570
Cheese	0.2500	0.5714	0.5714
Jam	0.5000	0.7500	0.5000
Sirup	0.5000	0.7500	0.5000
Margarine (butter)	2.0000	2.0000	1.5000
Vegetables, fresh	—	8.0000	5.7000
Vegetables, dried or canned	11.5000	0.5714	0.5700
Fruits, dried or canned	4.2000	2.0000	0.8570
Tea	0.0500	0.1430	0.2857
Coffee	2.0000	1.7500	—
Cocoa	0.3000	0.1875	0.1875
Milk, canned	1.0000	4.0000	3.0000
Milk, fresh	8.0000	—	—
Sugar	4.0000	3.0000	2.0000
Potatoes	8.0000	16.0000	13.0000
Salt	0.5000	0.5000	0.3750
Other Condiments and Provisions	1.1023	—	—(1)
Macaroni, dry	0.2500	—	—(1)
Pickles, cucumber	0.1600	0.1430	—
	73.4123 oz. or 4.588 lb.	70.7263 oz. or 4.420 lb.	52.4626 oz. or 3.279 lb.

(1) A monetary allowance of 2½ pence per man per day provided in lieu of these specific items.

*Memorandum, Chief, Subsistence Division, to CQM, 4 August 1942.

APPENDIX XIII-A

EVOLUTION OF ETO FIELD RATION A*

Table of Comparative Values ⁽¹⁾

Item	Minimum Levels	World War I Ration	Current U. S. A. A Ration	British Home Service Ration	British-American Ration	Original ETO A Ration	1 March 1943 ETO A Ration
Calories	⁽²⁾ 4,000	⁽³⁾ 4,100	4,217	⁽⁴⁾ 3,240	4,100	4,500	4,046
Net Weight (Pounds)	—	5.2	5.7*	3.3	4.5	4.3	4.8
Vitamin A (International Units)	5,000	11,500	13,000	4,040	10,800	5,600	11,000
Thiamin (Milligrams)	⁽²⁾ 2.1	3.0	2.8	2.4	3.1	4.1	3.4
Riboflavin (Milligrams)	⁽²⁾ 3.1	3.0	3.4	1.8	2.2	2.0	2.9 ⁽⁵⁾
Ascorbic Acid (Milligrams)	75	96	114	102	88	50	111 ⁽⁶⁾
Calcium (Grams)	0.80	0.75	1.07	0.66	0.69	0.83	0.90 ⁽⁵⁾

- (1) Calculations of all values of rations are based upon authorized allowances. Corrections have not been made for preparatory or serving losses.
- (2) Minimum levels are based upon requirements released by the Committee on Food and Nutrition, National Research Council, May 1941, for a very active man, adjusted to a level of 4,000 calories.
- (3) Values for World War I ration obtained from vol. VI, No. 3, p. 157, March 1942, *Connecticut State Medical Journal*, adjusted to an "as issued" basis.
- (4) It is proposed to increase this figure to 3,490. These values do not include food which may be purchased from a monetary allowance of 2½d. per man per day. These figures were furnished by the British War Office.
- (5) Increased values for calcium and riboflavin in ration allowance, ETO, 1 March 1943, over original ETO figures, result chiefly from augmentation of milk allowance. The difference of 0.2 milligram of riboflavin between the National Research Council level and the ETO ration is not believed to be significant. The riboflavin content of 2.9 is a maximum possible under the proposed ration without a tendency to overbalance the meat issues in favor of pork, or without use of liver which is not available. Any increase of milk or eggs, the remaining good sources of riboflavin, will result in wastage of these items.
- (6) Values for Vitamin C are realized by an increased use of tomato and citrus fruit products. Synthetic preparations are not depended upon to maintain this figure.

*Evolution of the ETO Field Ration A, OCQM, March 1943. All figures are given as they appear in a photostatic copy of the original table. Discrepancies between this and following table have been allowed to stand.

APPENDIX XIII-B

COMPOSITION OF RATIONS BY FOOD CLASS*

Ration Allowance Per Man Per Day

	Meat	Eggs dhy.	Milk Products	Butter	Other Fats	Grain Products	Legumes dried	Sugars	Vegetables Leafy Green and Yellow	Other Vegetables	Tomatoes and Citrus Fruits	Potatoes	Fruits dried	Other Fruits canned	Beverages	Misc.	Total
	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Oz.	Lb.
World War I Ration	15.4	0.15	8.1	0.975	0.705	13.2	1.15	4.8	7.45	2.8	2.05	18.3	1.39	5.56	(1)	(1)	5.2*
Current U.S.A. A Ration	13.4	(2) 2.56	17.3	1.5	1.29	11.9	1.04	4.9	6.8	4.5	6.3	11.1	1.42	6.7	1.5	1.12	5.8*
British Home Ration	9.43	0.0	4.3	1.5	0.0	13.9	0.57	3.0	2.9	2.9	0.0	13.0	0.86	0.0	0.4	(3) 2½d.	(3) 3.7*
British-American Ration	15.15	0.28	4.6	2.0	0.28	14.9	0.57	4.5	7.0	7.0	0.0	10.0	2.0	0.0	2.1	1.83	4.5
Original ETO A Ration	(4) 15.0	0.50	5.3	2.0	1.28	12.3	0.50	5.0	5.0	4.0	2.0	8.0	0.1	3.9	2.3	0.98	4.3
1 March 1943 ETO A Ration	(5) 12.15	0.60	(6) 7.5	1.5	0.85	11.0	1.5	5.0	6.5	4.0	(7) 5.0	10.0	0.7	5.0	1.5	2.60	4.8*

(1) No data available.

(2) Represents fresh eggs.

(3) Monetary allowance of 2½d. per man per day is estimated to provide 0.4# of food.

(4) Beef component calculated as carcass beef.

(5) Beef and pork component calculated as boneless beef and pork. Adjusted to carcass basis the figure would be 15.2.

(6) Milk products used principally in cookery are principal source of calcium and an important source of riboflavin.

(7) The most important increase in weight of any food class.

*Evolution of the ETO Field Ration A, OCQM, March 1943. All figures are given as they appear in photostatic copy of the original. Errors in mathematical computation and discrepancy between this and preceding table have been allowed to stand.

APPENDIX XIV

MENUS SERVED IN MARSHALING AREAS*

Menu No. 1

Breakfast	Dinner	Supper
Tomato Juice	Pork Chops	Braised Beef
Rolled Oats	Gravy	Gravy
Milk	Apple Sauce	Mashed Potatoes
Hot Cakes	Boiled Potatoes	Buttered Beets
Bacon	Buttered Peas	Green Onions
Sirup	Lettuce Salad	Sheet Cake w/Icing
Toast	Peas	Biscuits
Butter	White Bread	Jam
Coffee	Butter	Butter
	Cocoa	Coffee

Menu No. 2

Breakfast	Dinner	Supper
Orange and Grapefruit Juice	Roast Beef	Baked Ham
Wheat Cereal	Fried Potatoes	Mashed Potatoes
Milk	Pickle Relish	Buttered Corn
Corned Beef Hash	Spinach	Cole Slaw
Toast	Catsup	Fruit Cup
Butter	Mustard	White Bread
Jam	Radishes	Butter
Coffee	Green Onions	Tea
	Peaches	
	White Bread	
	Butter	
	Coffee	

Menu No. 3

Breakfast	Dinner	Supper
Stewed Prunes	Frankfurters	Fried Chicken
Rolled Oats	Catsup	Steamed Rice
Milk	Mustard	Jelly
Omelet	Boiled Potatoes	Buttered Peas
Pork Sausage	Sauerkraut	Lettuce
Toast	Radishes	Green Onions
Butter	Grapefruit Sections	Pears
Jam	White Bread	Biscuits
Coffee	Butter	Butter
	Tea	Hard Candy
		Coffee

Menu No. 4

Breakfast	Dinner	Supper
Orange and Grapefruit Juice	Baked Ham	Beefsteak
Whole Wheat Cereal	Mashed Potatoes	Catsup
Milk	Buttered String Beans	Fried Potatoes
French Toast	Cabbage Salad	Buttered Carrots
Sirup	Fruit Cup	Mixed Vegetable Salad
Bacon	White Bread	Sliced Pineapple
Toast	Butter	White Bread
Butter	Cocoa	Butter
Coffee		Coffee

*Quartermaster Class I Plan for an Operation on the Continent, OCQM, May 1944.

APPENDIX XV

SEA PASSAGE RATIONS*

Rations	Army			Navy					Total Army and Navy
	Lift	Days	Total	Craft	Crew Strength	Days	Subtotal (to nearest thousand)	Total	
A Ration	158,000	2	316,000	10 APA 6 AKA	550 400	91 91	501,000 218,000	719,000	1,035,000
B Ration (Modified) for Troops B Ration (Modified) for Casualties	414,000 74,000	2 1	828,000 74,000	190 LST	100	91	1,279,000	1,729,000	2,631,000
10-in-1 Ration	414,000	2	828,000	136 LCI (L) 420 LCT	25 22	91 91	309,000 841,000	1,150,000	1,978,000
Hospital B Ration (Modified)	74,000	1	74,000						74,000

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Reserve Rations

Ship or Craft	Combined Personnel per Ship or Craft	Total Personnel per Type of Craft	Days' Allowance of K Rations	Number of K Rations (to nearest thousand)	Days' Allowance of C Rations	Number of C Rations (to nearest thousand)
10 APA	4,550	45,500	3	137,000	2	91,000
6 AKA	1,500	9,000	3	27,000	2	18,000
190 LST	400	76,000	3	228,000	2	152,000
136 LCI (L)	225	30,600	3	92,000	2	61,000
420 LCT	77	32,340	3	97,000	2	65,000
LOUP D-LCD	—	6,000	3	18,000	—	—

*Quartermaster Class I Plan for an Operation on the Continent, OCQM, May 1944, appendix 2A, p. 14.

APPENDIX XVI

THE FINAL ETO RATION*

12 September 1944

Food Classes and Articles	Quantity (Ounces)		Food Classes and Articles	Quantity (Ounces)	
	Field Ration A	Hospital Ration		Field Ration A	Hospital Ration
Meats			Milk Products		
Bacon	1.00	1.00	Milk, evaporated	4.000	6.000
Beef, boneless, frozen	5.90	5.00	Milk, powdered, whole	1.000	1.500
Fish	0.35	0.70	Cheese	0.500	0.400
Fowl, frozen	—	2.75	Milk, malted, powdered	—	0.100
Pork, boneless, frozen	2.25	2.00	Butter	1.120	1.500
Sausage	1.50	0.40	Other Fats	0.750	0.650
Other Meats or Meat Products	1.15	0.30	Other Vegetables		
Eggs, dehydrated	0.60	0.75	Beets, canned	1.000	1.000
Grain Products			Corn, canned	1.000	1.000
Bread	7.50	7.50	Onions, dry	1.000	1.000
Flour	2.00	1.50	Sauerkraut, canned	1.000	1.000
Other Grain Products	2.00	1.50	Other Fruit		
Sugar, Sirups, and Spreads			Apples, canned	1.250	1.500
Sugar	4.00	4.00	Cherries, canned	1.250	1.500
Sirup	0.50	0.50	Peaches, canned	1.250	2.000
Fruit Spreads	0.50	1.00	Pineapples, canned	1.250	2.000
Dessert Powders	0.30	0.30	Dried Fruit		
Dried Legumes			Raisins	0.200	0.200
Beans, dry	1.25	0.30	Prunes	0.200	0.200
Peanut Butter	0.16	0.20	Apricots	0.200	0.100
Potatoes, fresh	11.00	9.00	Other Dried Fruit	0.100	0.100
Tomatoes and Citrus Fruits			Miscellaneous		
Grapefruit Juice, canned	2.42	3.12	Baking Powder	0.200	0.200
Tomatoes, canned	2.50	4.10	Pepper, black	0.045	0.045
Lemon Powder	0.08	0.06	Bouillon Cubes	0.040	0.040
Orange Powder	—	0.22	Chili Powder	0.002	0.002
Vegetables, Leafy, Green, and Yellow			Cinnamon	0.006	0.006
Beans, string, canned	1.30	1.20	Flavoring Extracts	0.030	0.030
Cabbage, canned	1.30	1.20	Mustard, dry	0.015	0.015
Carrots, canned	1.30	1.20	Nutmeg	0.002	0.002
Peas, canned	1.30	1.20	Pickles, canned, assorted	0.500	0.500
Spinach, canned	1.30	1.20	Salt	0.500	0.500
Beverages			Sauce, concentrated	0.060	0.060
Coffee	1.28	1.28	Soup, concentrated	—	1.600
Cocoa	0.30	0.30	Tomato Catsup, canned	0.500	0.400
Tea	0.10	0.10	Vinegar	0.400	0.400

On Thanksgiving, Christmas, and New Year's Days, the meat component for the noonday meal will be 24 ounces of undrawn turkey, if obtainable.

Substitutive items: Substitutions will be made only when required by an emergency and only in accordance with the table below. The selection of a substitutive item for any component of the ration will take into consideration its nutritional and practical use in the preparation of the daily menu.

Component Item	Substitutive Item	Quantity (pounds) per pound of Component
Meats	Ham	1.50
Bacon	Pork Luncheon Meat	1.33
Beef, boneless	Bacon	0.86
	Beef, corned, canned	0.90
	Chicken (undrawn)	2.00
	Chicken (drawn), eviscerated	1.60
	Duck (undrawn)	2.00
	Fish, canned (salmon, mackerel)	0.56
	(1) Fish, canned (tuna)	0.56
	Ham, smoked	1.28
	Hash, corned beef	2.00
	Hash, meat and vegetable	2.00
	Pork, boneless	1.07
	Sausage, frozen or canned	1.14
	Stew, meat and vegetable	2.00
Fish, canned (mackerel, salmon)	Beef, boneless (boiling and stewing)	1.40
	Pork, boneless	1.60
	Ham	1.13
Chicken or Duck (undrawn)	Beef, boneless	0.50
	Chicken, eviscerated, frozen	0.80
	Pork, boneless	0.54
Chicken, eviscerated, frozen	Beef, boneless	0.63
	Pork, boneless	0.67
Pork, boneless	Beef, boneless	0.93
	Ham	1.20
	Sausage, frozen or canned	1.07
Sausage, frozen or canned	Beef, boneless (ground)	0.88
	Ham, smoked	1.13
	Luncheon Meat, canned	1.00
	Bacon	0.60
Eggs, dehydrated	(1) Eggs, shell	4.00
Milk Products		
Milk, evaporated	Milk, whole, dry	0.25
	(1) Milk, malted, powdered	0.25
	(1) Milk, skimmed, dry	0.25
Milk, whole, dry	Milk, evaporated	4.00
	Milk, skimmed, dry	1.00
Cheese, American cheddar	Cheese, canned,	1.00
Butter	Preserved Butter	1.00
Grain Products		
Bread	Crackers, type C	0.67
Cereals, uncooked	(1) Cornmeal	1.00
	Cereals, prepared	1.00
	Rolled Oats	0.96
Cereals, prepared	Cereals, uncooked	1.00
	Rolled Oats	0.96
Macaroni	(1) Noodles	1.00
	Spaghetti	1.00

Component Item	Substitutive Item	Quantity (Pounds) per pound of Component
Dried Legumes		
Beans, dry (any kind)	Split Peas, dried	1.00
	Beans, baked, canned	3.00
Peanut Butter	Jam	1.20
	Marmalade	1.20
Tomatoes and Citrus Fruits		
Grapefruit Juice, canned (or grapefruit and orange juice, canned)	(1) Grapefruit, canned	1.00
	Tomato Juice	1.00
Tomatoes, canned	Tomatoes, fresh	1.50
Lemon Powder	(1) Orange Powder	1.00
Potatoes, fresh	Potatoes, sweet, canned	0.60
	Potatoes, dehydrated	0.20
Vegetables, canned		
Beans, string, canned	Carrots, canned	1.00
	Spinach, canned	1.00
	Peas, canned	1.00
Beets, canned	Corn, canned	1.00
Corn, canned	Beets, canned	1.00
	Lima Beans, canned	1.00
Peas, canned	Beans, string, canned	1.00
	Carrots, canned	1.00
	Spinach, canned	1.00
Spinach, canned	Beans, string, canned	1.00
	Carrots, canned	1.00
	Peas, canned	1.00
Carrots, canned	Beans, string, canned	1.00
	Peas, canned	1.00
	Spinach, canned	1.00
Fruits, canned		
Apples, canned	Cherries, sour, canned	1.00
	Apple Nuggets, dehydrated	0.17
	Peaches, evaporated	0.38
Applesauce, canned	Apple Nuggets, dehydrated	0.20
Cherries, sour, canned	Berries, canned	1.00
	Apples, canned	1.00
	Peaches, evaporated	0.38
Fruit Cocktail, canned	Peaches, canned	1.00
	Pears, canned	1.00
	Pineapple, canned	1.00
Peaches, canned	Fruit Cocktail, canned	1.00
	Pears, canned	1.00
	Pineapple, canned	1.00
Pears, canned	Fruit Cocktail, canned	1.00
	Peaches, canned	1.00
	Pineapple, canned	1.00
Pineapple, canned	Peaches, canned	1.00

Component Item	Substitutive Item	Quantity (Pounds) per pound of Component
Fruits, dried		
Apple Nuggets, dehydrated	Applesauce, canned	5.00
	Apples, canned	4.50
Apricots, evaporated	Peaches, evaporated	1.00
	Raisins, dried	1.00
Peaches, evaporated	Apricots, evaporated	1.00
Prunes, evaporated	Apricots, evaporated	1.00
	Peaches, evaporated	1.00
Beverages		
Coffee	Cocoa	0.75
	Coffee, soluble	0.42
	Tea	0.25
Cocoa	Coffee	1.33
	Coffee, soluble	0.56
	Tea	0.33
Tea	Coffee	4.00
	Coffee, soluble	1.68
	Cocoa	3.00
Miscellaneous		
Baking Powder	Baking Soda	0.50
	Yeast, dried	0.25
	Yeast, compressed	0.50
Pickles, canned, assorted	Relish	1.00
Tomato Catsup, canned	Sauce, concentrated	0.40
Flavoring Extract, lemon	Flavoring Extract, vanilla	1.00
Flavoring Extract, vanilla	Flavoring Extract, lemon	1.00
Fresh vegetables will be substituted for canned, when available, as indicated:		
String Beans, canned	Beans, string or runner	2.00
	Cabbage, Carrots, Peas, or Spinach canned	Brussels Sprouts or Cabbage
Carrots		1.50
Greens		1.50
Lettuce		0.75
Peas		2.50
Spinach		1.50
Beets, Corn, or Sauerkraut, canned		Beets
	Cauliflower	2.00
	Celery	1.50
	Cucumbers	1.00
	Marrow	2.00
	Green Onions	1.00
	Parsnips	1.50
	Radishes	0.75
Turnips or Swedes	1.50	

(1) For use of hospital patients only.

*Circular No. 96, Hq, ETOUSA, 12 September 1944.

APPENDIX XVII-A

HOSPITAL MENUS*

Soft Diet

Breakfast

Dinner

Supper

Menu No. 1

Grapefruit Juice
Whole Wheat Cereal
Milk
Creamed Beef on Toast
Bread
Butter
Jelly
Coffee

Assorted Soups
Crackers or Croutons
Chopped Roast Beef
Brown Gravy
Duchess Potatoes
Puree of Spinach
Bread
Butter
Egg Custard
Coffee

Spaghetti and Tomato Sauce
Puree of Carrots
Bread
Butter
Prune Whip
Tea

Menu No. 2

Tomato Juice with Lemon
Crystals
Oatmeal
Milk
Scrambled Eggs
Toast
Butter
Jelly
Coffee

Assorted Soups
Crackers or Croutons
Creamed Salmon on Toast
Mashed Potatoes
Puree of Green Peas
Tomato Juice
Bread
Butter
Egg Custard
Coffee

Cheese Fondue
Asparagus Tips
Bread
Butter
Chocolate Pudding
Coffee

Menu No. 3

Grapefruit Juice
Assorted Dry Cereals
Milk
Baked French Toast
Crisp Bacon
Butter
Toast
Jelly
Coffee

Assorted Soups
Crackers or Croutons
Spanish Rice
Puree of String Beans
Bread
Butter
Gelatin Dessert
Coffee

Creamed Beef on Toast
Puree of Beets
Bread
Butter
Rice Pudding
Coffee

Breakfast**Dinner****Supper****Menu No. 4**

Grapefruit Juice
 Grapefruit Juice with Lemon
 Crystals
 Prepared Cereal
 Milk
 Tomato Omelet
 Toast
 Butter
 Jelly
 Coffee

Assorted Soups
 Crackers or Croutons
 Roast Pork
 Brown Gravy
 Mashed Potatoes
 Puree of Carrots
 Tomato Juice
 Bread
 Butter
 Apple Betty
 Cocoa

Creamed Chicken on Toast
 Puree of Sweet Potatoes
 Baked Egg Custard
 Bread
 Butter
 Orange Juice

Menu No. 5

Grapefruit Juice
 Oatmeal
 Milk
 Scrambled Eggs
 Bacon
 Toast
 Jelly
 Butter
 Coffee

Assorted Soups
 Crackers or Croutons
 Baked Tuna Fish
 Cream Gravy
 Duchess Potatoes
 Puree of Spinach
 Bread
 Butter
 Blanc Mange
 Tea

Crackers or Croutons
 Macaroni and Cheese
 Tomato Juice
 Bread
 Butter
 Peaches
 Lemonade

Menu No. 6

Pineapple Juice with Lemon
 Crystals
 Whole Wheat Cereal
 Milk
 Omelet
 Toast
 Jelly
 Butter
 Coffee

Assorted Soups
 Crackers or Croutons
 Chopped Roast Beef
 Brown Gravy
 Boiled Rice
 Puree of Beets
 Bread
 Butter
 Chocolate Pudding
 Coffee

Creamed Asparagus Tips on
 Toast
 Mashed Potatoes
 Puree of Green Peas
 Bread
 Butter
 Gelatin Dessert
 Coffee

Menu No. 7

Tomato Juice with Lemon
 Crystals
 Prepared Cereal
 Milk
 Baked French Toast
 Crisp Bacon
 Butter
 Toast
 Jelly
 Coffee

Assorted Soups
 Crackers or Croutons
 Chicken
 Gravy
 Escalloped Potatoes
 Puree of String Beans
 Bread
 Butter
 Pears
 Cocoa

Chopped Beef and Noodles
 Tomato Juice
 Bread
 Butter
 Applesauce
 Tea

Breakfast**Dinner****Supper****Menu No. 8**

Puree of Apricots
Wheat Cereal
Milk
Scrambled Eggs
Toast
Butter
Jelly
Coffee

Assorted Soups
Crackers or Croutons
Salmon Loaf
Cream Gravy
Mashed Potatoes
Puree of Carrots
Tomato Juice
Bread
Butter
Gelatin Dessert
Tea

Macaroni and Cheese
Puree of Spinach
Bread
Butter
Baked Custard
Coffee

Menu No. 9

Grapefruit Juice
Oatmeal
Milk
Creamed Beef on Toast
Toast
Butter
Jelly
Coffee

Assorted Soups
Crackers or Croutons
Chopped Roast Beef
Brown Gravy
Mashed Potatoes
Tomato Juice
Bread
Butter
Bread Pudding
Cocoa

Creamed Tuna Fish on
Toast
Puree of String Beans
Bread
Butter
Peaches
Coffee

Menu No. 10

Grapefruit
Prepared Cereal
Milk
Omelet
Bacon
Toast
Jelly
Butter
Coffee

Assorted Soups
Crackers or Croutons
Chicken
Cream Gravy
Duchess Potatoes
Puree of Green Peas
Bread
Butter
Pears
Coffee

Creamed Beef on Toast
Mashed Potatoes
Puree of Spinach
Bread
Butter
Butterscotch Pudding
Cocoa

Menu No. 11

Tomato Juice with Crystals
Whole Wheat Cereal
Milk
French Toast
Bacon
Toast
Jelly
Butter
Coffee

Assorted Soups
Crackers or Croutons
Chopped Roast Beef
Puree of Sweet Potatoes
Bread
Butter
Applesauce
Coffee

Cheese Fondue
Asparagus Tips
Puree of Beets
Bread
Butter
Prune Whip
Cocoa

Breakfast**Dinner****Supper****Menu No. 12**

Pineapple Juice with Lemon
Crystals
Wheat Cereal
Milk
Cheese Omelet
Toast
Butter
Jelly
Coffee

Assorted Soups
Creamed Chicken on Toast
Boiled Rice
Puree of Carrots
Bread
Butter
Lemon Egg Custard
Tea

Spaghetti and Tomato Sauce
Puree of Peas
Bread
Butter
Chocolate Pudding
Coffee

Menu No. 13

Grapefruit Juice
Oatmeal
Milk
Baked French Toast
Crisp Bacon
Sirup
Toast
Butter
Jelly
Coffee

Assorted Soups
Baked Tuna Fish
Mashed Potatoes
Puree of String Beans
Bread
Butter
Butterscotch Pudding
Cocoa

Chicken and Noodles
Puree of Squash
Bread
Butter
Peaches
Coffee

Menu No. 14

Prune Juice with Lemon
Crystals
Prepared Cereal
Milk
Scrambled Eggs
Toast
Butter
Jelly
Coffee

Assorted Soups
Chicken
Escalloped Potatoes
Puree of Spinach
Bread
Butter
Pears
Coffee

Creamed Beef on Toast
Tomato Juice
Bread
Butter
Blanc Mange
Lemonade

Liquid Diet

Breakfast	Dinner	Supper
Menu No. 1 Fruit Juice Farina Gruel Milk Coffee Extra Nourishments: Cocoa and Malted Milk	Strained Chicken Soup Grapefruit Juice Thinned Cornstarch Pudding	Strained Mushroom Soup Tomato Juice Gelatin Dessert
Menu No. 2 Grapefruit Juice Oatmeal Gruel Milk Coffee Extra Nourishments: Cocoa and Eggnog	Strained Vegetable Soup Tomato Juice Grape Juice with Lemon Crystals Coffee	Strained Cream Soup Fruit Juice Soft Custard Tea
Menu No. 3 Pineapple Juice Whole Wheat Gruel Milk Coffee Extra Nourishments: Cocoa and Malted Milk	Strained Tomato Soup Fruit Juice Gelatin Dessert Coffee	Strained Chicken Soup Tomato Juice Thinned, Strained Rice Pudding Tea
Menu No. 4 Grapefruit Juice Farina Gruel Milk Coffee Extra Nourishments: Cocoa and Eggnog	Strained Vegetable Soup Tomato Juice Soft Custard Coffee	Beef Broth Pineapple Juice Grape Juice with Lemon Crystals Tea
Menu No. 5 Grape Juice with Lemon Crystals Oatmeal Gruel Milk Coffee Extra Nourishments: Cocoa and Malted milk	Strained Tomato Soup Grapefruit Juice Pineapple Juice Coffee	Strained Cream of Carrot Soup Tomato Juice Gelatin Dessert Tea

Breakfast

Dinner

Supper

Menu No. 6

Grapefruit Juice
Whole Wheat Gruel
Milk
Coffee
Extra Nourishments:
Cocoa and Eggnog

Strained Vegetable Soup
Tomato Juice
Pineapple Juice
Coffee

Strained Cream Soup
Fruit Juice
Soft Custard
Tea

Menu No. 7

Pineapple Juice
Farina Gruel
Milk
Coffee
Extra Nourishments:
Cocoa and Malted Milk

Strained Chicken Soup
Grape Juice with Lemon
Crystals
Gelatin Dessert
Coffee

Beef Broth
Tomato Juice
Thinned, Strained
Rice Pudding
Tea

*Hospital Menu Supplement to Field Ration A, OCQM, April 1945.

APPENDIX XVII-B

SUGGESTED MENUS FOR HOSPITAL TRAINS*

Hot Meals

Breakfast

Orange or Fruit Juice
Cooked Cereal
Bread, Butter, Jam
Coffee

Dinner

Roast Beef and Gravy
Peas
Bread, Butter
Jam or Peanut Butter
Canned Fruit
Cocoa

Supper

Creamed Chicken or Tuna
String Beans
Bread, Butter
Cheese or Jam
Canned Fruit
Tea or Coffee

Cold Meal

Roast Beef, Chicken, or Tuna Sandwich
Jam, Peanut Butter, or Cheese Sandwich
Orange or Canned Fruit
Coffee

Supplemental Nourishment

Bouillon and Soups
Grapefruit Juice, Tomato Juice, and Grape
Juice
Fruit Cocktail and Peaches
Candy
Crackers
Cereal
Eggnog
Malted Milk

*Hospital Train Menus, OCQM, 7 February 1945.

APPENDIX XVIII

MENUS FOR ITALIAN LABOR COMPANIES*

(Effective 18 August 1944)

Breakfast	Dinner	Supper
Menu No. 1		
Stewed Peaches with Lemon Crystals Scrambled Eggs Fried Potatoes Bread Fresh Butter Coffee	Meat Balls Spaghetti with Tomato Sauce Spinach Lettuce Fruit Cocktail Bread Jam Tea	Steamed Frankfurters Fried Potatoes Boiled Cabbage Chocolate Pudding Bread Fresh Butter Coffee
Menu No. 2		
Tomato Juice with Lemon Crystals Hot Cakes Bacon Sirup Bread Canned Butter Coffee	Roast Pork Mashed Potatoes with Gravy Turnips or Swedes Pears Bread Canned Butter Coffee	Pea Soup Bologna and Salami Browned Potatoes Canned Carrots Stewed Prunes Bread Marmalade Tea
Menu No. 3		
Stewed Raisins Egg Omelet Fried Potatoes Bread Jam Coffee	Braised Beef Boiled Potatoes Cole Slaw Plain Cake Bread Butter Lemonade	Sliced Cheese Spaghetti with Tomatoes Fresh Beets Stewed Peaches Bread Butter Coffee
Menu No. 4		
Stewed Peaches Egg Omelet Bacon Bread Butter Coffee	Roast Lamb with Gravy Mashed Potatoes Peas Butterscotch Pudding Bread Jam Coffee	Salmon Loaf Potatoes with Cheese String Beans Raisin Cinnamon Roll Bread Butter Tea

Breakfast**Dinner****Supper****Menu No. 5**

Tomato Juice
Assorted Prepared Cereals
Milk
Cheese Omelet
Bread
Jam
Coffee

Meat Loaf
Spaghetti with Tomatoes
String Beans
Fruit Cocktail
Bread
Butter
Tea

Pea Soup
Sliced Cheese
Fried Potatoes
Spinach
Cole Slaw
Vanilla Pudding
Bread
Butter
Coffee

Menu No. 6

Stewed Prunes
Scrambled Eggs
Bacon
Bread
Butter
Coffee

Roast Pork
Mashed Potatoes
Sauerkraut
Plain Cake
Bread
Coffee

Meat Balls
Spaghetti with Tomato Sauce
Fresh Carrots
Lettuce
Peaches
Bread
Butter
Lemonade

Menu No. 7

Stewed Peaches with Lemon
Crystals
Egg Omelet
Fried Potatoes
Bread
Marmalade
Coffee

Braised Beef
Boiled Potatoes
Peas
Vanilla Pudding
Bread
Butter
Tea

Sliced Cheese
Baked Beans with Bacon
Beets
Fruit Cocktail
Bread
Butter
Coffee

*Italian Labor Companies Menus, OCQM, 18 August 1944.

APPENDIX XIX-A

MENUS FOR PRISONERS OF WAR IN THE UNITED KINGDOM*

August 1943

Breakfast	Dinner	Supper
Menu No. 1		
Peaches	Tomato and Lettuce Salad	Cabbage Salad
Cooked Whole Wheat Cereal	Vegetable Soup	Hamburger Steak
Milk	Corned Beef Hash	Brown Gravy
Fried Potatoes in Jackets	Jam	Kidney Beans
Bacon	Sliced Pineapple	Lyonnaise Potatoes
Toast	Coffee	Bread
Butter	Bread	Butter
Coffee		Applesauce
		Hot Cocoa
Menu No. 2		
Stewed Apricots	Frankfurters	Chili Con Carne with Beans
Oatmeal	Baked Potatoes	Boiled Potatoes
Milk	Gravy	Stewed Tomatoes
Ham and Egg Omelet	Fried Cabbage	Spinach
Hashed Browned Potatoes	Bread	String Bean Salad
Butter	Jam	Bread
Toast	Applesauce	Butter
Coffee	Pears	Figs
	Lemonade	Coffee
Menu No. 3		
Applesauce	Lettuce and Tomato Salad	Spaghetti with Cheese
Assorted Prepared	Roast Beef	Onions and Grated
Cereals	Mashed Potatoes	Cheese
Milk	Creamed Peas	Stewed Beans
French Toast	Bread	Bread
Fried Potatoes	Stewed Peaches	Butter
Sirup	Jam	Applesauce
Butter	Coffee	Vanilla Custard
Coffee		Cocoa

Breakfast**Dinner****Supper****Menu No. 4**

Apricots
Whole Wheat Cereal
Milk
Scrambled Eggs
Fried Potatoes
Apple Butter
Butter
Toast
Coffee

Pea Soup
Boiled Beef
French Baked Potatoes
Vegetable Salad
Bread
Jam
Fruit Cocktail
Coffee

Celery Salad
Bologna Sausage
Brown Gravy
Creamed Potatoes
Cabbage Salad
Bread
Butter
Stewed Apples
Hot Tea

Menu No. 5

Dried Peaches
Boiled Oatmeal
Milk
Egg Omelet
Butter
Toast
Coffee

Baked Mackerel with
Spanish Fish Sauce
Sliced Cheese
Mashed Potatoes
Boiled Spinach
Baked Parsnips
Bread
Jam
Cornstarch Pudding
Tea

Lettuce Salad
Baked Beans
Fried Potatoes
Bread
Butter
Applesauce
Vanilla Pudding
Coffee

Menu No. 6

Prunes
Assorted Cereals
Milk
Egg Omelet
Butter
Toast
Coffee

Dehydrated Soup
Hamburger Steak
Brown Gravy
Lyonnais Potatoes
Cole Slaw
Bread
Butter
Peaches
Coffee

Lettuce and Tomato Salad
Spaghetti with Meat Sauce
Boiled Potatoes
Mixed Vegetables
Bread
Jam
Stewed Apricots
Hot Tea

Menu No. 7

Apricots
Cooked Whole Wheat
Milk
Scrambled Eggs
Vienna Sausage
Jam
Toast
Coffee

Roast Beef
Brown Gravy
Mashed Potatoes
String Beans
Carrot and Raisin Salad
Bread
Butter
Vanilla Custard
Cocoa

Vegetable Soup
Meat and Vegetable Stew
Fried Cabbage
Stewed Tomatoes
Bread
Butter
Fresh Apples
Coffee

Breakfast**Dinner****Supper****Menu No. 8**

Stewed Figs
Oatmeal
Milk
Fried Potatoes
Fried Bacon
Butter
Bread
Coffee

Bean Soup
Beef Loaf
Brown Gravy
Lyonnaisse Potatoes
Peas
Bread
Jam
Butterscotch Dessert
Lemonade

Lettuce and Tomato Salad
Baked Vienna Sausage
Brown Gravy
Mashed Potatoes
String Beans
Cole Slaw
Bread
Butter
Applesauce
Coffee

*Menus for Prisoners of War in the United Kingdom, OCQM, August 1943.

APPENDIX XIX-B

MENUS AND ISSUE CHART FOR PRISONERS OF WAR IN THE EUROPEAN THEATER OF OPERATIONS*

(Revised 21 March 1945)

Breakfast	Dinner	Supper
Menu No. 1		
Cereal Eggs Bread, German type Coffee	Hash Beans Vegetable Biscuits, type C or whole wheat Marmalade Coffee	Stew Cheese, canned Potatoes Sauerkraut Bread, German type Lemon Crystals
Menu No. 2		
Bacon Cereal Bread, German type Marmalade Coffee	Cabbage Soup Fish Potatoes Vegetable Bread, German Type Lemon Crystals	Hash Beans Cabbage Prunes Biscuits, type C or whole wheat Coffee
Menu No. 3		
Cereal Bread, German type Marmalade Coffee	Hash Potatoes Vegetable Bread, German type Lemon Crystals	Cabbage Soup Stew Spaghetti with Tomato Sauce Raisins Biscuits, type C or whole wheat Coffee
Menu No. 4		
Cereal Bread, German type Marmalade Coffee	Meat Potatoes Vegetable Biscuits, type C or whole wheat Lemon Crystals	Hash Beans Vegetable Bread, German Type Coffee

Breakfast**Dinner****Supper****Menu No. 5**

Bacon, canned
 Cereal
 Bread, German type
 Marmalade
 Coffee

Soup
 Hash
 Potatoes
 Vegetable
 Applesauce
 Bread, German type
 Lemon Crystals

Stew
 Cheese
 Vegetable
 Biscuits, type C or whole
 wheat
 Coffee

Menu No. 6

Cereal
 Bread, German type
 Marmalade
 Coffee

Meat
 Potatoes
 Sauerkraut
 Biscuits, type C or whole
 wheat
 Hard Candy
 Coffee

Hash
 Beans
 Vegetable
 Bread, German type
 Lemon Crystals

Menu No. 7

Hash
 Cereal
 Bread, German type
 Marmalade
 Coffee

Cabbage Soup
 Fish
 Potatoes
 Vegetable
 Biscuits, type C
 or whole wheat
 Lemon Crystals

Stew
 Vegetable
 Bread, German type
 Coffee

Menu No. 8

Bacon
 Oatmeal
 Bread, German type
 Marmalade
 Coffee

Meat
 Beans
 Potatoes
 Cabbage
 Bread, German type
 Lemon Crystals

Hash
 Spaghetti with Tomato Sauce
 Vegetables
 Biscuits, type C or whole
 wheat
 Coffee

Menu No. 9

Cereal
 Eggs
 Bread, German type
 Coffee

Soup
 Hash
 Vegetable
 Bread, German type
 Raisins
 Coffee

Stew
 Potatoes
 Vegetables
 Biscuits, type C or whole
 wheat
 Marmalade
 Lemon Crystals

Breakfast**Dinner****Supper****Menu No. 10**

Cereal
Bread, German type
Marmalade
Coffee

Soup
Stew
Vegetable
Biscuits, type C or
whole wheat
Coffee

Meat
Potatoes
Sauerkraut
Dessert Powder
Bread, German type
Lemon Crystals

*Menus for Prisoners of War, OCQM, 21 March 1945.

APPENDIX XX

CABLEGRAM ESTABLISHING CONTINENTAL RATION SCALES*

ETOUSA APO 887

17 March 1945

(1) AGWAR

EX-21878

(2) PEMBARK

Ration Scale for other than U. S. Army is subject. REURAD WARX 43685 dated 26 February 1945. For June and subsequent requisitions, there have been developed 2 Basic Type ETO ration scales:

TYPE I: The Basic ETO Type A ration scale which has been used for recent requisitions through May 1945. This will be fed to the following: U.S. Military, U.S. Civilians, UNRRA, U. S. Navy, Merchant Marine, Red Cross, British Military, British Civilians, British Women, Guests and 50% Allied repatriated POWs.

TYPE II: Will be used for all liberated manpower, Civilian Labor, Italian Serv. Units, Prisoners of War and 50% repatriated Allied Prisoners of War. This Type II ration scale was arrived at by considering compositely the different menus which will be fed to all groups not covered by Type I. Basic ETO Ration Factors Type II follow: Unit is pounds per 1,000 rations, Beverages: Cocoa 5.0; Coffee (REG) 60.0; Crystals, Lemon 9.6; Tea 2.0. Sugar - Sirups - Spreads; Dessert powder, assorted 10.0; Jam & Jelly, assorted 40.0; Marmalade, orange 40.0; Sugar granulated 190.0; Tomatoes & Citrus Fruits; Tomatoes, cd 58.5. Fruits - Table: Peaches, cd 10.5; Pears, cd 10.5; Prunes, evaporated 7.0. Fruit-Pie, Applenuggets, dhy 8.0; Peaches, dry 14.0. Legumes - Dried: Beans, white, dry 36.0; Soup, bean dhy 8.0; Soup, pea, dhy 8.0. Vegetables (L.G.&Y.): Beans, string, cd 19.5; Peas, cd 19.5; Spinach, cd 19.5. Vegetables - Other: Carrots, dhy 3.5; Onions, dhy 5.0; Potatoes, dhy 60.0; Sauerkraut, cd 19.5. Grain Products Cereal, wheat, uncooked 12.0; Cereal, whole wheat, uncooked, 12.0; Cornstarch 3.0, Crackers, "C" Square 120.0; Crackers, whole wheat 40.0; Flour, white 60.0; Macaroni, dry 40.0; Oats, rolled 24.0; Rice, dry 10.0; Spaghetti, dry 60.0. Meat - Fish - Poultry; Bacon, cd 40.0; Beef, Corned, cd 90.0; Hash, corned beef, cd 75.0; Hash, meat & vegetable, cd 37.5; Luncheon Meat, cd 90.0; Salmon, cd 50.0; Sausage Pork, cd 60.0; Sausage, Vienna, cd 45.0; Stew, meat & vegetable, cd 75.0. Eggs & Dairy Products; Butter, cd 20.0; Cheese, cd 20.0; Eggs, dehydrated 17.0; Milk, evaporated, cd 57.1. Fats - Other: Lard, substitute, war style 14.0, Oil vegetable, salad 20.0. Miscellaneous; Bouillon Cubes .5; Catsup, tomato, cd 36.0; Cloves .25; Mustard .54; Pepper, black .5; Salt 29.0; Soda, baking 1.0; Vinegar, concentrated 5.0. Breadbaking ingredients: Flour 607.2; Milk, skimmed 12.2; Yeast, dry 6.2; Lard 12.2; Salt 12.2; Sugar 15.2; Oil, edible divider 1.0; Fresh Meats: Beef, boneless (B&S) 13.50; Beef, boneless (G) 13.50; Beef, boneless (R&F) 18.00; Pork, boneless 45.00.

Differing menus have been prepared for the various categories which fall with the groups to be covered by ration scale type 2. These menus are for French and other liberated manpower, Civilian labor, enemy POWs, Italian Service Units, 50% of Allied repatriated POWs will be subsisted on one of these Type II menus, according to the categories into which they fall. (For Somervell from Lee signed Eisenhower).

For simplification of requisitioning and bookkeeping regarding receipts and issues, only one requisition has been prepared, which combines the totals arrived at by use of the 2 ration scales.

If the critical food situation makes it necessary, the theater will accept for June an overall out of five or 10% in the type II factors. Factors to be used for subsequent requisitions will be discussed with you by Brigadier General Franks, Deputy Chief Quartermaster, who is enroute to your office currently.

There is on a national scale a definite food shortage not only in France but in every territory on the Continent. The Theater policy directs that no food except that which is declared in excess of civilian needs will be purchased by the U. S. To the extent of this excess the fullest possible advantage will be taken of local procurement. Full consideration has been given to this in arriving at type II ration scale. Foregoing submitted in connection with requisitions previously placed on PEMBARK. Complete reply to WARX 43685 will follow in few days and be applicable to future requisitions.

*Cablegram EX-21878, ETOUSA to AGWAR, 17 March 1945.

APPENDIX XXI

TABLE OF COMPARATIVE ANALYSIS OF ETOUSA RATIONS*

29 March 1945

	ETOUSA Prisoner of War Menu No. 2 Revised 21 March 1945	U. S. Army Ration for Continental Civilian Em- ployees 14 March 1945	U. S. Army Ration for Russian Na- tionals 15 March 1945	ETOUSA Italian Service Unit Menu 7 March 1945	Temporary Menu for Continental Allied Military Forces Op- erating with U. S. Forces 14 March 1945	Ration for French Expe- ditionary Corps (South France) French Moslem April 1945	ETOUSA Field Ration A plus Hospital Supplement April 1945		
Analysis									
Calories	3,033.00	3,119.00	3,291.00	3,100.00	3,409.00	3,547.00	4,079.00	4,770.00	
Protein (gm.)	96.00	102.00	106.00	100.00	104.00	131.00	133.00	161.00	
Calcium (gm.)	0.62	0.70	0.68	0.07	0.65	0.58	1.07	1.47	
Vitamin A (I.U.)	4,315.00	4,408.00	4,408.00	5,963.00	4,115.00	5,057.00	6,039.00	8,878.00	
Thiamin (mg.)	1.88	2.23	2.25	1.91	2.12	2.76	2.92	3.41	
Riboflavin (mg.)	1.43	2.17	2.04	1.90	2.01	2.12	2.99	3.75	
Niacin (mg.)	17.00	26.00	22.00	24.00	27.00	31.00	32.00	36.00	
Ascorbic Acid (mg.)	129.00	87.00	89.00	134.00	91.00	38.00	119.00	158.00	
	lb. per 1,000	lb. per 1,000	lb. per 1,000	lb. per 1,000	lb. per 1,000	lb. per 1,000	lb. per 1,000	lb. per 1,000	
Food Groups	rations	rations	rations	rations	rations	lb. per 1,000 rations	lb. per 1,000 rations	rations	rations
Meat, boneless	394.63	432.35	432.35	414.39	417.87	609.00	579.00	748.33	813.80
Eggs, dehydrated	11.00	10.00	10.00	14.00	11.00	—	—	37.00	52.05
Milk Products, evaporated	99.86	243.05	243.05	106.82	129.67	126.50	126.50	580.17	817.10
Butter	—	20.00	20.00	30.00	25.00	—	—	65.00	90.00
Other Fats	16.00	25.00	35.00	24.00	34.00	—	—	37.67	37.67
Grain Products	1,060.00	962.00	1,065.00	1,012.50	1,198.00	1044.50	1044.50	705.67	763.40
Sugars and Sirups	262.00	279.00	279.00	253.00	281.25	142.30	163.30	360.00	451.90
Dried Legumes	96.00	112.00	112.00	126.00	52.00	145.00	145.00	83.50	83.50
Potatoes, fresh	778.34	700.30	750.30	670.24	813.12	625.00	625.00	560.00	560.00
Tomato and Citrus Fruits	32.91	67.72	67.72	122.25	93.54	93.20	93.20	384.01	600.60
Vegetables, leafy green and yellow	70.84	164.55	164.55	152.79	88.25	209.40	230.40	229.38	308.30
Other Vegetables	160.44	67.50	67.50	56.07	78.57	55.00	55.00	147.11	227.80
Other Fruits	—	40.50	40.50	40.50	20.25	51.60	51.60	333.87	431.70
Fruits, dried	24.00	26.00	26.00	21.00	29.00	21.00	21.00	26.66	26.66
Beverages	60.00	72.75	72.75	35.00	87.00	56.00	69.00	99.67	101.97
Condiments	26.20	22.42	22.42	37.02	35.49	73.46	73.46	69.97	69.97

*Comparative Analysis—Current ETOUSA Menus, OCQM, 29 March 1945.

APPENDIX XXII

ANALYSIS OF RATION SCALE FOR ENEMY PRISONERS OF WAR*

10 April 1945

Pounds per 1,000 Rations

Food Class	OCQM Recommendation	OQMG Recommendation	OQMG-OCQM Agreement
Meats	427.90	450.00	229.80 (1)
Eggs, dehydrated	36.00	36.00	36.00
Milk Products	128.75	86.25	86.25
Butter (Oleomargarine)	35.00	48.00	35.00
Other Fats	40.50	52.50	40.50
Grain Products	1,034.00	1,318.50	1,321.00 (2)
Sugars, Sirups	212.00	212.00	212.00
Dried Legumes	144.00	144.00	144.00
Potatoes, fresh	587.50	792.00	352.50 (3)
Tomatoes and Tomato Juice	64.44	117.15	64.44
Citrus Fruits (Lemon Crystals)	13.80	—	13.80
Vegetables, leafy green and yellow	113.07	122.32	113.07
Other Vegetables	65.94	125.00	65.94
Other Fruits	—	104.17	—
Dried Fruit	75.00	—	75.00
Beverages	64.00	—	64.00
Miscellaneous	22.05	—	22.05
Approximate Total	3,400.00*	3,755.00*	3,400.00*

(1) Solid meat and fish—127.8 lb.

(2) Includes 47 lb. additional macaroni and spaghetti to replace 47 lb. dehydrated potatoes.

(3) Local procurement.

*Letter, QMG to CQM, 10 April 1945. Totals are given as they appear in copy received from Quartermaster General.

APPENDIX XXIII-A

MOSLEM MENUS*

(Effective 1 August 1944)

August 1, 11, 21, and 31

Breakfast	Dinner	Supper
Pineapple Juice	Baked Fish	Pea Soup
Rolled Oats	Hashed Browned Potatoes	Meat and Vegetable Stew
Milk	Buttered Corn	Boiled Lima Beans
Hot Cakes	Sweet Relish	Sliced Peaches
Sirup	Pears	Bread
Toast	Butter	Butter
Butter	Tea	Coffee

August 2, 12, and 22

Grapefruit Juice	Corned Beef	Baked Fish
Whole Wheat Cereal	Baked Sweet Potatoes	Sliced Cheese
Milk	Tomatoes	Buttered String Beans
Corned Beef Hash	Butterscotch Pudding	Cherry Cobbler
Toast	Bread	Bread
Marmalade	Butter	Jam
Coffee	Coffee	Cocoa

August 3, 13, and 23

Stewed Prunes	Corned Beef	Chicken Fricassee
Rolled Oats	Baked Macaroni and Cheese	Cranberry Sauce
Milk	Buttered Peas	Steamed Rice
Plain Omelet	Peach Shortcake	Spinach
Toast	Bread	Sliced Pineapple
Apple Butter	Jam	Bread
Coffee	Lemonade	Butter
		Coffee

August 4, 14, and 24

Tomato Juice	Meat and Vegetable Stew	Salmon Loaf
Wheat Cereal	Baked Corn	Mashed Potatoes
Hashed Browned Potatoes	Buttered Carrots	Sweet Sour Beets
Scrambled Eggs	Apple Brown Betty	Fruit Cup
Toast	Bread	Biscuits
Jam	Butter	Butter
Coffee	Coffee	Lemonade

August 5, 15, and 25

Breakfast

Grapefruit Juice
Whole Wheat Cereal
Milk
Hot Cakes
Sirup
Toast
Butter
Coffee

Dinner

Corned Beef Squares
Stewed Tomatoes with
Croutons
String Beans
Chocolate Pudding
Bread
Lemonade

Supper

Salmon Loaf with
Sauce
Potato Salad
Buttered Peas
Sliced Peaches
Bread
Butter
Coffee

August 6, 16, 26

Stewed Apricots
Rolled Oats
Milk
Scrambled Eggs
Toast
Marmalade
Coffee

Boiled Beans
Sliced Cheese
Buttered Spinach
Sliced Pineapple
Bread
Apple Butter
Coffee

Meat and Vegetable Stew
Fried Potatoes
Boiled Cabbage
Pears
Biscuits
Butter
Lemonade

August 7, 17 and 27

Tomato Juice
Wheat Cereal
Milk
Plain Omelet
Hot Cakes
Sirup
Toast
Butter
Coffee

Meat and Vegetable Stew
Steamed Rice
Boiled Lima Beans
Grapefruit Sections
Bread
Jam
Cocoa

Corned Beef Hash
Gravy
Creamed Peas
Sweet Relish
Apple Cobbler
Bread
Butter
Coffee

August 8, 18, and 28

Stewed Prunes
Rolled Oats
Milk
French Toast
Toast
Sirup
Coffee

Fried Corned Beef
Mashed Potatoes
Buttered Corn
Tomatoes
Plain Cake with Lemon
Sauce
Bread
Butter
Coffee

Bean Soup
Meat and Vegetable Stew
Fried Sauerkraut
Vanilla Pudding
Bread
Lemonade

August 9, 19, and 29

Breakfast

Grapefruit Juice
Whole Wheat Cereal
Milk
Scrambled Eggs
Toast
Marmalade
Coffee

Dinner

Spaghetti with Sauce
Buttered Peas
Dried Raisins
Sliced Peaches
Bread
Butter
Cocoa

Supper

Salmon Loaf
Potatoes Au Gratin
Harvard Beets
Sliced Pineapple
Bread
Jam
Coffee

August 10, 20, and 30

Stewed Peaches
Wheat Cereal
Milk
Cheese Omelet
Fried Hominy
Toast
Apple Butter
Coffee

Meat and Vegetable Stew
Carrots
String Beans
Rice Pudding
Biscuits
Butter
Coffee

Corned Beef
Baked Beans
Stewed Tomatoes
with Croutons
Fruit Cup
Bread
Butter
Lemonade

*Moslem Menus, OCQM, 15 July 1944.

APPENDIX XXIII-B
MOSLEM B RATION*
Issue Chart for 100 Men for 10 Days

Item	Unit or Container	August										Total	
		1	2	3	4	5	6	7	8	9	10	Units	Pounds
		11 21 31	12 22	13 23	14 24	15 25	16 26	17 27	18 28	19 29	20 30		
Meats:													
Beef, corned, canned	6-lb. can		6	6		5			6		5	28	168.000
Chicken, boned	35-oz. can			11								11	24.100
Hash, corned beef	5½-lb. can		7					7				14	77.000
Stew, meat and vegetable	30-oz. can	25			25		25	25	25		25	150	280.500
Salmon, canned	1-lb. can	24	24		24	24				24		120	120.000
Eggs, dehydrated:	lb.	1		6.75	5	2	5.75	6.75	3.25	5.75	6.75	43	43.000
Milk Products:													
Cheese, processed	lb.		10	5			10			4	5	34	34.000
Milk, evaporated	14-oz. can	15	31	24	14	29	17	40	21	36	27	254	230.124
Milk, powdered whole	lb.	1	1	1	1	1	1	1	1	1	1	10	10.000
Butter, stabilized:	lb.	5.5	4.5	3	6.5	6.5	2.5	5	3.5	4	5	46	46.000
Fats, other													
Fats, vegetable	lb.		4.25	4.5	4		4	4.25	5.5		4	30.5	30.500
Oil, vegetable salad	qt.					0.5						0.5	1.000
Grain Products:													
Bread	lb.	25	25	25	25	25	25	25	25	25	25	250	250.000
Biscuits, square type C	lb.	27	27	27	27	27	27	27	27	27	27	270	270.000
Flour, wheat	lb.	15	7.5	9.5	17.5	16	17.5	26	5		16	130	130.000
Hominy, dehydrated	lb.										4	4	4.000
Macaroni	lb.			10								10	10.0
Oats, rolled	3-lb. pkg.	2		2			2		2			8	24.0
Rice	lb.			8				8			6	22	22.0
Spaghetti	lb.									10		10	10.0
Wheat, uncooked	lb.				6			6			6	18	18.0
Wheat, whole uncooked	lb.		6			8				6		20	20.0
Sugar, Sirups and Spreads:													
Sugar, granulated	lb.	23	20.5	29	24.5	30	20.5	28	39	16	28	258.5	258.50

*Moslem Menus, OCQM, 15 July 1944.

Item	Unit or Container	August										Total	
		1	2	3	4	5	6	7	8	9	10	Units	Pounds
		11 21 31	12 22	13 23	14 24	15 25	16 26	17 27	18 28	19 29	20 30		
Apple Butter	No. 10 can			1.5			1.5				1.5	4.5	33.75
Jam, assorted	No. 10 can		1.5	1.5	1.5			1.5		1.5		7.5	61.875
Marmalade	No. 10 can		1.5				1.5			1.5		4.5	36.0
Dessert Powder with Starch:													
Butterscotch	5-lb. can		1									1	5.0
Chocolate	5-lb. can					1						1	5.0
Vanilla	5-lb. can								1			1	5.0
Legumes:													
Beans, lima, dry	lb.	10						10				20	20.0
Beans, white, dry	lb.						18				18	36	36.0
Soup, navy bean, dehydrated	lb.								4			4	4.0
Soup, pea, dehydrated	lb.	4										4	4.0
Citrus Fruit:													
Grapefruit Juice	No. 10 can		6			6				6		18	113.58
Grapefruit	No. 2 can							20				20	25.0
Lemon Crystals	12-oz. can			2	2	2	2		2.5		2	12.5	9.40
Fruits, other:													
Apples, canned	No. 10 can				2							2	12.0
Cherries, sour, canned	No. 10 can		3									3	19.32
Fruit Cocktail, canned	No. 10 can				4						4	8	54.0
Peaches, canned	No. 10 can	4		3		4				4		15	101.30
Pears, canned	No. 10 can	4					4					8	53.0
Pineapple, sliced, canned	No. 10 can			4			4			4		12	81.0
Pineapple Juice, canned	No. 10 can	6										6	37.86
Fruits, dehydrated and evaporated:													
Apple Nuggets, dehydrated	lb.							4				4	4.0
Apricots, evaporated	lb.						7					7	7.0
Cranberries, dehydrated	lb.			1								1	1.0
Peaches, evaporated	lb.										7	7	7.0
Prunes, evaporated	lb.			7					7			14	14.0
Raisins, dried	lb.				3					8	4	15	15.0
Beverages:													
Cocoa	lb.		3					3		3		9	9.0

Item	Unit or Container	August										Total	
		1	2	3	4	5	6	7	8	9	10	Units	Pounds
		11	12	13	14	15	16	17	18	19	20		
		21	22	23	24	25	26	27	28	29	30		
		31											
Coffee	lb.	8	8	8	8	8	8	8	8	8	8	80	80.0
Tea	lb.	0.75										0.75	0.75
Potatoes, dehydrated:													
Potatoes, diced or julienne	lb.	7			7	10	7			7		38	38.0
Potatoes, shreds	lb.				4.5				4.5			9	9.0
Potatoes, sweet	lb.		7.5									7.5	7.5
Vegetables (leafy green and yellow):													
Beans, string, canned	No. 10 can					4					4	8	50.48
Cabbage, dehydrated	lb.						3.5					3.5	3.50
Carrots, canned	No. 10 can				3							3	19.50
Carrots, dehydrated	lb.										4	4	4.0
Peas, green, canned	No. 10 can			5		4		3		4		16	104.96
Spinach, canned	No. 10 can			3			3					6	36.78
Vegetables, other:													
Beets, canned	No. 10 can									3		3	19.50
Beets, dehydrated	lb.				3.5							3.5	3.50
Corn, canned	No. 10 can	3			3				3			9	59.67
Onions, sliced, dehydrated	lb.	1										1	1.0
Sauerkraut, canned	No. 10 can								4			4	24.80
Tomatoes:													
Tomatoes, canned	No. 10 can	2	4			4			4		4	18	114.80
Tomato Juice, canned	No. 10 can				4			4				8	50.48
Tomato Puree	No. 10 can									2	1	3	19.70
Condiments and Accessory Food Items:													
Biscuits, square type C	lb.	20										20	20.0
Bouillon Cubes	ea.				60		60	120				240	2.40
Candy, hard	5-lb. cont.	4										4	20.0
Catsup, Tomato	No. 10 can		1		1		1		1			4	28.0
Cinnamon, ground	4-oz. cont.	1										1	0.25
Cornstarch	1-lb. pkg.	5										5	5.0
Crackers, whole wheat	2-lb. cont.	10										10	20.0
Lemon Flavoring Tablets	2-oz. bx.	1										1	0.125

Item	Unit or Container	August										Total	
		1	2	3	4	5	6	7	8	9	10	Units	Pounds
		11	12	13	14	15	16	17	18	19	20		
		21	22	23	24	25	26	27	28	29	30		
		31											
Maple Sirup Tablets	2-oz. bx.	0.25										0.25	0.0313
Mustard, powdered	4-oz. cont.	1										1	0.25
Nutmeg, ground	1-lb. cont.	1										1	0.25
Pepper, black	1-lb. cont.	1.5										1.5	1.50
Pickles, sweet relish	gal.	1						1				2	16.0
Powder, baking	1-lb. can	7										7	7.0
Salt	10-lb. bag	2										2	20.0
Sauce, concentrated kitchen	12-oz. can	0.33										0.33	0.25
Soda, baking	1 lb. cont.	2										2	2.0
Vanilla Tablets (192 ea.)	2-oz. bx.	0.33										0.33	0.0417
Vinegar, concentrated (250 grain)	qt. bot.	0.6										0.6	1.20

APPENDIX XXIII-C

**RATION COMPONENTS TO BE FURNISHED BY THE UNITED STATES ARMY FOR
THE FRENCH EXPEDITIONARY CORPS WITHOUT REIMBURSEMENT IN KIND***

April 1945

Item	10,000 Rations French (Pounds)	10,000 Rations Moslem (Pounds)
Beans, kidney, dry	120	120
Beans, lima, dry	120	120
Beans, navy, dry	120	120
Beef, corned	1,680	2,640
Salmon, Mackerel, and Tuna	160	160
Luncheon Meat	1,680	0
Meat and Vegetable Stew	4,200	5,040
Sausage, Vienna-style	160	0
Cheese, processed	315	315
Milk, evaporated	163	163
Macaroni	370	370
Beets, julienne, dehydrated	110	110
Potatoes, julienne, dehydrated	1,040	1,040
Beans, string, canned	504	504
Peas, canned	540	540
Tomatoes, canned	512	512
Tomatoes, puree, canned	300	300
Apples, canned	195	195
Grapefruit Juice, canned	120	120
Peaches, sliced, canned	195	195
Pineapple Juice, canned	126	126
Apricots, evaporated	100	100
Prunes, evaporated	110	110
Coffee, roasted and ground	470	600
Tea	90	90
Sugar, granulated	940	1,200
Flour, wheat (with bread ingredients)	8,405	8,405
Jam	165	165
Marmalade	160	160
Crackers, type C, square	1,670	1,670
Mustard, dry	6.3	6.3
Pepper, black	6.3	6.3
Vinegar, concentrated	32	32
Salt, (with bread ingredients)	580	580
Yeast, dried (with bread ingredients)	110	110
Carrots, dehydrated	100	100
Chocolate	158	158
Sardines	310	470
Split Peas	360	360
Lentils	730	730
Total	<u>27,232.6</u>	<u>27,742.6</u>

*Ration Components to be Furnished by the U. S. Army for the French Expeditionary Corps, OCQM, 15 March 1945.

APPENDIX XXIV-A

TEMPORARY MENUS AND ISSUE CHART FOR CONTINENTAL ALLIED MILITARY FORCES OPERATING WITH AMERICAN FORCES*

Effective 14 March 1945

Breakfast	Dinner	Supper
Menu No. 1		
Marmalade	Vienna Sausage	Corned Beef Loaf
Bread	Mustard	Mashed Potatoes
Coffee	Spaghetti	or Potatoes, dehydrated
Milk	Stewed Tomatoes	Root Vegetable, fresh
Sugar	Bread	or Carrots, dehydrated
	Peaches or Pears	Bread
	Lemonade	Butter
		Type-C Biscuits
		Coffee
		Milk
		Sugar
 Menu No. 2		
Jam or Jelly	Pea Soup	Meat and Vegetable Stew
Bread	Grilled Luncheon Meat	Boiled Potatoes
Coffee	Macaroni	or Potatoes, dehydrated
Milk	Bread	Root Vegetable, fresh
Sugar	Type-C Biscuits	or Spinach, canned
	Applesauce	Bread
	Tea	Butter
		Coffee
		Milk
		Sugar
 Menu No. 3		
Cheese	Pork Sausage	Corned Beef Patties
Bread	Lyonnaise Potatoes	Catsup
Coffee	or Potatoes, dehydrated	Spaghetti
Milk	Sauerkraut	Root Vegetable, fresh
Sugar	Bread	or Carrots, dehydrated
	Marmalade	Pudding
	Oatmeal Cookies	Bread
	Lemonade	Butter
		Type-C Biscuits
		Coffee
		Milk
		Sugar

*Temporary Menus for Continental Allied Military Forces Operating with American Forces, OCQM, 14 March 1945.

Breakfast**Dinner****Supper****Menu No. 4**

Jam or Jelly
Bread
Coffee
Milk
Sugar

Luncheon Meat
Mashed Potatoes or Potatoes,
dehydrated
Root Vegetable, fresh or
Tomatoes, canned
Stewed Peaches with Lemon
Crystals
Bread
Butter
Lemonade

Salmon Loaf
Baked Beans with Catsup
Peas
Lemon Pudding
Bread
Whole Wheat Biscuits
Coffee
Milk
Sugar

Menu No. 5

Marmalade
Bread
Coffee
Milk
Sugar

Bean Soup
Corned Beef Hash
Spanish Rice
Cole Slaw or Sauerkraut
Bread
Butter
Type-C Biscuits

Vienna Sausage
Catsup
Escaloped Potatoes
or Potatoes, dehydrated
String Beans
Stewed Prunes with Lemon
Crystals
Bread
Coffee
Milk
Sugar

Menu No. 6

Bread
Butter
Coffee
Milk
Sugar

Bacon Strips
Egg Omelet
Macaroni
Spinach
Bread
Jam
Type-C Biscuits
Coffee
Milk
Sugar

Meat and Vegetable Hash
Fried Potatoes
or Potatoes, dehydrated
Root Vegetables, fresh
or Peas, canned
Semolina Pudding
Bread
Lemonade

Breakfast**Dinner****Supper****Menu No. 7**

Cheese
Bread
Coffee
Milk
Sugar

Pea Soup
Baked Luncheon Meat
Mustard
Lyonnaise Potatoes
or Potatoes, dehydrated
Pudding
Bread
Butter
Tea

Meat and Vegetable Stew
Spaghetti
Root Vegetable, fresh
or String Beans, canned
Bread
Marmalade
Type-C Biscuits
Coffee
Milk
Sugar

Menu No. 8

Jam or Jelly
Bread
Coffee
Milk
Sugar

Corned Beef Patties
French Fried Potatoes or
Potatoes, dehydrated
Cole Slaw or Sauerkraut
Bread Pudding with Lemon
Sauce
Bread
Coffee
Milk
Sugar

Pork Sausage
Boiled White Beans
Stewed Tomatoes
Applesauce
Whole Wheat Biscuits
Bread
Butter
Lemonade

Menu No. 9

Marmalade
Bread
Coffee
Milk
Sugar

Corned Beef Hash
Spaghetti
Carrots, dehydrated
Bread
Butter
Type-C Biscuits
Lemonade

Vienna Sausage
Catsup
Escalloped Potatoes
or Potatoes, dehydrated
Root Vegetable, fresh
or Spinach, canned
Semolina Pudding
Bread
Coffee
Milk
Sugar

Breakfast**Dinner****Supper****Menu No. 10**

Cheese
Bread
Coffee
Milk
Sugar

Salmon Patties
Baked Potatoes
 or Potatoes, dehydrated
Root Vegetable, fresh
 or String Beans, canned
Chocolate Pudding
Bread
Butter
Coffee
Milk
Sugar

Bean Soup
Bacon Strip
Egg Omelet
Macaroni
Stewed Peaches with
 Lemon Crystals
Bread
Jam
Type-C Biscuits
Cocoa

ISSUE CHART FOR 100 MEN FOR 10 DAYS

Item	Unit	Menu Number										Total	
		1	2	3	4	5	6	7	8	9	10	Units	Pounds
Meats													
Bacon, canned	lb.						18				18	36	36.00
Beef, corned, canned	6-lb. can	4		4					4			12	72.00
Hash, corned beef, canned	5½-lb. can					5				5		10	55.00
Hash, meat and vegetable, canned	No. 10 can						5					5	33.75
Luncheon Meat	6-lb. can		4		4			4				12	72.00
Salmon, canned	1-lb. can				25					25		50	50.00
Sausage, pork, canned	2-lb. can			15					15			30	60.00
Sausage, Vienna	24-oz. can	10				10				10		30	45.00
Stew, Meat and vegetable, canned	30-oz. can		20					20				40	75.00
Eggs, dehydrated	lb.						5		1		5	11	11.00
Milk Products													
Milk, evaporated, canned	14½-oz. can	5	5	7	7	5	7	7	5	7	7	62	56.17
Cheese, canned	lb.			7				7		7		21	21.00
Butter, canned	lb.	2	2	2	2	2	2	2	2	2	2	20	20.00
Grain Products													
Oats, rolled	48-oz. pkg.			2								2	6.00
Wheat Cereal, uncooked	lb.						5			5		10	10.00
Macaroni	lb.		14				14			14		42	42.00
Rice	lb.					10						10	10.00
Spaghetti	lb.	15		15				15		15		60	60.00
Bread, fresh	lb.	85	85	85	85	85	85	85	85	85	85	850	850.00
Biscuits, type C	lb.	15	15	15		15	15	15		15	15	120	120.00
Biscuits, whole wheat	lb.				20				20			40	40.00
Sugars and Sirups													
Dessert Powdered, assorted	5-lb. can			1					1			2	10.00
Jam or Jelly	No. 10 can		1		1		1		1		1	5	41.25
Marmalade	No. 10 can	1		1		1		1		1		5	40.00
Sugar, granulated	lb.	14	14	24	24	14	24	14	14	24	24	190	190.00
Dried Legumes													
Beans, white, dry	lb.				18				18			36	36.00
Soup, bean, dehydrated	lb.					4				4		8	8.00
Soup, pea, dehydrated	lb.		4					4				8	8.00
Potatoes													
Potatoes, fresh	lb.	75	75	75	75	75	75	75	75	75	75	750	750.00
or Potatoes, dehydrated	lb.	6	6	6	6	6	6	6	6	6	6	60	60.00
Tomatoes and Citrus													
Fruit													
Tomatoes, canned	No. 10 can	4				1			4			9	57.33
Lemon Crystals	11-oz. can	1		1	2	1	1		2	1		9	6.21

Item	Unit	Menu Number										Total	
		1	2	3	4	5	6	7	8	9	10	Units	Pounds
Vegetables, (Leafy Green and Yellow)													
Beans, string, canned	No. 10 can					3						3	18.93
Cabbage or Leafy Green Vegetable	lb.					25			25			50	50.00
or Sauerkraut	No. 10 can					3			3			6	37.14
Carrots, dehydrated	lb.								3.5			3.5	3.5
Peas, canned	No. 10 can				3							3	19.68
Spinach, canned	No. 10 can							3				3	18.39
Other Vegetables⁽¹⁾													
Root Vegetables, fresh	lb.	30	30	30	30		30	30		30	30	240	240.00
or Spinach, canned	No. 10 can		3							3		6	36.78
or Beans, string, canned	No. 10 can							3			3	6	36.78
or Tomatoes, canned	No. 10 can				4							4	25.48
or Peas, canned	No. 10 can						3					3	19.68
or Carrots, dehydrated	lb.	3.5		3.5								7	7.00
Sauerkraut, canned	No. 10 can			3								3	18.57
Other Fruits⁽²⁾													
Peaches or Pears, canned	No. 10 can	3										3	20.25
Dried Fruits													
Apple Nuggets, dehydrated	lb.		4						4			8	8.00
Peaches, dried	lb.				7					7		14	14.00
Prunes, dried	lb.					7						7	7.00
Beverages													
Cocoa	lb.					2					3	5	5.00
Coffee, roasted and ground	lb.	8	8	8	8	8	8	8	8	8	8	80	80.00
Tea	lb.		1					1				2	2.00
Condiments													
Bouillon Cubes	ea.	50										50	.49
Catsup	No. 10 can	5										5	35.00
Cornstarch	lb.	3										3	3.00
Flour, wheat	lb.	60										60	60.00
Lard Substitute	lb.	14										14	14.00
Mustard, dry	4-oz. can	2										2	.50
Oil, vegetable, salad	qt.	10										10	20.00
Pepper, black	8-oz. can	1										1	.50
Salt	10-lb. bag	3										3	30.00
Soda, baking	1-lb. pkg.	1										1	1.00

(1) Root vegetables: beets, carrots, parsnips, or turnips.

(2) Only one serving of canned fruit per 10-day period.

(3) Substitutions, when absolutely necessary, will be made only from items appearing on the issue chart.

Consolidated Issue Chart for 100 Men for 10 Days

Item	Unit	Menu Number										Total	
		1	2	3	4	5	6	7	8	9	10	Units	Pounds
Meats													
Bacon, canned	lb.		8			8			8			24	24.00
Chili Con Carne, canned	No. 16 can									4		4	26.00
Hash, corned beef, canned	5½-lb. can	5		5		5		5		5		25	137.50
Hash, meat and vegetable, canned	No. 10 can		5		5		5		5			20	135.00
Sausage, pork, canned	2-lb. can				12		12		12		12	48	96.00
Mackerel, canned	lb.		18					18				36	36.00
or Salmon, canned	lb.		18					18				36	36.00
Stew, meat and vegetable, canned	30-oz. can	18		18		18		18		18		90	168.30
Eggs													
Dehydrated	lb.	5							1	5		11	11.00
Milk Products													
Cheese, canned	lb.	8				5						13	13.00
Milk, evaporated, canned	14½-oz. can	6	6	6	6	6	6	6	6	6	6	60	54.37
Fats, other													
Lard, war style No. 2	lb.		2	3	2	4	2			1		14	14.00
Oil, vegetable, salad	qt.	1										1	2.00
Sugar, Sirups, Spreads													
Candy, hard	5-lb. can						2					2	10.00
Sugar, granulated	lb.	17	18	16	16	16	16	20	16	16	16	167	167.00
Dessert Powder, assorted	5-lb. can										1	1	5.00
Marmalade, orange	No. 10 can	1	1	1	1	1	1	1	1	1	1	10	80.00
Tomato and Citrus Fruits													
Lemon Crystals	11-oz. can	2	2	2	2	2	2	2	2	2	2	20	13.80
Tomatoes, canned	No. 10 can	1		1					1			3	19.11
Grain Products													
Bread, fresh, German type	lb.	70	70	70	70	70	70	70	70	70	70	700	700.00
Biscuits, type C or whole wheat	lb.	25	25	25	25	25	25	25	25	25	25	250	250.00
Cereal, wheat	lb.		6			6		6			6	24	24.00
Cereal, whole wheat	lb.	6						6			6	18	18.00
Cereal, rolled oats	48-oz. pkg.				2				2			4	8.00
Flour, wheat, German, or whole wheat	lb.			8		15				7	10	40	40.00
Spaghetti	lb.			10					10			20	20.00

Item	Unit	Menu Number										Total		
		1	2	3	4	5	6	7	8	9	10	Units	Pounds	
Dried Legumes														
Beans, red, kidney, dry, or white, issue	lb.		18		18		18		12				66	66.00
Beans, white, dry	lb.	18											18	18.00
Soup, bean, dehydrated	lb.					4				4	4		12	12.00
Potatoes														
Potatoes, fresh	lb.	60	60	60	60	60	60	60	60	60	60		600	600.00
Vegetables, leafy, green, and yellow														
Cabbage, fresh	lb.		50	15				15	35				115	115.00
Vegetables, other														
Root Vegetables Beets Carrots Sugar Beets Turnips or any locally procured vegetable	lb.	30	30	30	60	60	30	60	30	60	30		420	420.00
Onions, dehydrated	lb.		.25	.25				.25					.75	.75
Sauerkraut, canned	No. 10 can	3					3				3		9	55.00
Fruits, dehydrated and evaporated														
Raisins, dried	lb.			7						7			14	14.00
Apple Nuggets, dehy- drated	lb.					4							4	4.00
Prunes, dried	lb.		6										6	6.00
Beverages														
Coffee, roasted and ground	lb.	6	6	6	6	6	6	6	6	6	6		60	60.00
Condiments														
Cornstarch	1-lb. pkg.	6											6	6.00
Pepper, black	1-lb. pkg.	1											1	1.00
Powder, baking	1-lb. pkg.	1											1	1.00
Salt, issue	10-lb. bag	1.5											1.5	15.00
Vinegar, concentrated, 250 grain	qt.	0.6											0.6	1.20
Soda, baking	1-lb. pkg.	2											2	2.00

Note: When available, captured subsistence will be issued in lieu of similar items appearing on the menu on a pound-for-pound basis.

SUBSTITUTION TABLE

Authority is granted depots to make the following substitutions only in case of emergency. Every effort will be made to issue the components appearing on the issue chart. Substitutions other than the following must be approved by the Office of the Chief Quartermaster.

Component Item	Substitutive Item	Quantity (Pounds) per Pound of Component	
Meat and Vegetable Stew	Pork Sausage	.81	
	Bacon	.26	
	Sausage, Vienna	.60	
	Hash, meat and vegetable	.90	
	Hash, corned beef	1.00	
	Chili Con Carne	.69	
	Salmon	.64	
	Mackerel	.64	
Milk, evaporated, canned	Milk, powdered, skim	.35	
	Cereal, wheat	1.20	
	Cereal, whole wheat	1.00	
Cereal, whole wheat	Rolled Oats	1.20	
	Cereal, wheat	1.00	
Rolled Oats	Cereal, wheat	.83	
	Cereal, whole wheat	.83	
Rice	Spaghetti or Macaroni	1.00	
Spaghetti or Macaroni	Rice	1.00	
Hominy, dehydrated	Macaroni, Spaghetti, or Rice	2.50	
Bread, German or whole wheat	Type-C Biscuits or Crackers, whole wheat	.67	
Type-C Biscuits or Crackers, whole wheat	Bread, German or whole wheat	1.50	
Beans, kidney, dry	Beans, issue	1.00	
Beans, issue	Beans, kidney	1.00	
Potatoes, fresh	Root Vegetables	.53	
Any Locally Procured Fresh Vegetable:	Carrots, dehydrated	.10	
	Beets, dehydrated	.10	
	Carrots	.10	
	Sugar Beets	.50	
	Turnips	.50	
		Spinach, canned	.50
		Sauerkraut, canned	.50
		Tomatoes, canned	.50

Component Item	Substitutive Item	Quantity (Pounds) per Pound of Component
Beans, green, canned Spinach, canned Sauerkraut, canned Tomatoes, canned	Any Locally Procured Fresh Vegetable: Beets Carrots Sugar Beets Turnips	2.00
Carrots, dehydrated Beets, dehydrated Cabbage, dehydrated	Any Locally Procured Fresh Vegetable:	10.00
Raisins, dried	Apple Nuggets, dehydrated	.55
Prunes, dried	Apple Nuggets, dehydrated	.66

Bread Formula Using Captured Flour

The following quantities of ingredients are required to produce approximately 543 pounds of bread when German flour is available. When captured German flour is exhausted, bread for prisoners of war will be produced from national wheat flour, 85 percent extraction, or French flour, 95 percent extraction.

100 lb. US Flour	8 lb. Salt
300 lb. German Flour	6 lb. Sugar
3 lb. Dry Yeast	22 gal. water (variable) ⁽¹⁾

Formula for Cabbage Soup

- 15 lb. cabbage, coarsely sliced
- 4 lb. potatoes, coarsely diced
- 1 lb. flour
- 1/4 lb. dehydrated onions
- Bacon grease
- Salt
- Pepper
- Available root vegetables (may be omitted)
- left-over meat scraps, cut in dices (may be omitted)

Add reconstituted onion to bacon grease. Fry until brown. Add flour. Fry, stirring occasionally, until well browned. Thin, gradually, with hot water. Season well with salt and pepper.

Put all vegetables in soup pot. Fill with water. Cook until tender. Add any available meat scraps, diced. (These may be omitted.)

Combined soup and thinned brown sauce. Season with salt and pepper, and bring to a boil. Serve with croutons made from stale bread and heels.

This should resemble a thick vegetable soup and may be made entirely from cabbage if no other vegetables are available.

Serves 100 men.

⁽¹⁾ Because of the wide variance in all types of captured flour which have been experimented with, it is essential that suitable water content be determined before too many doughs are mixed.

*ETOUSA Prisoners of War Menu No. 2, OCQM, 21 March 1945.

APPENDIX XXIV-B

UNITED STATES ARMY MENUS AND ISSUE CHART FOR RUSSIAN NATIONALS*

Breakfast	Dinner	Supper
Menu No. 1		
Wheat Cereal	Pea Soup, dehydrated	Baked Beans with Bacon
Bacon	Vienna Sausage	Sliced Cheese
Dark Bread	Potatoes, fresh	Root Vegetable
Butter, canned	Spinach	Dark Bread
Coffee	Stewed Peaches	Marmalade
Milk	Dark Bread	Tea
	Butter, canned	
	Coffee	
Menu No. 2		
Whole Wheat Cereal	Grapefruit Juice	Meat and Vegetable Stew
Scrambled Eggs	Corned Beef Patties	Lima Beans
Dark Bread	with Catsup	Boiled Cabbage
Marmalade	Potatoes, fresh	Applesauce
Coffee	Root Vegetable	Dark Bread
Milk	Dark Bread	Butter, canned
	Butter, canned	Coffee
	Cocoa	
Menu No. 3		
Corned Beef Hash	Bean Soup, dehydrated	Bouillon
Dark Bread	Salmon with Tomato Sauce	Macaroni and Cheese
Butter, canned	Potatoes, fresh	Green Beans
Coffee	Peas	Root Vegetable
Milk	Pudding	Dark Bread
Oats	Dark Bread	Marmalade
	Butter, canned	Tea
	Coffee	
Menu No. 4		
Bacon	Pea Soup, dehydrated	Meat and Vegetable Stew
Dark Bread	Corned Beef Hash	Boiled Beans
Butter, canned	Tomato Catsup	Root Vegetable
Coffee	Potatoes, fresh	Dark Bread
Milk	Cabbage	Marmalade
Cereal	Sliced Pineapple	Coffee
	Dark Bread	
	Butter, canned	
	Tea	

*U. S. Army Ration for Russian Nationals, OCQM, 15 March 1945.

Breakfast**Dinner****Supper****Menu No. 5**

Whole Wheat Cereal
 Dark Bread
 Marmalade
 Coffee
 Milk

Corned Beef
 Potatoes, fresh
 Green Beans
 Pudding
 Dark Bread
 Butter, canned
 Coffee

Bean Soup, dehydrated
 Salmon
 Spaghetti with Cheese
 Root Vegetable
 Dark Bread
 Butter, canned
 Lemonade

Menu No. 6

Rolled Oats
 Bacon
 Dark Bread
 Butter, canned
 Coffee

Pork Luncheon Meat
 Potatoes, fresh
 Root Vegetable
 Peaches, canned
 Dark Bread
 Butter, canned
 Tea

Bouillon
 Meat and Vegetable Hash
 Rice
 Tomatoes
 Dark Bread
 Marmalade
 Coffee

Menu No. 7

Wheat Cereal
 Scrambled Eggs
 Dark Bread
 Coffee
 Milk

Bean Soup, dehydrated
 Pork Sausage
 Potatoes, fresh
 Spinach
 Applesauce
 Dark Bread
 Butter, canned
 Coffee

Boiled Beans with Bacon
 Sliced Cheese
 Root Vegetable
 Dark Bread
 Butter, canned
 Cocoa

Menu No. 8

Whole Wheat Cereal
 Dark Bread
 Marmalade
 Coffee
 Milk

Grapefruit Juice
 Meat and Vegetable Stew
 Potatoes, fresh
 Peas
 Stewed Prunes
 Dark Bread
 Butter, canned
 Tea

Pea Soup, dehydrated
 Corned Beef Hash
 Tomatoes with Type-C
 Biscuits
 Dark Bread
 Butter, canned
 Coffee

Menu No. 9

Rolled Oats
 Dark Bread
 Butter, canned
 Coffee
 Milk

Beef and Gravy
 Potatoes, fresh
 Root Vegetable
 Pudding
 Dark Bread
 Butter, canned
 Coffee

Bouillon
 Pork Sausage
 Spanish Rice
 Spinach
 Dark Bread
 Marmalade
 Lemonade

Breakfast**Dinner****Supper****Menu No. 10**

Wheat Cereal
Bacon
Dark Bread
Butter, canned
Coffee
Milk

Bean Soup, dehydrated
Meat and Vegetable Hash
Potatoes, fresh
Cabbage, fresh
Applesauce
Dark Bread
Butter, canned
Cocoa

Corned Beef
Boiled Beans
Root Vegetable
Dark Bread
Marmalade
Coffee

**UNITED STATES ARMY RATION
FOR RUSSIAN NATIONALS**

Issue Chart for 100 Men for 10 Days

Item	Unit	Menu Number										Total	
		1	2	3	4	5	6	7	8	9	10	Units	Pounds
Meats													
Bacon, canned	lb.	13			10		10	3			10	46	46.00
Beef, corned, canned	6-lb. can		5			5					5	15	90.00
Beef and Gravy, canned	lb.									20		20	20.00
Hash, corned beef, canned	5½-lb. can			4	5				5			14	77.00
Hash, meat and vegetable	No. 10 can						5				5	10	67.50
Salmon, canned	lb.			20		20						40	40.00
Sausage, pork, canned	2-lb. can							15		15		30	60.00
Pork Luncheon Meat	6-lb. can						5					5	30.00
Stew, meat and vegetable	30-oz. can		20		20				20			60	112.20
Sausage, Vienna, canned	24-oz. can	12										12	18.00
Eggs, dehydrated	lb.		5					5				10	10.00
Milk Products													
Milk, evaporated, canned	14½-oz. can	20	25	20	18	20	15	24	15	12	22	191	173.05
Cheese, canned	lb.	5		5		5		5				20	20.00
Butter, canned	lb.	2	2	2	2	2	2	2	2	2	2	20	20.00
Fats, other													
Lard Substitute	lb.	25										25	25.00
Oil, vegetable, salad	qt.	5										5	10.00
Sugar, Sirups, Spreads													
Marmalade	No. 10 can	1	1	1	1	1	1		1	1	1	9	72.00
Dessert Powder, assorted	5-lb. can			1		1				1		3	15.00
Sugar, granulated	lb.	20	24	16	16	20	16	24	20	20	16	192	192.00
Tomatoes and Citrus Fruits													
Lemon Crystals	11-oz. can					2				2		4	2.76
Tomatoes, canned	No. 10 can			1			3		3	1		8	50.96
Tomato Catsup	No. 10 can		1		1							2	14.00
Grapefruit Juice	No. 10 can		6						6			12	75.72
Grain Products													
Bread, fresh, dark	lb.	85	85	85	85	85	85	85	85	85	85	850	850.00
Crackers, type C	lb.								5			5	5.00
Cereal, wheat, uncooked	lb.	8			8			8			8	32	32.00
Cereal, whole wheat	lb.		8			8			8			24	24.00
Cereal, oats, rolled	48-oz. pkg.			3			3			3		9	27.00
Flour, wheat	lb.	8	8	8	8	8	8	8	8	8	8	80	80.00
Rice	lb.						10			10		20	20.00
Macaroni or Spaghetti	lb.			12		12						24	24.00

Item	Unit	Menu Number										Total	
		1	2	3	4	5	6	7	8	9	10	Units	Pounds
Cornstarch	lb.	3										3	3.00
Fruits, other													
Peaches, canned	No. 10 can						3					3	20.25
Pinapple, canned	No. 10 can				3							3	20.25
Dried Legumes													
Beans, lima, dried	lb.		12									12	12.00
Beans, white, issue	lb.	18			18			18			18	72	72.00
Soup, bean, dehydrated	lb.			4		4		4			4	16	16.00
Soup, pea, dehydrated	lb.	4			4				4			12	12.00
Potatoes													
Potatoes, fresh	lb.	65	65	65	65	65	65	65	65	65	65	650	650.00
or Potatoes, dehydrated	lb.	13	13	13	13	13	13	13	13	13	13	130	130.00
Vegetables, leafy, green, and yellow													
Beans, string, canned	No. 10 can			3		3						6	37.86
Spinach, canned	No. 10 can	3						3		3		9	55.17
Peas, canned	No. 10 can			3					3			6	39.36
Cabbage, fresh or	lb.		30		30						30	90	90.00
Sauerkraut, canned	No. 10 can		3		3						3	9	55.71
Vegetables, other													
Root Vegetables	lb.	30	30	30	30	30	30	30		30	30	270	270.00
or Tomatoes, canned	No. 10 can	3				3		3				9	57.33
or Beets, canned	No. 10 can		3	3								6	39.00
or Peas, canned	No. 10 can				3		3					6	39.36
or Beans, string, canned	No. 10 can									3		3	18.93
or Corn, canned	No. 2 can										12	12	15.00
Fruits, dehydrated and evaporated													
Apple Nuggets	lb.		4					4			4	12	12.00
Peaches, evaporated	lb.	7										7	7.00
Prunes, evaporated	lb.								7			7	7.00
Beverages													
Coffee	lb.	6	6	6	6	6	6	6	6	6	6	60	60.00
Cocoa	lb.		3					3			3	9	9.00
Tea	lb.	.75		.75	.75		.75		.75			3.75	3.75
Condiments													
Bouillon Cubes	ea.			100			100			100		300	3.82
Mustard, powdered	4-oz. cont.	1										1	0.25
Pepper, black	1-lb. cont.	1.5										1.5	1.50
Salt	lb.	15										15	15.00
Sauce, kitchen, concentrated	12-oz. bot.	.33										.33	0.25
Soda, baking	1-lb. cont.	1										1	1.00
Vinegar, concentrated, 250 grain	qt.	6										0.6	1.60

Note: This menu contains components for the preparation of kasha and borsch.

APPENDIX XXIV-C

UNITED STATES ARMY MENUS AND ISSUE CHART FOR CONTINENTAL CIVILIAN EMPLOYEES*

Breakfast	Dinner	Supper
Menu No. 1		
Wheat Cereal	Pea Soup, dehydrated	Baked Beans with Bacon
Bacon	Vienna Sausage	Sliced Cheese
Bread	Potatoes, fresh	Root Vegetable
Butter, canned	Spinach	Bread
Coffee	Stewed Peaches	Marmalade
Milk	Bread	Tea
	Butter, canned	
	Coffee	
Menu No. 2		
Whole Wheat Cereal	Grapefruit Juice	Meat and Vegetable Stew
Scrambled Eggs	Corned Beef Patties	Lima Beans
Bread	with Catsup	Boiled Cabbage
Marmalade	Potatoes, fresh	Applesauce
Coffee	Root Vegetable	Bread
Milk	Bread	Butter, canned
	Butter, canned	Coffee
	Cocoa	
Menu No. 3		
Corned Beef Hash	Bean Soup, dehydrated	Bouillon
Bread	Salmon with Tomato Sauce	Macaroni and Cheese
Butter, canned	Potatoes, fresh	Green Beans
Coffee	Pudding	Root Vegetable
Milk	Bread	Bread
Oats	Butter, canned	Marmalade
	Coffee	Tea
Menu No. 4		
Bacon	Pea Soup, dehydrated	Meat and Vegetable Stew
Bread	Corned Beef Hash	Boiled Beans
Butter, canned	Tomato Catsup	Root Vegetable
Coffee	Potatoes, fresh	Bread
Milk	Cabbage	Marmalade
Cereal	Sliced Pineapple	Coffee
	Bread	
	Butter, canned	
	Tea	

*Menus for Continental Civilian Employees, OCQM, 14 March 1945.

Breakfast**Dinner****Supper****Menu No. 5**

Whole Wheat Cereal
Bread
Marmalade
Coffee
Milk

Corned Beef
Potatoes, fresh
Green Beans
Pudding
Bread
Butter, canned
Coffee

Bean Soup, dehydrated
Salmon
Spaghetti with Cheese
Root Vegetable
Bread
Butter, canned
Lemonade

Menu No. 6

Rolled Oats
Bacon
Bread
Butter, canned
Coffee

Pork Luncheon Meat
Potatoes, fresh
Root Vegetable
Peaches, canned
Bread
Butter, canned
Tea

Bouillon
Meat and Vegetable Hash
Rice
Tomatoes
Bread
Marmalade
Coffee

Menu No. 7

Wheat Cereal
Scrambled Eggs
Bread
Coffee
Milk

Bean Soup, dehydrated
Pork Sausage
Potatoes, fresh
Spinach
Applesauce
Bread
Butter, canned
Coffee

Boiled Beans with Bacon
Sliced Cheese
Root Vegetable
Bread
Butter, canned
Cocoa

Menu No. 8

Whole Wheat Cereal
Bread
Marmalade
Coffee
Milk

Grapefruit Juice
Meat and Vegetable Stew
Potatoes, fresh
Peas
Stewed Prunes
Bread
Butter, canned
Tea

Pea Soup, dehydrated
Hash, corned beef
Tomatoes with Type-C
Biscuits
Bread
Butter, canned
Coffee

Menu No. 9

Rolled Oats
Bread
Butter, canned
Coffee
Milk

Beef and Gravy
Potatoes, fresh
Root Vegetable
Pudding
Bread
Butter, canned
Coffee

Bouillon
Pork Sausage
Spanish Rice
Spinach
Bread
Marmalade
Lemonade

Breakfast**Dinner****Supper****Menu No. 10**

Wheat Cereal
Bacon
Bread
Butter, canned
Coffee
Milk

Bean Soup, dehydrated
Meat and Vegetable Hash
Potatoes, fresh
Cabbage, fresh
Applesauce
Bread
Butter, canned
Cocoa

Corned Beef
Boiled Beans
Root Vegetable
Bread
Marmalade
Coffee

Issue Chart for 100 Men for 10 Days

Item	Unit	Menu Number										Total	
		1	2	3	4	5	6	7	8	9	10	Units	Pounds
Meats													
Bacon, canned	lb.	13			10		10	3			10	46	46.00
Beef, corned, canned	6-lb. can		5			5					5	15	90.00
Beef and Gravy, canned	lb.									20		20	20.00
Hash, corned beef, canned	5½-lb. can			4	5					5		14	77.00
Hash, meat and vegetable	No. 10 can						5				5	10	67.50
Salmon, canned	lb.			20		20						40	40.00
Sausage, pork, canned	2-lb. can							15		15		30	60.00
Pork Luncheon Meat	6-lb. can						5					5	30.00
Stew, meat and vegetable	30-oz. can		20		20					20		60	112.20
Sausage, Vienna	24-oz. can	12										12	18.00
Eggs, dehydrated	lb.		5					5				10	10.00
Milk Products													
Milk, evaporated, canned	14½-oz. can	20	25	20	18	20	15	24	15	12	22	191	173.05
Cheese, canned	lb.	5		5		5		5				20	20.00
Butter, canned	lb.	2	2	2	2	2	2	2	2	2	2	20	20.00
Fats, other													
Lard Substitute	lb.	15										15	15.00
Oil, vegetable, salad	qt.	5										5	10.00
Sugar, Sirups, Spreads													
Marmalade	No. 10 can	1	1	1	1	1	1		1	1	1	9	72.00
Dessert Powder, assorted	5-lb. can			1		1				1		3	15.00
Sugar, granulated	lb.	20	24	16	16	20	16	24	20	20	16	192	192.00
Tomatoes and Citrus Fruits													
Lemon Crystals	11-oz. can					2				2		4	2.76
Tomatoes, canned	No. 10 can			1			3		3	1		8	50.96
Tomato Catsup	No. 10 can		1		1							2	14.00
Grapefruit Juice	No. 10 can		6						6			12	75.72
Grain Products													
Bread, fresh	lb.	80	80	80	80	80	80	80	80	80	80	800	800.00
Crackers, type C	lb.								5			5	5.00
Cereal, wheat, uncooked	lb.	6			6			6			6	24	24.00
Cereal, whole wheat	lb.		6			6			6			18	18.00
Cereal, oats, rolled	48-oz. pkg.			2			2			2		6	18.00
Flour, wheat	lb.	5	5	5	5	5	5	5	5	5	5	50	50.00
Rice	lb.						10			10		20	20.00
Macaroni or Spaghetti	lb.			12		12						24	24.00
Cornstarch	lb.	3										3	3.00
Fruits, other													
Peaches, canned	No. 10 can						3					3	20.25

Item	Unit	Menu Number										Total	
		1	2	3	4	5	6	7	8	9	10	Units	Pounds
Pineapple, canned	No. 10 can				3							3	20.26
Dried Legumes													
Beans, lima, canned	lb.		12									12	12.00
Beans, issue, white	lb.	18			18			18			18	72	72.00
Soup, bean, dehydrated	lb.			4		4		4			4	16	16.00
Soup, pea, dehydrated	lb.	4			4				4			12	12.00
Potatoes													
Potatoes, fresh	lb.	60	60	60	60	60	60	60	60	60	60	600	600.00
or Potatoes, dehydrated	lb.	12	12	12	12	12	12	12	12	12	12	120	120.00
Vegetables, leafy, green, and yellow													
Beans, string, canned	No. 10 can			3		3						6	37.86
Spinach, canned	No. 10 can	3						3		3		9	55.17
Peas, canned	No. 10 can			3					3			6	39.36
Cabbage, fresh	lb.		30		30						30	90	90.00
or Sauerkraut, canned	No. 10 can		3		3						3	9	55.71
Vegetable, other													
Root Vegetables	lb.	30	30	30	30	30	30	30		30	30	270	270.00
or Tomatoes, canned	No. 10 can	3				3		3				9	57.33
or Beets, canned	No. 10 can		3	3								6	39.00
or Peas, canned	No. 10 can				3		3					6	39.36
or Beans, string, canned	No. 10 can									3		3	18.93
or Corn, canned	No. 2 can										12	12	15.00
Fruits, dehydrated and evaporated													
Apple Nuggets	lb.		4					4			4	12	12.00
Peaches, evaporated	lb.	7										7	7.00
Prunes, evaporated	lb.								7			7	7.00
Beverages													
Coffee	lb.	6	6	6	6	6	6	6	6	6	6	60	60.00
Cocoa	lb.		3					3			3	9	9.00
Tea	lb.	.75		.75	.75		.75		.75			3.75	3.75
Condiments													
Bouillon Cubes	ea.			100				100			100	300	2.82
Mustard, powdered	4-oz. cont.	1										1	0.25
Pepper, black	1-lb. cont.	1.5										1.5	1.50
Salt	lb.	15										15	15.00
Sauce, kitchen, concentrated	12-oz. bot.	.33										0.33	0.25
Soda, baking	1-lb. cont.	1										1	1.00
Vinegar, concentrated, 250 grain	qt.	.6										0.6	1.6

Note: This menu contains components for the preparation of kasha and borsch. The components of the dinner meal will be issued to employees entitled to one meal a day.

APPENDIX XXV

RATIONS FOR DOGS*

23 November 1943

One-Day Ration for 70--90-pound Animal Performing Guard Duty

Item	Quantity (Ounces)
Meats	
Beef, boneless, frozen (boiling and stewing)	12.0
Fish, canned ⁽¹⁾	4.0
Milk, whole, dry	2.0 ⁽²⁾
Vegetables	
Tomatoes, canned	1.0
Cabbage, canned	1.0
Carrots, canned	1.0
Spinach, canned	1.0
Cereals	
Wheat, whole	1.33
Oats, rolled	1.33
Cornmeal	1.34
Miscellaneous	
Salt	.25
Cod Liver Oil (Halibut or Shark)	.25
TOTAL	26.50

(1) Salmon 50%, Mackerel 50%.

(2) Two ounces powdered whole milk, when reconstituted, is equivalent to 16 ounces liquid milk. This item is computed as 16 ounces in determining total weight.

* Rations for Dogs, ETOUSA, OCQM, 23 November 1943.

APPENDIX XXVI

COMPARISON OF BRITISH AND UNITED STATES MOBILE BAKERIES*

	British Mobile Bakery Unit	U. S. Army Mobile Bakery Unit using M-1942 Equipment
Equipment	3 ovens, Diesel 1 mixer, electric 1 divider and rounder, electric 2 generators, Diesel	32 ovens, gasoline 16 mixers, gasoline
Daily Capacity:		
Recommended	25,000 pounds	24,000 pounds
Maximum	35,000 pounds	32,000 pounds
Fuel Consumption:		
Gasoline		15 gallons per 1000 pounds
Diesel Oil	6 gallons per 1000 pounds	
Flexibility	No divisibility	4 platoons
Trucks Required to Move	12 trucks and 9 trailers	40 2½-ton trucks

*U. S. Army Subsistence Experience in the European Theater, World War II, Maj. Gen. Robert M. Littlejohn, OTCQM, (undated), p. 129.

APPENDIX XXVII

COMPOSITION OF K RATION*

Breakfast Unit

- 1 Package Defense (K-1) Biscuit (1.6 ounces)
- 1 Package Compressed Graham (K-2) Biscuit (1.4 ounces)
- 1 Can Veal Luncheon Meat
- 1 Package Malted Milk Dextrose Tablets (15 tablets $\frac{3}{4}$ inch square and $\frac{5}{16}$ inch thick)
- 2 Packages Soluble Coffee ($3\frac{1}{2}$ grams each)
- 3 Tablets Sugar, individually wrapped
- 1 Stick Chewing Gum (spearmint, peppermint or pepsin)

Dinner Unit

- 1 Package Defense Biscuit
- 1 Package Compressed Graham Biscuit
- 1 Can Pork Luncheon Meat
- 1 Package Dextrose Tablets
- 1 Tube Concentrated Bouillon (19 grams)
- 1 Stick Chewing Gum

Supper Unit

- 1 Package Defense Biscuit
- 1 Package Compressed Graham Biscuit
- 1 Can Cervelat Sausage
- 1 2-ounce Bar U. S. Field Ration D
- 3 Tablets Sugar, individually wrapped
- 1 Package Lemon Juice Powder, synthetic ($\frac{1}{4}$ ounce)
- 1 Stick Chewing Gum

*Thatcher, Harold W., *The Development of Special Rations in the Army*, QMC Historical Studies No. 6, OCQM, September 1944, p. 56.

APPENDIX XXVIII

THE FORMULA FOR THE D RATION*

December 1942

	Parts
Chocolate, plain, adjusted to 54 percent cacao fat.....	160
Sucrose	160
Milk, dry, powdered, skimmed	70
Added Cacao Fat	30
Oat Flour, raw	20
Vanillin	1/2
or Ethyl Vanillin	1/6

Sufficient thiamin hypochloride is added to give not less than 0.45 milligram per 4-ounce bar.

*Thatcher, Harold W., *The Development of Special Rations in the Army*, QMC Historical Studies No. 6, OCQM, September 1944, p. 13.

APPENDIX XXIX

IMPROVEMENTS IN TYPE 10-IN-1 RATION*

November 1943

January 1945

Menu No. 1

Cereal, premixed	20 oz.	Army Spread, canned	7.5 oz.
Pork Sausage	64 oz.	Coffee, soluble	2 oz.
Biscuits, type C, square	32 oz.	Fruit Pudding, canned	35 oz.
Jam	22 oz.	Hamburger, canned	60 oz.
Coffee Product, soluble	2 oz.	Ham and Eggs, canned	68 oz.
Milk and Sugar	6 oz.	Hash, corned beef, dehydrated or	
Baked Beans, dehydrated	48 oz.	Meat and Rice, dehydrated	26 oz.
Tomatoes	38 oz.	Jam, canned	22 oz.
Biscuits, type C, square	32 oz.	Milk, evaporated	12 oz.
Butter, preserved	5½ oz.	Tomatoes, canned	38 oz.
Candy, hard	13 ¾ oz.	Biscuits	56 oz.
Grape Beverage Powder	30 gm.	Cereals, premixed	20 oz.
Sugar	16 oz.	Cocoa, beverage	20 oz.
Toilet Tissue	200 sheets	Caramel Bar	20 oz.
10 K Ration Breakfast Units	136 oz.	Sugar	12 oz.
		Salt	2 oz.
		Cigarettes	100 ea.
		Halazone Tablets	100 ea.
		Can Opener, small	2 ea.
		Paper, toilet	250 sheets
		Soaps, toilet	2 cakes
		Towels, paper	40 sheets
		Partial Dinner Unit	
		Biscuits	2 pkg.
		Jelly Bar	1 ea.
		Grape Juice, synthetic	1 pkg.
		Sugar	1.2 oz.
		Chewing Gum, stick	1 ea.

Menu No. 2

Cereal, premixed	20 oz.	Army Spread, canned	7.5 oz.
Bacon	48 oz.	Bacon, sliced, canned	48 oz.
Biscuit, type C, square	32 oz.	Coffee, soluble	4 oz.
Jam	22 oz.	Corn, canned	24-38 oz.
Coffee Product, soluble	2 oz.	Fruit Cake, canned	35 oz.
Milk and Sugar	6 oz.	Jam, canned	22 oz.
Stew, meat, kidney and vegetable	60 oz.	Milk, evaporated, canned	12 oz.
Beans, string	38 oz.	Pork Tenderloin, canned	60 oz.
Biscuits, type C, square	32 oz.	Peanuts, canned	15 oz.
Butter, preserved	7.5 oz.	Stew, English or Meat Balls	
		and Spaghetti	68 oz.

*Improvements in Type 10-in-1 Ration, OTCQM, January 1946.

Prunes	20 oz.	Biscuits	64 oz.
Coffee Product, soluble	2 oz.	Cereal, premixed	20 oz.
Toilet Tissue	200 sheets	Sugar	24 oz.
10 K Ration Dinner Units	136 oz.	Salt	2 oz.
		Cigarettes	100 ea.
		Halazone Tablets	100 ea.
		Matches, clip of 10	10 clips
		Can Opener, small	2 ea.
		Paper, toilet	250 sheets
		Soap, toilet	2 cakes
		Towels, paper	40 sheets
		Partial Dinner Unit	
		Biscuits	2 pkg.
		Caramel	1 pkg.
		Sugar	1.2 oz.
		Chewing Gum, stick	1 ea.

Menu No. 3

Cereal, premixed	20 oz.	Army Spread	7.5 oz.
Ham and Eggs	56 oz.	Corned Beef, canned	48 oz.
Biscuits, type C, square	32 oz.	Coffee, soluble	2 oz.
Jam	22 oz.	Jam, canned	22 oz.
Coffee Product, soluble	2 oz.	Milk, evaporated, canned	12 oz.
Milk and Sugar	6 oz.	Peas, canned	40 oz.
Corned Beef	48 oz.	Plum Pudding, canned	35 oz.
Peas	40 oz.	Pork and Corn, canned	60 oz.
Biscuits, type C, square	32 oz.	Pork Sausage Meat, canned	68 oz.
Butter, preserved	7.5 oz.	Biscuits	56 oz.
Fruit Bar	20 oz.	Cereal, premixed	20 oz.
Orange Powder	70 gm.	Cocoa Beverage	20 oz.
Sugar	16 oz.	Fruit Bar	20 oz.
Toilet Tissue	200 sheets	Sugar	12 oz.
10 K Ration Supper Units	136 oz.	Partial Dinner Unit	
		Biscuits	2 pkg.
		Chocolate Bar	2 oz.
		Orange Juice Powder, synthetic	1 pkg.
		Sugar	1.2 oz.
		Chewing Gum, stick	1 ea.

Menu No. 4

Cereal, premixed	20 oz.	Army Spread	7.5 oz.
Bacon	48 oz.	Bacon, sliced, canned	48 oz.
Biscuit, type C, square	32 oz.	Beans, snap, canned	38 oz.
Jam	22 oz.	Beef, roast, canned	48 oz.
Coffee Product, soluble	2 oz.	Coffee, soluble	4 oz.
Milk and Sugar	6 oz.	Fig Pudding	7.5 oz.
Roast Beef	48 oz.	Jam, canned	22 oz.
Corn, whole kernel	40 oz.	Milk, evaporated, canned	12 oz.
Biscuit, type C, square	32 oz.	Pork and Applesauce or Pork Sausage	
Butter, preserved	7.5 oz.	Patties and Apples, canned	60 oz.
Candy, hard	13.75 oz.		

Lemon Powder	70 gm.	Biscuits	64 oz.
Sugar	16 oz.	Caramel Nougat Bar	20 oz.
Toilet Tissue	200 sheets	Cereal, premixed	20 oz.
10 K Rations Breakfast Units	136 oz.	Sugar	24 oz.
		Partial Dinner Unit	
		Biscuits	2 pkg.
		Coconut Bar	1 bar
		Lemon Powder, synthetic	1 pkg.
		Sugar	1.2 oz.
		Chewing Gum, stick	1 ea.

Menu No. 5

Cereal, premixed	20 oz.	Army Spread	7.5 oz.
Bacon and Eggs	56 oz.	Pork Sausage, link, canned	64 oz.
Biscuits, type C, square	52 oz.	Beans, lima, canned	40 oz.
Jam	22 oz.	Cheese, canned	32.5 oz.
Coffee Product, soluble	2 oz.	Coffee, soluble	2 oz.
Milk and Sugar	6 oz.	Ham with Raisin Sauce, canned or	
Corned Beef Hash, dehydrated	40 oz.	Ham with Sweet Potato, canned	68 oz.
Lima Beans	40 oz.	Jam, canned	22 oz.
Biscuits, type C, square	32 oz.	Milk, evaporated	12 oz.
Butter, preserved	7.5 oz.	Pineapple Rice Pudding, canned	37.5 oz.
D Ration Bars	20 oz.	Biscuits	56 oz.
Coffee Product, soluble	2 oz.	Cereal, premixed	20 oz.
Toilet Tissues	200 sheets	Chocolate Bar	20 oz.
		Cocoa Beverage	20 oz.
		Sugar	12 oz.
		Partial Dinner Unit	
		Biscuits	2 pkg.
		Vanilla Fudge Bar	1 bar
		Orange Juice Powder, synthetic	1 pkg.
		Sugar	1.2 oz.
		Chewing Gum, stick	1 ea.

APPENDIX XXX

IMPROVEMENTS IN TYPE K RATION*

November 1943

January 1945

Breakfast

Meat and Egg Product	3 $\frac{3}{4}$ oz.	Meat and Egg Product	3 $\frac{3}{4}$ oz.
Biscuits, K-1	1 $\frac{3}{4}$ oz.	Biscuits, small, rectangular	0.8-1.2 oz.
Biscuits, K-2	1 $\frac{1}{2}$ oz.	Cereal, premixed	1 $\frac{1}{2}$ oz.
Fruit Bar	2 oz.	Coffee, soluble	1.0 gm.
Coffee	5 gm.	Fruit Bar	2 oz.
Sugar Tablet	1 oz.	Chewing Gum, stick	1 ea.
Chewing Gum, stick	1 ea.	or Gum Tablet, sugar coated	2 ea.
Cigarettes	4 ea.	Sugar	0.8 oz.
Can Key	1 ea.	Cigarettes	4 ea.
		Halazone Tablets	12 ea.
		Wooden Spoon	1 ea.
		Toilet Paper	12 sheets
		Can Key	1 ea.

Dinner

Cheese Product	4 oz.	Cheese Product	4 oz.
Biscuits, K-1	1 $\frac{3}{4}$ oz.	Biscuits	1.4-2.1 oz.
Biscuits, K-2	1 $\frac{1}{2}$ oz.	Candy Bar	1 $\frac{1}{4}$ - 1 $\frac{2}{8}$ oz.
Confection	2 oz.	Fruit Powder, synthetic	7 gm.
Lemon Juice Powder	7 gm.	(lemon, orange, or grape)	
Sugar Tablet	1 oz.	Sugar	1.2 oz.
Chewing Gum, stick	1 ea.	Chewing Gum, stick	1 ea.
Cigarettes	4 ea.	or Gum Tablet, sugar coated	2 ea.
Can Key	1 ea.	Cigarettes	4 ea.
Matches, clip	1 ea.	Matches, clip of 10	1 ea.
		Salt Tablets	4 ea.
		Wooden Spoon	1 ea.
		Can Key	1 ea.

Supper

Meat Product	4 oz.	Meat Product, canned	4 oz.
Biscuits, K-1	1 $\frac{3}{4}$ oz.	Biscuits	1.5-2.2 oz.
Biscuits, K-2	1 $\frac{1}{2}$ oz.	Bouillon Powder	10 gm.
D Ration Bar	2 oz.	Caramels or Candy Bar	2 oz.
Bouillon Powder	10 gm.	Coffee, soluble	5 gm.
Sugar Tablet	1 oz.	Chewing Gum, stick	1 ea.
Chewing Gum, stick	1 ea.	or Gum Tablet, sugar coated	2 ea.
Cigarettes	4 ea.	Cigarettes	4 ea.
Can Key	1 ea.	Sugar	23 gm.
		Can Key	1 ea.
		Wooden Spoon	1 ea.

*Type K Ration Improvements, OTCQM, January 1946.

Variety in components was increased gradually by the introduction of the following components:

Meat and Egg Components:

Chopped Pork and Egg Yolk
Chopped Ham and Eggs

Meat Components:

Canned Pork Loaf with Carrots and
Apple Flakes
Veal and Pork Loaf
Beef and Pork Loaf
Deviled Meat
Martadella
Chicken, solid pack
Chop Suey with Pork and Toasted Al-
monds
Chipped Steak
Fried Ham
Pork Steaks

Cheese Components:

Cheese, processed, American
Cheese, processed, American and Swiss
blend
Cheese, processed, American with bacon

APPENDIX XXXI

IMPROVEMENTS IN TYPE C RATION*

November 1943

January 1945

Meat Units

Meat and Vegetable Hash	12 oz.	Meat and Beans	12 oz.
Meat and Beans	12 oz.	Meat and Vegetable Stew	12 oz.
Meat and Vegetable stew	12 oz.	Meat and Spaghetti	12 oz.
		Ham, Egg, and Potato	11½ oz.
		Meat and Noodles	12 oz.
		Pork and Rice	12 oz.
		Frankfurters and Beans	12 oz.
		Pork and Beans	12 oz.
		Ham and Lima Beans	12 oz.
		Chicken and Vegetables	12 oz.

Bread Units

Unit 1

Coffee, soluble	¼ oz.
Sugar Tablets	1 oz.
Candy, hard	3/5 oz.
Biscuits	2½ oz.
Cigarettes	3 ea.

Unit 2

Lemon Powder	7 gm.
Sugar Tablets	2 oz.
Candy, hard	3/5 oz.
Biscuits	2½ oz.
Cigarettes	3 ea.

Unit 3

Cocoa, beverage powder	2½ oz.
Candy, hard	3/5 oz.
Biscuits	2½ oz.

Unit 1

Biscuits	2 oz.
Cereal, premixed	2 oz.
Coffee, soluble	5 gm.
Peanuts, candy coated	1.2 oz.
Sugar	0.8 oz.

Unit 2

Biscuits	1.4 oz.
Fudge	2 oz.
Cookies, butterscotch	0.8 oz.
Lemon Juice Powder, synthetic	7 gm.
Sugar	1.66 oz.

Unit 3

Biscuits	2.0 oz.
Caramels	1.0 oz.
Cocoa, compressed	2.0 oz.
Jam, canned	1.5 oz.

Unit 4

Biscuits	2 oz.
Cereal, premixed	2 oz.
Coffee, soluble	5 gm.
Chocolate Drops	1.2 oz.
Sugar	0.8 oz.

*Type C Ration Improvements, OTCQM, January 1946.

Unit 5

Biscuits	1.4 oz.
Candy, hard	0.6 oz.
Cookies, butterscotch	0.8 oz.
Orange Juice Powder, synthetic	7 gm.
Sugar	1.66 oz.

Unit 6

Biscuits	2 oz.
Caramels	1 oz.
Coffee, soluble	5 gm.
Sugar	0.8 oz.
Jam, canned	1.5 oz.

Accessory Packet

(One packet issued with each complete ration).

Cigarettes, unit of 3	9 units
Chewing gum, stick	1 ea.
or Gum Chiclets	2 ea.
Matches, book of 10	1 ea.
Paper, toilet	1 packet
Halazone Tablets	12 ea.
Salt Tablets	4 ea.
Can Opener, small	1 ea. (included in 1 accessory packet in each case)

APPENDIX XXXII

THE TYPE 5-IN-1 RATION*

Menu No. 1

Army Spread -----	7 $\frac{1}{4}$ oz.	Candy, hard -----	6 $\frac{7}{8}$ oz.
Beans, snap -----	19 oz.	Cereal, premixed -----	8 oz.
Coffee Product, soluble -----	1 oz.	Cocoa Beverage Powder -----	10 oz.
Corn -----	20 oz.	Fruit Bar -----	10 oz.
Corned Beef -----	36 oz.	Grape Juice Powder -----	15 gm.
Grapefruit -----	20 oz.	Pea Soup, dehydrated -----	6 oz.
Ham and Eggs -----	30 oz.	Prune Powder, dehydrated -----	8 oz.
Milk -----	6 fl. oz.	Salt, table -----	1 $\frac{1}{2}$ oz.
Tomatoes -----	28 oz.	Sugar -----	18 oz.
Baked Beans, dehydrated -----	15 oz.	Toilet Paper -----	500 sheets
Biscuits, type C, square -----	32 oz.		

Menu No. 2

Army Spread -----	7 $\frac{1}{2}$ oz.	Biscuits, type C, square -----	32 oz.
Bacon -----	24 oz.	Candy, hard -----	6 $\frac{7}{8}$ oz.
Beef, roast -----	24 oz.	Cereal, premixed -----	8 oz.
Coffee Product, soluble -----	2 oz.	Fruit Bar -----	10 oz.
Meat and Vegetable Stew -----	60 oz.	Lemon Juice Powder -----	1 $\frac{1}{4}$ oz.
Milk -----	6 fl. oz.	Prunes, evaporated -----	10 oz.
Peas -----	20 oz.	Rice, precooked -----	10 oz.
Tomato Juice -----	30 fl. oz.	Salt, table -----	1 $\frac{1}{2}$ oz.
Apricot Spread -----	8 oz.	Sugar -----	18 oz.
Bean Soup, dehydrated -----	6 oz.	Toilet Paper -----	500 sheets

Menu No. 3

Army Spread -----	7 $\frac{1}{2}$ oz.	Candy, hard -----	6 $\frac{7}{8}$ oz.
Carrots -----	20 oz.	Cereal, premixed -----	8 oz.
Coffee Product, soluble -----	1 oz.	Fruit Bar -----	10 oz.
Meat Balls and Spaghetti -----	60 oz.	Orange Juice Powder -----	1 $\frac{1}{4}$ oz.
Milk -----	6 fl. oz.	Fruit Spread, dehydrated -----	5 oz.
Orange Juice -----	18 fl. oz.	Rice Pudding, mix, dry -----	10 oz.
Sausage -----	32 oz.	Salt, table -----	1 $\frac{1}{2}$ oz.
Stew, meat, kidney, and vegetable -----	30 oz.	Sugar -----	12 oz.
Biscuits, type C, square -----	32 oz.	Tea -----	10 bags
		Toilet Paper -----	500 sheets

*The Class I Plan for an Operation on the Continent, OCQM, 28 May 1944.

APPENDIX XXXIII

**A COMPARISON OF THE PLANNED USE WITH THE ACTUAL USE OF
OPERATIONAL RATIONS***

14 June to 16 July 1944

Date	Percentage of Total Issues								
	B Rations		C Rations		K Rations		10-in-1 Rations		5-in-1 Rations
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual	Actual
14 June	—	—	28.0	23.4	22.0	33.5	50.0	41.8	1.3
15 June	—	—	28.0	19.3	22.0	14.1	50.0	64.4	2.2
16 June	—	—	28.0	19.8	22.0	14.7	50.0	64.4	1.1
17 June	—	—	28.0	18.6	22.0	16.8	50.0	60.0	4.6
18 June	—	—	28.0	16.2	22.0	14.5	50.0	68.9	.4
19 June	—	—	28.0	9.9	22.0	14.4	50.0	76.4	2.3
20 June	—	—	28.0	14.8	22.0	9.5	50.0	74.4	1.3
21 June	—	—	28.0	13.8	22.0	14.8	50.0	69.7	1.6
22 June	—	—	28.0	4.5	22.0	9.1	50.0	85.1	1.5
23 June	—	—	28.0	8.3	22.0	16.2	50.0	73.9	1.6
24 June	—	—	28.0	10.4	22.0	15.0	50.0	73.1	1.5
25 June	—	—	28.0	8.8	22.0	12.5	50.0	76.9	1.8
26 June	—	—	28.0	8.9	22.0	10.5	50.0	79.2	1.4
27 June	—	—	28.0	9.2	22.0	7.2	50.0	82.4	1.2
28 June	—	—	28.0	6.7	22.0	6.0	50.0	86.9	1.4
29 June	—	—	28.0	7.6	22.0	10.9	50.0	85.2	1.2
30 June	—	—	28.0	8.7	22.0	9.5	50.0	80.7	1.1
1 July	—	—	28.0	12.9	22.0	6.7	50.0	79.4	1.0
2 July	—	—	28.0	8.0	22.0	9.7	50.0	80.8	1.5
3 July	—	—	28.0	10.0	22.0	8.4	50.0	82.7	.9
4 July	—	—	28.0	4.2	22.0	8.0	50.0	86.5	1.3
5 July	—	—	28.0	4.2	22.0	9.2	50.0	85.1	1.5
6 July	—	—	28.0	5.8	10.0	8.6	50.0	83.9	1.7
7 July	50.0	—	15.0	7.4	10.0	7.5	25.0	83.9	1.2
8 July	50.0	56.9	15.0	7.9	10.0	7.3	25.0	27.6	.4
9 July	50.0	63.3	15.0	2.8	10.0	13.4	25.0	19.4	1.1
10 July	50.0	65.9	15.0	7.0	10.0	11.2	25.0	15.1	.8
11 July	50.0	66.0	15.0	3.0	10.0	9.4	25.0	21.2	.4
12 July	50.0	65.9	15.0	3.7	10.0	12.1	25.0	17.9	.4
13 July	50.0	65.5	15.0	6.6	10.0	13.5	25.0	14.2	.2
14 July	50.0	69.9	15.0	3.6	10.0	10.7	25.0	15.6	.2
15 July	50.0	73.0	15.0	5.4	10.0	6.3	25.0	15.1	.2
16 July	50.0	70.6	15.0	8.5	10.0	7.6	25.0	13.2	.1

*The Class I Plan for an Operation on the Continent, OCQM, 28 May 1944.

APPENDIX XXXIV

COURSES OFFERED AT QUARTERMASTER SCHOOL CENTER

Outline for Cook's Course with Text References*

Academic Orientation (1 hour)

Introduction to course	Current policies of post and school
Objective of course	TM 10-405
Organization of classes	TM 10-205, pp. 121-24
Military courtesies and discipline	TM 21-50

Personal Hygiene and Sanitation (1 hour)

Cleanliness of personnel	AR 40-205, p. 14
Food handlers' certificates	TM 10-405, p. 70
Clean clothing, daily baths	TM 10-205, pp. 74-75
Physical examinations	TF 8-55
Hair cuts	
Communicable diseases	

Classification, Qualifications, Duties, and Discipline of Mess Personnel (1 hour)

Duties of mess officer	TM 10-405, pp. 70-75
Duties of mess sergeant	TM 10-205, sec. II, pp. 7-9
Duties of first cook	
Duties of second cook	
Duties of cook's helper	
Duties of unit baker	
Duties of dining room orderly	
Duties of kitchen police	
Discipline of personnel	

Kitchen Management and Administration (2 hours)

Cooking by definite plan	TM 10-405, pp. 71-75
Assembling of utensils and ingredients	TM 10-205, p. 86
Care of ranges, utensils, and auxiliary appliances	FS 8-52
Mess accounts	FS 10-118
Service of meals	

Care and Operation of M/37 Field Range (2 hours)

Care, maintenance and operation of the M/37 Field Range	TM 10-405, pp. 78-80
	TM 10-400, ch. 3
	TF 10-1104
	TF 10-1105

Care of Mess Equipment (1 hour)

Care of equipment, refrigerators, chinaware, silverware, trays, sinks, windows, floors, and walls	TM 10-405, p. 74
	AR 245-5

Storage of Equipment and Inspection of Mess Halls (2 hours)

Storage and inspection of equipment	TM 10-405
Proper methods of cleaning	AR 40-590
Policing mess area and garbage racks	AR 40-590

Inspection and Storage of Foods (1 hour)

Correct storage of fresh meats
Correct storage of cured and smoked meats
Correct storage of fresh and canned vegetables
Correct storage in gassed areas
Refrigeration

TM 10-405, pp. 4-15
TM 10-210, pp. 1-92
TM 10-205, pp. 35-53
FM 21-40
NLS and MB Charts
QMSB No. 21

Methods of Preserving Foods (1 hour)

Natural cooling
Drying
Curing
Smoking
Canning
Dehydration

TM 10-406, p. 1

Conservation and Methods of Economy (3 hours)

Following the menu
Use of leftovers
Proper accounting
Checking garbage
Avoiding unnecessary waste
Cooking proper amounts
Use of breads for dressings
Rendering of fats
Use of cooks work sheet

TM 10-405
TM 10-205, pp. 101-120
NLS and MB Charts
FS 10-1291
FS 10-122
FS 10-123
FS 10-127

Elements of Nutrition (1 hour)

Definition of nutrition
Balanced diet
Food functions
Balanced menu
Classes of foods

TM 10-405, sec. 2, pp. 5-12
TM 10-205, p. 25
NLS and MB Charts
FS 8-52
FS 8-53
QMSB No. 8

Menu Making and Checking (2 hours)

Balanced menus
Substitutions
Combinations
Food preferences
Quantities
Components
Menu planning

TM 10-405, sec. 2
TM 10-205, pp. 26-33

Study of Recipes (1 hour)

Use of leftovers
Correct quantities
Element of time
Methods of preparation

TM 10-405, ch. 2, sec. 1, sec. 2

Rations (2 hours)

Rations defined
Procurement of rations
Daily telegrams
Strength report
Commissary procedure
Types of rations and distribution
Personnel entitled to a ration
A, B, C, D, K and 10-in-1 rations

AR 30-2210
WD Cir. 158
WD Cir. 290
FM 10-5
FM 10-10
TM 10-215
TM 10-405, pp. 66-69
TM 10-205, pp. 10-16
TF 10-1215
TF 10-1216
TF 10-1237
FS 10-95
FS 10-131

Principles and Practices of Cooking (3 hours)

Methods of cooking
Cooking terms defined
Use of heat in cooking
Cooking in fat

TM 10-405, pp. 1-4, 51-55
NLS and MB Charts

Preparation of Foods for Cooking (1 hour)

Preparation of meats and vegetables

TM 10-405, pp. 51-55
TM 10-205, p. 54
FS 8-52

Field Sanitation (2 hours)

Importance of field sanitation
Choice of bivouac site
Responsibility of sanitary supervision
Disposal of kitchen waste
Storage of foods
Sterilization of mess equipment
Fly and rodent control
Incinerators
Grease traps
Use of camouflage

FM 5-20
TM 10-405, pp. 76-82
FM 8-40, FM 21-10
TF 8-999
TF 8-1174
FS 8-60
FS 8-12
FS 8-62
FM 10-5

Field Equipment (4 hours)

Operation, care, and maintenance of M/37
Gasoline Field Range
Field Ranges Nos. 1 and 21 and Water
Heater M/37
Conversion Set M/41 and M/42
Installation of M/37 and Army Field Ranges
1 and 2 in kitchen trucks and in railway or
baggage cars
Use and care of outfit, cooking pack, mountain
sets, gasoline lanterns and marmite cans
Improvised equipment for individual cooking

TM 10-405, pp. 76-82
TM 10-205, p. 86
WD Cir. 143, 307, and 318
TF 10-1104
TF 10-1105
FS 10-138
WD TR Cir. 36, sec. 8

Field Cooking (4 hours)

Methods of preparing foods in field	FM 5-20, A, B, and C
Cooking in semipermanent kitchen	TM 10-405, pp. 76, 82
Cooking on kitchen truck	TF 10-1215
Cooking on railway or baggage cars	TF 10-1237
Individual cooking with improvised equipment	FS 10-98
Cooking with outfit cooking pack	FM 8-40
Field storage and refrigeration	FS 10-96
Cooking on M/37 Gasoline Field Range	FS 10-100
Army Field Ranges Nos. 1 and 2	FM 10-5
Care and sterilization of utensils and mess equipment	FM 21-10
Storage of foods in gassed areas	WD Cir. 24
Garbage disposal	TM 10-205, p. 56
Use of camouflage	FS 10-106
Mess sanitation	

Breakfast Foods (1 hour)

Hot and dry cereals	TM 10-405, pp. 36-38
Meat dishes	Recipes 1-13
Hot cakes and French toast	TM 10-205, p. 26
Corn meal and grits	TM 10-205, p. 32
Fruits and fruit juices	

Beverages and Their Preparation (1 hour)

Use and methods of preparation of coffee, tea, cocoa, chocolate, and cold drinks	TM 10-405, pp. 39-65 Recipes 312-315
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Dairy Products and Eggs (1 hour)

The importance and use of buttermilk, cheese, butter, ice cream, milk, and eggs	TM 10-405, pp. 35-36 QMSB No. 14 QMSB No. 16 QMSB No. 50
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Fish and Shell Fish (1 hour)

Preparation and cooking of fresh fish, smoked fish, frozen fish, oysters, clams, and crabs	TM 10-405, pp. 35-59 Recipes 136-142
Thawing of frozen fish	

Poultry Cookery (1 hour)

Types Available	TM 10-405, pp. 34-58
Selection	
Preparation for cooking	
Methods of cooking	

Preparation of Soups, Gravies, and Sauces (2 hours)

Preparation	TM 10-405, sec. 4,
Their importance in the mess	pp. 61-62, and ch. 2,
Natural gravy	secs. 3 and 1
Brown gravy	Recipes 14-45 and 121-135
Vegetable gravy and cream gravy	
Barbecue sauce	
Types of soup	
Use of leftovers in making soup	
Soup stock	
Value as a food	

Salads and Desserts and Their Preparation (1 hour)

- Rules of salad making
- Fruit salads
- Meat, fish, and egg salads
- Salad dressings
- Puddings

TM 10-405, sec. 4, pp. 47-63

Vegetables and Vegetable Cookery (2 hours)

- Preparation for cooking
- Preservation of nutriments
- Preservation of color
- Preservation of flavor
- Cooking of root, green, yellow, and leafy vegetables
- Cooking quick-frozen vegetables
- Cooking canned vegetables

TM 10-405, pp. 43-60
Recipes 143-211
QMSB No. 4

Fresh, Canned, Citrus, and Dried Fruits (2 hours)

- Importance in the mess
- Use of fruits in season
- Fresh and citrus fruits
- Canned fruits
- Dried fruits
- Preparation and serving
- Fruit preserves, jams, jellies, and marmalades

TM 10-405, p. 43
Recipes 215, 231, 243, and 253
QMSB No. 1
QMSB No. 4
QMSB No. 5

Sandwich Making (1 hour)

- Preparation and selection of ingredients
- Types of sandwiches
- Sanitary methods of wrapping and handling

Meat Cookery (2 hours)

- Proper temperatures
- Frying, roasting, and broiling
- Pan broiling and braising
- Pot stewing and stewing
- Cooking and cutting beef, lamb, pork, and veal
- Cooking canned and smoked meats

TM 10-405, pp. 56, 61, and 62
NLS and MB Charts
QAAM, MRM
TF 10-1138

Meat Carving and Serving (1 hour)

- Preparation for carving
- Carving across grain
- Carving uniform slices
- Slicing thin
- Serving hot
- Serving attractively
- Garnishing
- Sharpening knives

TM 10-405, sec. 4, pp. 56-62
sec. 6, p. 75
TF 10-1138
NLS and MB Charts
QAAM

Spices, Condiments, and Flavoring Extracts (1 hour)

- Uses of Extracts
(lemon, maple, orange, and vanilla)
- Types of spices and their uses
(oils, seeds, buds, roots, bark, and leaves)
- Condiments and their uses
(Mayonnaise, mustard, mustard dressing, sauces,
catsup, vinegar, salt, and pepper)

TM 10-405, pp. 42, 47, 48, and 58

Pastry Baking (3 hours)

Pastries and their value to the mess
Preparation and baking of sweet dough
Soft roll dough, pies, cakes, and cookies
Biscuits and icings
Flavoring
Flour
Leavening agents
Shortening and other ingredients

TM 10-405, ch. 2, sec. 2, p. 64
Recipes 264-285
TM 10-410, sec. 2, pp. 4-12 sec. 3, pp.
13-20 sec. 9, pars. 56-64
TM 10-411
QMSB No. 15
QMSB No. 9

Use and Care of Meat Cutting Tools (1 hour)

Kind of tools
Use of tools
Sharpening and steeling
Care and cleaning
Miscellaneous tools
Responsibility for knives
Cleaver, and meat hand hook
Metal mesh glove
Meat saw

TM 10-405, pars. 18-19
TF 10-1133
NLS and MB Charts
TM 10-408, p. 15
QAAM

Cutting Beef (1½ hours)

Making cuts from hindquarter
Bone structure
Removing hanging tender and kidney knob
Removing flank
Separating round from loin and rump
Cutting round
Removing tenderloin
Separating loin and rump from shell loin
Making cuts from beef forequarters
Separating wing from cross cut chuck
Cutting wing
Cutting gross cut chuck (outside and inside)

TM 10-405, pp. 19-21
TM 10-407
NLS and MB Charts
TF 10-1134
TF 10-1135

Cutting Lamb, Pork, and Veal (1 hour)

Cutting and boning lamb
Principal cuts
Boning lamb for roast
Boning lamb for stew
Cutting lamb for chops
Cuts of pork
Pointers about pork
Place of pork in mess
Shoulder roast and shoulder steaks
Cushion roast from picnics
Carving butt roasts
Boneless roast from pork loin
Boneless chops from loin
Cutting spareribs
Fresh ham roasts
Cutting veal
How to judge quality of veal
Place of veal in mess
Light and heavy veal (fore and hindquarters)

TM 10-405, pp. 22-25, 28-29
TM 10-408
NLS and MB Charts
TF 10-1136
TF 10-1137

Fresh Meat Cuts and Their Use (1 hour)

Wholesale market cuts of beef for small messes
Proper use of beef, veal, lamb, and pork

TM 10-405, pp. 21, 24
NLS and MB Charts
MRM
QAAM

Frozen Meats (1 hour)

How to use frozen meats
Time required for thawing
How to avoid spoilage
Cutting frozen meats for storage in small messes
Difference between chilled and frozen meats
Frozen meats in the field
Thawing frozen boneless beef
Cooking frozen meats

TM 10-407, App. 1, p. 67
TM 10-405, p. 31
NLS and MB Charts
MRM
QAAM

Meat Specialties (1 hour)

Methods of cooking sweetbreads
Importance in the mess
Methods of cooking liver, hearts, tongue,
kidneys, and oxtails

TM 10-405, p. 30
NLS and MB Charts
MRM
QAAM

Smoked, Cured, and Prepared Meats (1 hour)

Curing and smoking meat
Kinds of smoked meat
Quality of smoked meats
Boning and cutting smoked hams and picnics
Slicing ham
Types of sausage, bacon, bologna, frankfurters,
dried beef, corned beef, and salt pork
Luncheon meat
Canned meats

TM 10-405, pp. 26, 27, and 32
NLS and MB Charts
MRM
QAAM

Dehydrated Foods (4 hours)

Advantages of Dehydrated Foods:
Nutritive value
Keeping qualities
Convenience in storing
Saving of critical material and labor
Elimination of food waste
Storage space saved

TM 10-405, pp. 21-25
FS 10-119

Dehydrated Meats and Reconstitution:

Types of dehydrated meats
Reconstitution efficiency
Precooked meats
Vacuum-dried meats
Study of dehydrated meat formulas
Methods and rations

TM 10-406, pp. 21-25
FS 10-120

Dehydrated Vegetables and Reconstitution:

Kinds of dehydrated vegetables
Methods of reconstitution
Proper proportions
Testing for tenderness
Uses for surplus water
Soaking
Study of formulas

TM 10-406, pp. 3-5 and 16
QM Special SB, "The Dehydration of
Vegetables"
QMSB No. 2

Miscellaneous Dehydrated Products and Reconstitution:

Dehydrated milk, fruits, cheese, eggs, butter,
and Carter spread
Methods of reconstitution
Study of formulas and preparation

TM 10-406, ch. 4, pars. 17-21
FS 10-121

Practical Exercise (4 hours)

Reconstitute and prepare any available
dehydrated products

Outline for Mess Management Course with Text References*

Academic Orientation (1 hour)

Introduction to course
Objective of course
Organization of classes

Current policies of post and school
TM 10-205

Organization Funds, Types A and B Officer's Messes (1 hour)

Types of funds
Mess funds
Method of operation of type A officer's mess
Method of operation of type B officer's mess

AR 210-50
AR 210-50
TM 10-205
ETO Cir. 81
ETO Cir. 81
TM 10-205

Field Sanitation (1½ hours)

Importance of field sanitation
Choice of bivouac site
Disposal of kitchen waste
Storage of foods
Sterilization of mess equipment
Fly and rodent control

FM 5-20
TM 10-405, pp. 76-82
TF 8-999
TF 8-1174
FS 8-60
FS 8-12

Rations (2 hours)

Rations defined
Procurement of rations
Daily telegram
Strength report
Types of rations and distribution

AR 30-2210
WD Cir. 158
WD Cir. 290
FM 10-5
TM 10-215
TM 10-205, pp. 10-16

Nutrition (1 hour)

Definition of nutrition
Balanced diet
Food functions
Balanced menu
Classes of foods

TM 10-405
TM 10-205, p. 25
NLS and MB Charts
FS 8-52
FS 8-53
QMSB No. 8

Personal Hygiene (1/2 hour)

Cleanliness of personnel
Food handler's certificate
Communicable diseases

AR 40-205, p. 14
TM 10-405, p. 70
TM 10-205, pp. 74-75
TF 8-55

Principles and Practices of Cooking (1 hour)

Methods of cooking
Heat, and its use in cooking
Meat cookery
Vegetable cookery
Soups, gravies, and salads

TM 10-405, pp. 1-4, 51-55
TM 10-405, pp. 83-85
TM 10-405, pp. 88-92
TM 10-405, pp. 92-95
TM 10-405, pp. 95-97

Kitchen Management (1 hour)

Cooking by definite plan
Assembling of utensils and ingredients
Care of ranges and utensils
Mess accounts
Service of meals

TM 10-405, pp. 71-75
TM 10-205, p. 86
FS 8-52
FS 10-118

Cooking Terms (1/2 hour)

Cooking terms defined

TM 10-405, pp. 80-83

M/37 Field Range (2 1/2 hours)

Operation and use of M/37 Fire Unit

M/37 Manual
TM 10-405, pp. 126-137

Menu Planning (1 hour)

Balanced menu
Substitutions
Combinations
Components

TM 10-405, sec. 2
TM 10-205, pp. 26-33

Ration Breakdown (1 hour)

OCQM Form No. 4
Checking rations against issues

Notes
Notes

Inspection and Storage of Rations (1/2 hour)

Inspection of rations upon arrival
Proper storage and care of rations

TM 10-250
TM 10-250

Dehydrated Foods (1 hour)

Nutritive value	TM 10-406
Keeping qualities	TM 10-406
Elimination of waste	TM 10-406
Types of dehydrated foods	TM 10-406
Reconstitution	TM 10-406
Serving	TM 10-406

Recipes (1 hour)

Use of recipes	TM 10-405, pp. 146-236
Preparing recipes	TM 10-405, pp. 146-236
New and improved recipes	TM 10-412
	School Recipes

Meats (1½ hours)

Frozen meats	TM 10-405, pp. 62-64
Meat cutting	TF 10-1138
	TF 10-408
	TF 10-1134
	TF 10-1135
	TF 10-1136
	TF 10-1137

American Field Equipment (1 hour)

Field ranges	TM 10-400
Field ovens	TM 10-400
Field cooking equipment	TM 10-400

Mess Inspection (2½ hours)

Purpose of inspection	TM 10-205, pp. 2-7
Inspection of personnel	TM 10-405, pp. 106-107
Inspection of food storage	TM 10-250
Check on food preparation	TM 10-405, pp. 107-108
Check on cooking	TM 10-405, pp. 80-103
Check on serving	TM 10-405, pp. 111-114
Check on equipment	TM 10-405, pp. 108-111
Check on conservation	

Baking (1 hour)

Pastries and values to mess	TM 10-405, p. 64
Sweet doughs and products	ch. 2, sec. 2
Biscuits and icing	TM 10-410, sec. 2, pp. 4-12
Leavening agents	TM 10-411

Duties of Mess Personnel (1 hour)

Duties of mess officer	TM 10-405, pp. 70-75
Duties of mess sergeant	TM 10-205, pp. 7-9
Duties of first cook	
Duties of second cook	
Mess discipline	
Duties of kitchen police	

Beverages (1 hour)

Use and methods of preparation of coffee,
tea, cocoa, chocolate, and cold drinks

TM 10-405, pp. 39-65
Recipes 312-315

Conservation (1 hour)

Use of leftovers
Proper storage and checking of rations
Checking garbage
Avoiding unnecessary waste
Proper management prevents waste

TM 10-405
TM 10-205, pp. 101-120
NLS and MB Charts
FS 10-1291
FS 10-122

Depot Operations (1½ hours)

Subsistence School

Subsistence (1 hour)

Subsistence School

Types of Menus (1 hour)

Master menu ETO
Sandwich menu
Prisoner of war menu
Displaced persons menu

*Circular Hq 6821, Catering School, QM School Center, 10 October 1945.

GLOSSARY

- ADSEC. Advance Section, Communications Zone.
- AG. Adjutant General.
- AGRC. American Graves Registration Command.
- AGWAR. Adjutant General, War Department, (cablegram address for Washington).
- ALADDIN. Late code word for the occupation of Norway in the event of German withdrawal.
- Allied Force. Headquarters, North African Theater of Operations.
- Ameri-cans. 5-gallon gasoline cans of American design.
- AMG. American Military Government.
- APOSTLE. Late code word for the occupation of Norway.
- ASF. Army Service Forces (designation of supply services, War Department, after 12 March 1943).
- BOLERO. The build-up of men and supplies** in the United Kingdom in preparation for the Continental invasion.
- BUCO. Build-up Control (an organization controlling flow of men and supplies across the English Channel).
- Center Task Force. One of the task forces engaged in the North African operation.
- Chief of Operations. Temporary title of G-4.
- Chief of Services. Temporary title of G-4.
- Classes of Supply. Class I —Food and rations.
 Class II —Clothing, individual equipment, and expendable supplies.
 Class III —Petrol, oil, and lubricants.
 Class IV —Organizational equipment, general supplies, officers' and nurses' clothing, and sales store and post exchange supplies.
 Class V —Ammunition.
- Communications Zone (Com Z). Later designation of Services of Supply, European Theater.
- CONAD. Continental Advance Section (Advance Section, Communications Zone, supporting the invasion of Southern France).
- COSSAC. Chiefs of Staff, Supreme Allied Command.
- D-day. The day the invasion of the Continent took place—6 June 1944.
- DCQM. Deputy Chief Quartermaster.
- DQMG. Deputy The Quartermaster General.
- DRAGOON. The invasion of Southern France.
- DUKWS. Amphibious trucks.
- ECLIPSE. The primary disarmament and control of Germany.
- ETOUSA. European Theater of Operations, United States Army.
- FECZ. Forward Echelon, Communications Zone.
- FUSAG. First United States Army Group (early command organization for United States forces under Supreme Headquarters, Allied Expeditionary Force).

G-1, G-2, G-3, G-4, G-5. General Staff Sections of major United States commands.

G-1 - Administration

G-2 - Intelligence

G-3 - Troops and Training

G-4 - Supply

G-5 - Civil Affairs

GOOSEBERRIES. Artificial ports off the beaches.

GRENADE. Operation for crossing the Roer River.

Jerri-cans. 5-gallon cans patterned after German cans.

JOMP. Joint Outline Maintenance Projects (for administration and maintenance of all forces on the Continent).

Joint Q Planning School. Joint Supply Planning School.

LIGAMENT. One of the task forces organized to carry out occupation of Norway before German surrender.

Long ton. 2,240 pounds.

LUMBERJACK. Tactical plan for advance to the Rhine River at Cologne.

Marshaling Areas. The areas along the English Channel coast from which the operation on the Continent was mounted.

MTO. Mediterranean Theater of Operations (later designation of NATOUSA).

MULBERRIES. Artificial harbors.

NAAFI. Navy, Army, Air Force Institute (British organization corresponding to the United States Army Exchange Service).

NATOUSA. North African Theater of Operations, United States Army.

NEPTUNE. The assault stage of the Continental operation.

NIGHTLIGHT. Task force organized to carry out occupation of Norway in the event of German surrender.

NYPE. New York Port of Embarkation.

OCQM. Office of the Chief Quartermaster.

OCCWO. Office of the Chief Chemical Warfare Officer.

OCE. Office of the Chief Engineer.

OCO. Office of the Chief Ordnance Officer.

OCS. Office of the Chief Surgeon.

OCSO. Office of the Chief Signal Officer.

OCOT. Office of the Chief of Transportation.

OMAHA. The invasion beach at Saint Laurent-sur-Mer between Le Havre and the Cotentin Peninsula.

OMGUS. Office of the Military Government, United States.

OQMG. Office of The Quartermaster General.

OTCQM. Office of the Theater Chief Quartermaster (later designation of OCQM).

OVERLORD. The Continental operation.

PEMBARK. Port of Embarkation.

PLUTO. The submarine gasoline pipe line across the English Channel.

POL. Petrol, oil, and lubricants.

POW. Prisoners of war.

PROCO Project. Priority Continental operation project (method of requisitioning and shipping essential operational supplies).

QMG. The Quartermaster General.

RANKIN CASE B. Plan for occupation of Scandinavian countries in the event of German withdrawal.

RANKIN CASE B (Norway). Plan for occupation of Norway in the event of German withdrawal.

RANKIN CASE C. Plan for occupation of Scandinavian countries 1943—1944 upon unconditional surrender of Germany.

RANKIN CASE C (Norway). Plan for occupation of Norway 1943 upon unconditional surrender of Germany.

RASC. Royal Army Service Corps.

RED BALL. Rapid system of moving supplies from the United Kingdom to the Continent and on the Continent.

RHUMBA. Plan for closing installations, accommodations, and facilities in the United Kingdom after the Continental invasion.

ROUNDUP. Proposed British-American invasion of the Continent in 1943.

SCAEF. Supreme Commander, Allied Expeditionary Force.

Service d'Aide aux Forces Alliees. French lend-lease agency.

SHAEF. Supreme Headquarters, Allied Expeditionary Force.

Ship ton. Ship space required to store 2,000 pounds of material—also called measurement ton.

Sixth Army Group. United States and French forces that invaded Southern France.

SLEDGEHAMMER. Diversionary invasion of the Continent proposed in 1942.

SOLOC. Southern Line of Communications—the communications zone supporting the invasion of Southern France.

SOP. Standing Operating Procedure.

SQS. Services of Supply.

SPOBS. Special Army Observers Group.

Task Force Z. One of the task forces organized to carry out occupation of Norway before German surrender.

TOMBOLAS. Ship-to-shore pipe lines for gasoline.

TORCH. Assault on North Africa in 1942.

TSFET. Theater Service Forces, European Theater, (later designation of Communications Zone).

TURCO. Turn-around Control (agency controlling turn-around of ships in English Channel).

Twelfth Army Group. Command organization of United States tactical forces under SHAEF.

Twenty-First Army Group. Command organization for British forces under SHAEF.

TWX. Trans-Atlantic Wire Exchange.

USFA. United States Forces in Austria.

USAFBI. United States Army Forces in the British Isles.

USANIF. United States Army, Northern Ireland Forces.

USFET. United States Forces, European Theater, (later designation of ETOUSA).

USFOR. United States Forces (cablegram address for the European Theater).

USSOS. United States Services of Supply (cablegram address for SOS, ETOUSA).

USSTAF. United States Strategic Air Force (headquarters of United States Air Force in Europe).

UTAH. The invasion beach on the eastern coast of the Cotentin Peninsula north of Isigny.

VE-day. The date that the German surrender was signed—8 May 1945.

VERITABLE. Operation calling for an advance to the Rhine River.

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