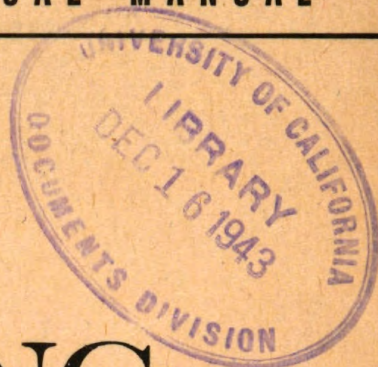


4 Ed
new
TM 10-406
Nov. 22, 1943
Change #1

TM 10-406

WAR DEPARTMENT TECHNICAL MANUAL



COOKING DEHYDRATED FOODS

WAR DEPARTMENT • 22 NOVEMBER 1943

TECHNICAL MANUAL COOKING DEHYDRATED FOODS



CHANGES }
No. 1 }

WAR DEPARTMENT,
WASHINGTON 25, D. C., 14 December 1944.

TM 10-406, 22 November 1943, is changed as follows:

12. WHITE POTATOES.

* * * * *

g. Mashed potatoes. The ever-popular * * * forms of potatoes.

(1) Mashed Potatoes Prepared From Precooked, Shredded Potatoes (Superseded). (a) Formula

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Boiling Water.....	14	0	7 dippers.....	$\frac{3}{4}$ canteen cup.
Dehydrated potato shreds, precooked.	4	8	7 dippers.....	$\frac{3}{4}$ canteen cup.
Salt.....	0	3	6 mess kit spoons..	$\frac{1}{2}$ mess kit spoon.
Butter.....	1	0	$\frac{1}{2}$ dipper.....	$2\frac{1}{2}$ mess kit spoons.
Hot Milk:				
Evaporated Milk.....	3	0	{ 3 $1\frac{1}{2}$ ounce cans*..	$\frac{1}{6}$ canteen cup.
Water.....	3	0		$\frac{1}{6}$ canteen cup.
or				
Dehydrated whole milk.	(0) (12)		($\frac{3}{4}$ dipper).....	(4 mess kit spoons).
Water.....	(5) (0)		($2\frac{1}{2}$ dippers).....	($\frac{1}{3}$ canteen cup).

*Or $1\frac{1}{2}$ No. 56 dippers.

All measurements level unless otherwise indicated.



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TECHNICAL MANUAL

(b) Directions.

1. Measure the volume of dehydrated precooked shredded potatoes carefully in order to obtain as close to 4 pounds 8 ounces as possible.
2. Pour the boiling water over the shreds. Push all the shreds under the water. Cover and let stand for ten minutes over very low heat. Do not open or stir during this ten minute period.
3. Add salt and whip until smooth.
4. Add butter, whip, and add the hot reconstituted milk slowly until the desired consistency is obtained. Rather thick mashed potatoes have the best flavor.

Note. In order to prevent the preparation of a product of watery consistency, special care must be taken to avoid the use of excessive quantities of boiling water and hot milk.

* * * * *

[AG 300.7 (7 Nov 44)]

BY ORDER OF THE SECRETARY OF WAR:

OFFICIAL:

J. A. ULIO
Major General
The Adjutant General

G. C. MARSHALL
Chief of Staff

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For explanation of symbols, see FM 21-6.

COOKING DEHYDRATED FOODS

*This manual supersedes Tentative
TM 10-406, Cooking Dehydrated Foods*



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BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,
Chief of Staff.

OFFICIAL:

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Major General,
The Adjutant General.

DISTRIBUTION:

X and R and L (3).
(For explanation of symbols see FM 21-6.)

II

PURPOSE

The purpose of this manual is to furnish a clear and complete source of information to mess officers, cooks, and others engaged in subsistence activities, on the best method of cooking dehydrated foods.

By the introduction of dehydrated foods, many thousands of tons of shipping space have been saved or diverted to the transportation of troops, munitions, or other supplies. This type of subsistence will constitute an even larger proportion of food served to our fighting men as the war continues. It is therefore essential that all personnel concerned with the preparation of food in Army messes be familiar with the techniques of cooking these foods in the most nutritious, tasty, economical, and efficient manner.

TABLE OF CONTENTS

	Paragraphs	Page
CHAPTER 1. General.....	1-2	1
CHAPTER 2. Reconstitution of dehydrated foods.....	3-5	5
CHAPTER 3. Vegetables.....	6-16	10
CHAPTER 4. Eggs and meat dishes.....	17-25	29
CHAPTER 5. Desserts.....	26-29	44
APPENDIX I. Table of weights and measures.....		67
II. Milk substitution table.....		68
III. Reconstitution ratios of several dehydrated foods.....		68
INDEX.....		69

CHAPTER 1

GENERAL

	Paragraph
Definition	1
Nutritive value and advantages of dehydrated foods	2

1. DEFINITION. Dehydrated foods are fresh foods from which water and inedible portions such as peels, cores, seeds, stems, and bones have been removed. Such foods are first carefully cleaned and then dried by scientifically controlled processes designed to retain much of the original food value, flavor, and natural texture. Through the process of dehydration, weight and bulkiness are reduced. For example, over 80 percent of the weight of potatoes is removed through cleaning, peeling, and dehydrating.

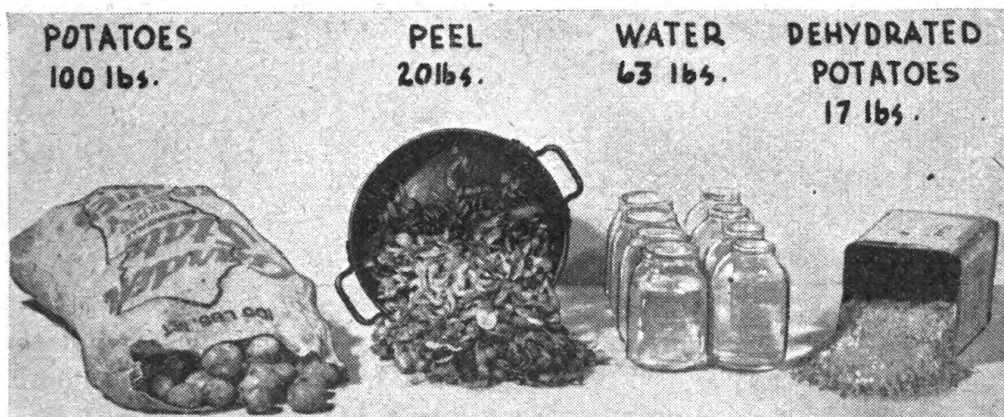


FIGURE 1. Space conservation and weight reduction effected by the dehydration of potatoes.



FIGURE 2. Space conservation and weight reduction effected by the dehydration of cabbage.

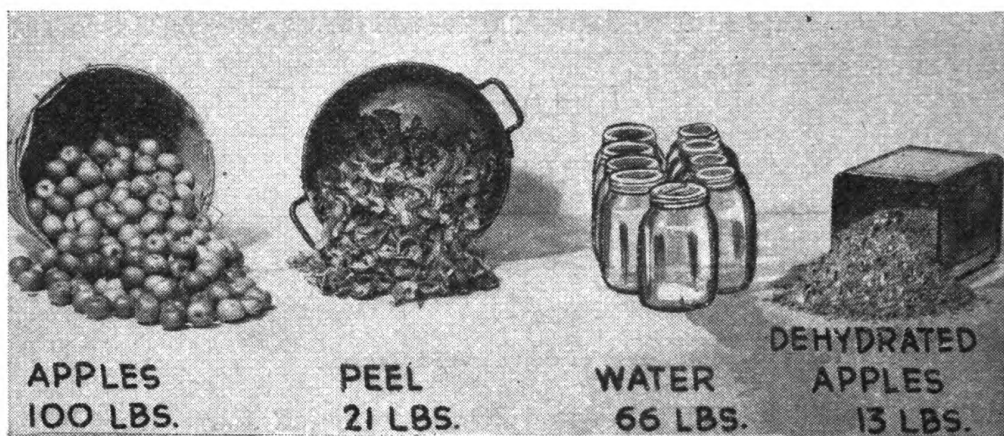


FIGURE 3. *Space conservation and weight reduction effected by the dehydration of apples.*

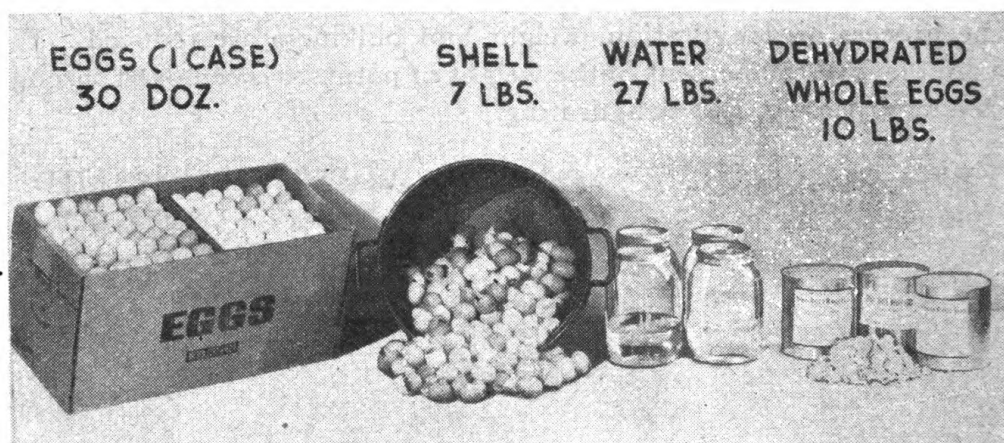


FIGURE 4. *Space conservation and weight reduction effected by the dehydration of eggs.*

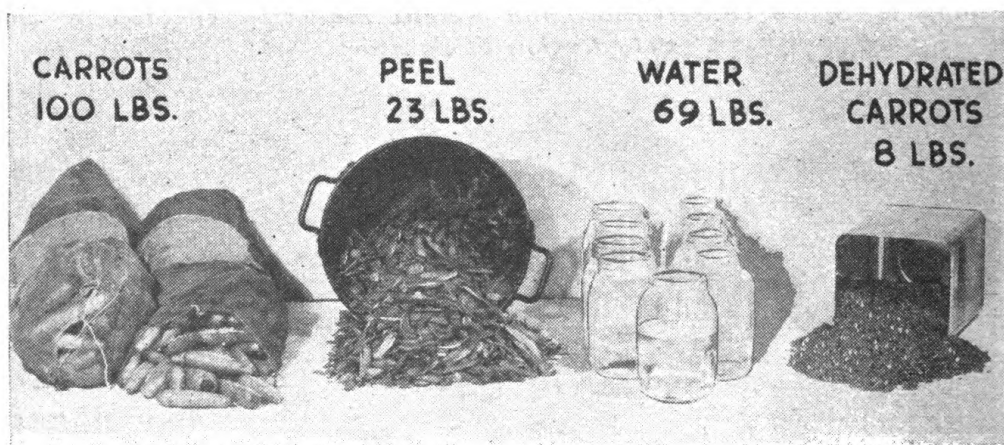


FIGURE 5. *Space conservation and weight reduction effected by the dehydration of carrots.*

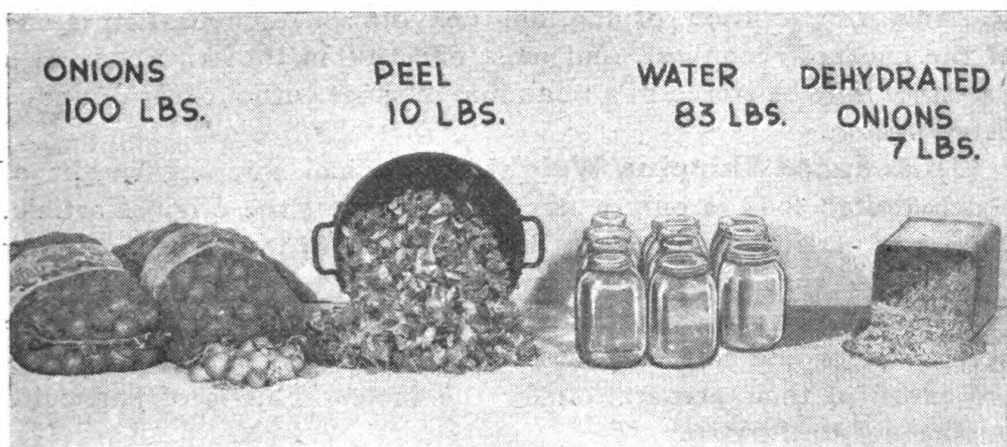


FIGURE 6. Space conservation and weight reduction effected by the dehydration of onions.

2. NUTRITIVE VALUE AND ADVANTAGES OF DEHYDRATED FOODS.

a. Nutritive Value. Dehydrated foods retain most of their nutritive value with the exception of the variable vitamins, particularly vitamin C, provitamin A, and some of the members of the vitamin B complex. While considerable quantities of these vitamins are retained in some processes of dehydration, the losses in storage, preparation, and cooking are such that under the conditions existent in the Army the dehydrated vegetables and fruits are not to be depended upon as sources of vitamin C and, to a lesser extent, provitamin A and vitamin B. It is because of the loss of vitamin C in vegetables that synthetic lemon powder fortified with vitamin C is provided in expeditionary rations. It is important that where this lemon powder is part of the ration, it be served to the troops each day.

b. Advantages. (1) Keeping Qualities. If held in an airtight, insectproof container, dehydrated foods will keep at moderate temperatures for indefinite periods of time. Dehydrated foods remain in a state of preservation primarily because of their low moisture content. The micro-organisms responsible for spoilage (yeast, molds, and bacteria commonly present in foods) are unable to carry on their usual activities when the water content is sufficiently low. Since not all these organisms are killed by drying, however, they remain dormant in the dehydrated food, only to renew their activities at a later date when water is restored to it. *After the addition of water, therefore, it is important that dehydrated foods be handled rapidly. Prolonged soaking should be avoided, since souring or spoilage may result.*

(2) Convenience in Storing. If a supply of fresh fruits and vegetables is to be available throughout the year, these foods must be preserved and stored. Of the common methods of preservation

(canning, refrigeration, drying, and dehydration) dehydration is one of the cheapest, simplest, and most effective methods. Foods in a dry state may be stored in a minimum of space without fear of undue deterioration.

(3) Reduced Shipping Weight. The final shipping weight of a dehydrated food is only a fraction of that of the original article. This is of particular advantage during periods of war, when shipping tonnage and space must be conserved.

(4) Labor-Saving Qualities. Because dehydrated foods have been trimmed and cleaned before drying, considerable time and labor are saved in their preparation for the table. This is of particular importance to the Army.

(5) Elimination of Food Loss Variation. Everyone who has prepared fresh foods for cooking knows that peeling, trimming, and spoilage losses are exceedingly variable. Size irregularities alone make tremendous differences in the yield of the final product. Small apples, potatoes, and eggs are good examples of foods the trimming, peeling, and spoilage losses of which are often abnormally high and relatively unpredictable. Dehydrated foods do not cause such troublesome discrepancies because the manufacturer has absorbed the peeling, trimming, and spoilage losses. Such losses, however, make it difficult to prepare an accurate replacement table which will assist the mess officer in computing equivalent quantities when changing from fresh to dehydrated foods and vice versa.

CHAPTER 2

RECONSTITUTION OF DEHYDRATED FOODS

	Paragraph
Definition.....	3
Factors which determine reconstitution efficiency.....	4
General method for reconstitution of vegetables.....	5

3. DEFINITION. Reconstitution is the process by which dehydrated foods are restored approximately to their original state or concentration of moisture in the fresh food. It is not possible to reproduce to exactness the original moisture concentration of the fresh food. For example, fresh raw cabbage contains 89 percent water before dehydration, but after it has been reconstituted it may contain only 86 to 87 percent water. Attempts to attain a higher water absorption may prove successful in certain specific cases and unsuccessful in others, dependent upon the characteristics of the original product and upon the peculiarities of both the dehydration and reconstitution procedures. *The quantity of moisture which dehydrated foods will absorb, therefore, is variable.* No tabulation can be prepared covering reconstitution in which there will not be discrepancies. The methods and yields suggested in this book have been checked against average Army cooking conditions.

4. FACTORS WHICH DETERMINE RECONSTITUTION EFFICIENCY.

a. Condition of Vegetable Before It Was Dried. The condition of the vegetable before it was dried has much to do with its subsequent reconstitution. The variety of the plant, the degree of its maturity when it was harvested, and the climatic conditions during its growth are all factors which contribute to the variability of reconstitution results.

b. Methods Used for Blanching. Methods used for blanching might affect reconstitution efficiency.

c. Methods and Temperatures of Dehydration. The methods and temperatures of dehydration are very important and must be carefully controlled if the best results are to be obtained when the final products are reconstituted. If certain foods are dried too rapidly, an almost impervious shell or skin forms around their outer surface and they are said to be "case hardened." Such products do not reconstitute easily. Dehydration methods which retain a certain degree of porosity in the dried food product usually contribute to easier reconstitution.

d. Method of Reconstitution. The method of reconstitution is perhaps one of the most important factors to be considered when using dried foods. Attempts to force reconstitution through the use of boiling water generally result in inferior finished products. All methods should be designed to secure the maximum soakage of moisture within a necessarily limited length of time. A short preliminary soaking in either cool water or lukewarm water is preferred whenever possible. After the soaking period, the products should then be brought slowly to a boil. If the time factor is controlled so that 30 to 45 minutes will elapse before the boiling point is reached, maximum water absorption will be effected. Vigorous boiling is not recommended at any time. The finished reconstituted product should be tested for tenderness by cutting it with a fork. When the product becomes tender and moist, a satisfactory reconstitution has been obtained. If the product is firm and rubbery, additional simmering is required. The products should neither be served nor further processed by frying or baking until they have first become tender and plump in the reconstitution simmering process.

e. Amount of Water Used for Reconstitution. Large quantities of surplus water should not be used when reconstituting dried foods. Valuable nutrients such as water-soluble mineral salts, vitamins, and the like may be lost if surplus water is used and discarded. It is impossible to use the exact quantity of water since a slight surplus is necessary to eliminate the danger of scorching during the reconstitution process. This small surplus of water should be concentrated during the boiling or cooking so that it can be served as a natural juice, such as would accompany cooked fresh vegetables under normal circumstances. Should too much water be used for concentration during a cooking procedure, the surplus should be drained from the vegetables and then used for soup stock or as the water ingredient for other cooked foods. Do not discard vegetable juices if they can be used. *Do not hold these juices overnight, however, since souring may result.*

5. GENERAL METHOD FOR RECONSTITUTION OF VEGETABLES.

a. Measuring Water. Measure or weigh the water to be used. Careful measurement is necessary; insufficient water will result in an unsatisfactory finished product, but if too much water is used food value will be wasted when it is necessary to pour off the surplus liquid. All measurements should be level.

b. Using Proper Proportion of Vegetable. Measure the vegetable into the previously measured water. All measurements should be level. The water should be either cool or lukewarm; hot water should never be used unless the recipe calls for it.

c. Soaking. In most cases a short soaking period will prove helpful. Twenty to thirty minutes soaking time at room temperature should be sufficient. Never stop the reconstitution process before the product has become tender. *Never soak vegetables overnight.* Long soaking may result in off-flavors and in some cases, complete spoilage.

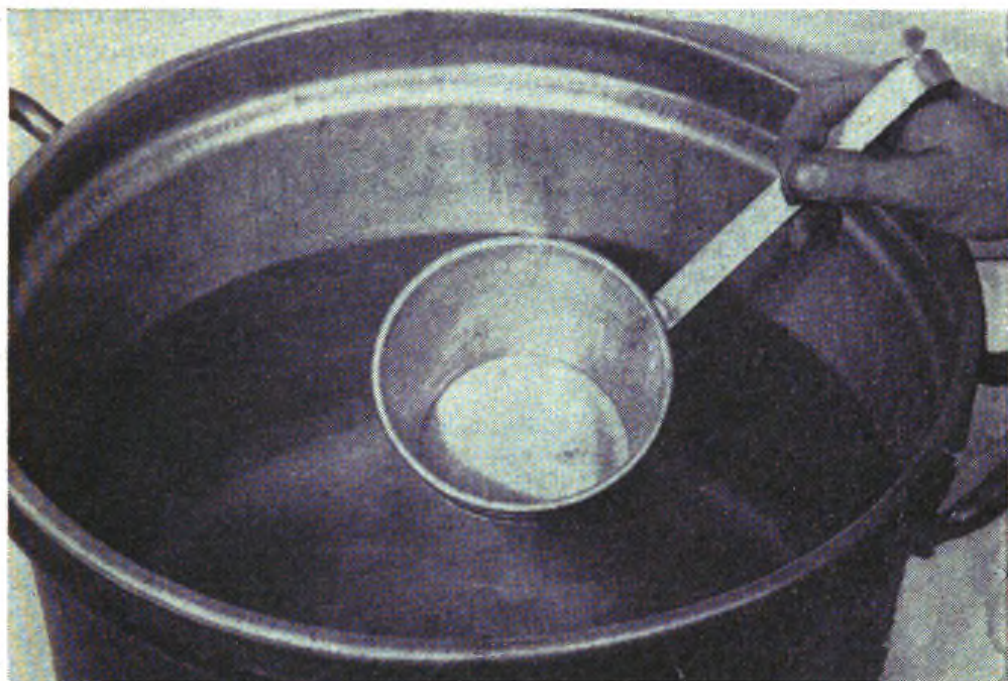


FIGURE 7. *Measurement of water for reconstitution of dehydrated foods.*



FIGURE 8. *Use of proper proportion of dehydrated vegetable.*

d. Simmering. Place the vegetable on top of the stove. Cover with a tight lid and allow to come to the boiling point. (Strong-flavored vegetables such as cabbage or turnips (rutabagas) should be cooked without a cover, however.) When cooking a 100-portion recipe, about 45 to 50 minutes are required to reach the boiling point. Smaller portions require less time.

e. Use of Army Field Range. The simmering may be handled equally well *inside* the Army field gasoline range on convoy. A medium temperature (325° to 400° F.) is suggested.

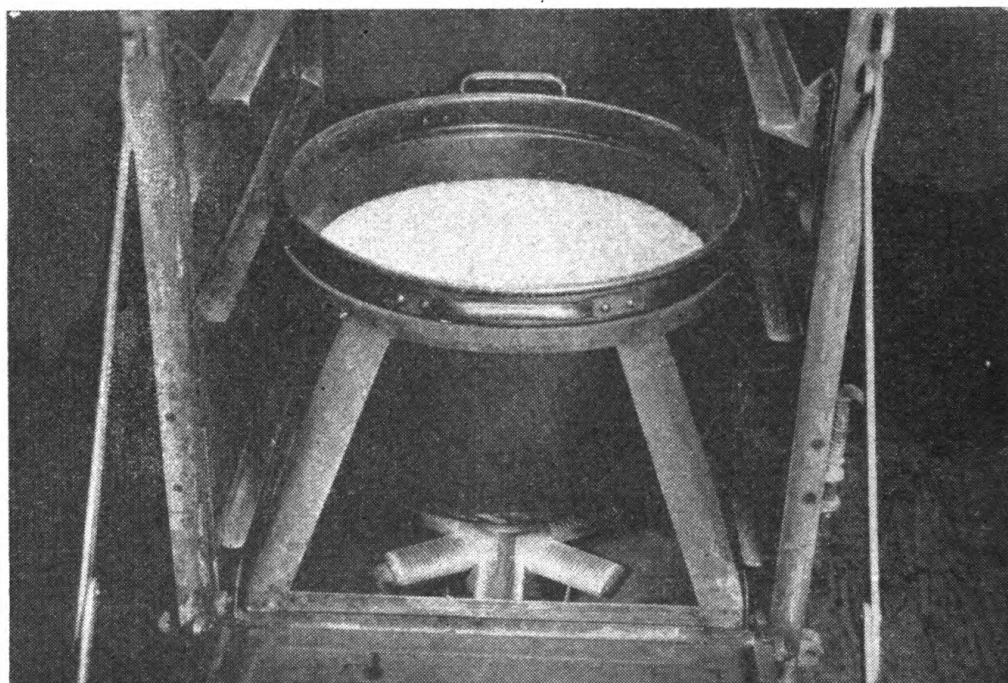


FIGURE 9. *Simmering dehydrated food in the Army field gasoline range.*

f. Testing for Tenderness. After the vegetables have reached the boiling point, they should be slowly simmered until they become soft and tender. Leafy or flaked vegetables, such as cabbage and onions, should become tender within 10 minutes after reaching the boiling point (1 hour total time). Carrots, turnips, and cubed or julienne potatoes may require 15 to 30 minutes after boiling begins. Test the food with a fork to ascertain its tenderness. If it is tough or rubbery, more cooking is required. The food must be completely reconstituted before it is used as an ingredient of other dishes. Example: Potatoes in potato salad or corned beef hash.

g. Uses of Surplus Water. A small quantity of surplus water is necessary if proper reconstitution is to be accomplished. *Hold it to a minimum.* It should be borne in mind that valuable food elements (minerals and vitamins) are lost whenever surplus liquid is discarded. All surplus liquid should be poured over the vegetable

- or used as a stock in the preparation of soups, meat loaves, croquettes, etc. Surplus liquid may be used as water in the reconstitution of other batches of vegetables. *Because of danger of spoilage, liquids should never be kept overnight.*

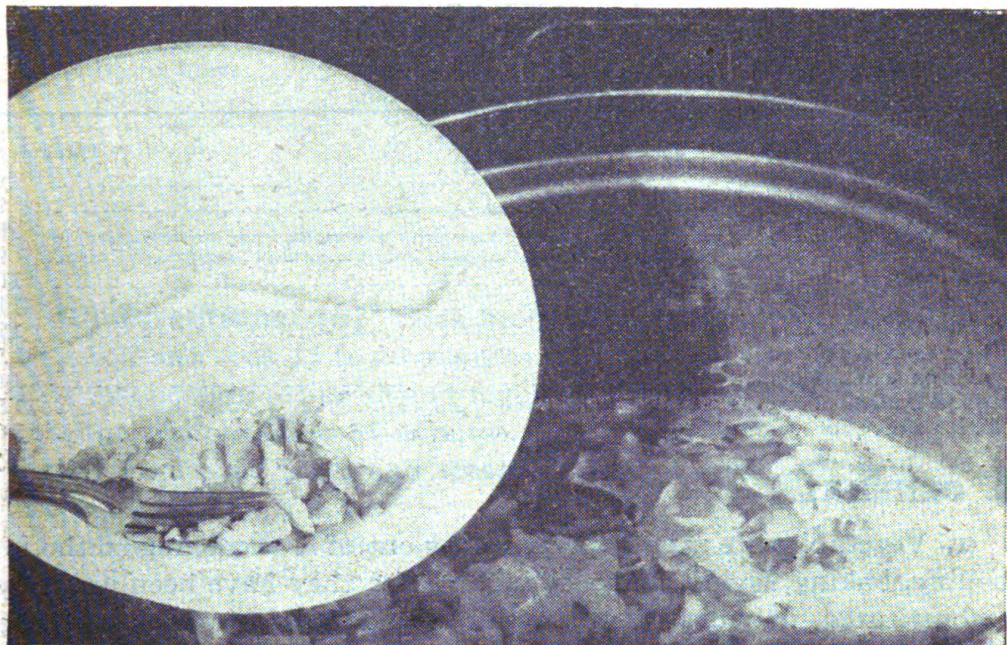


FIGURE 10. *Testing reconstituted foods for tenderness.*

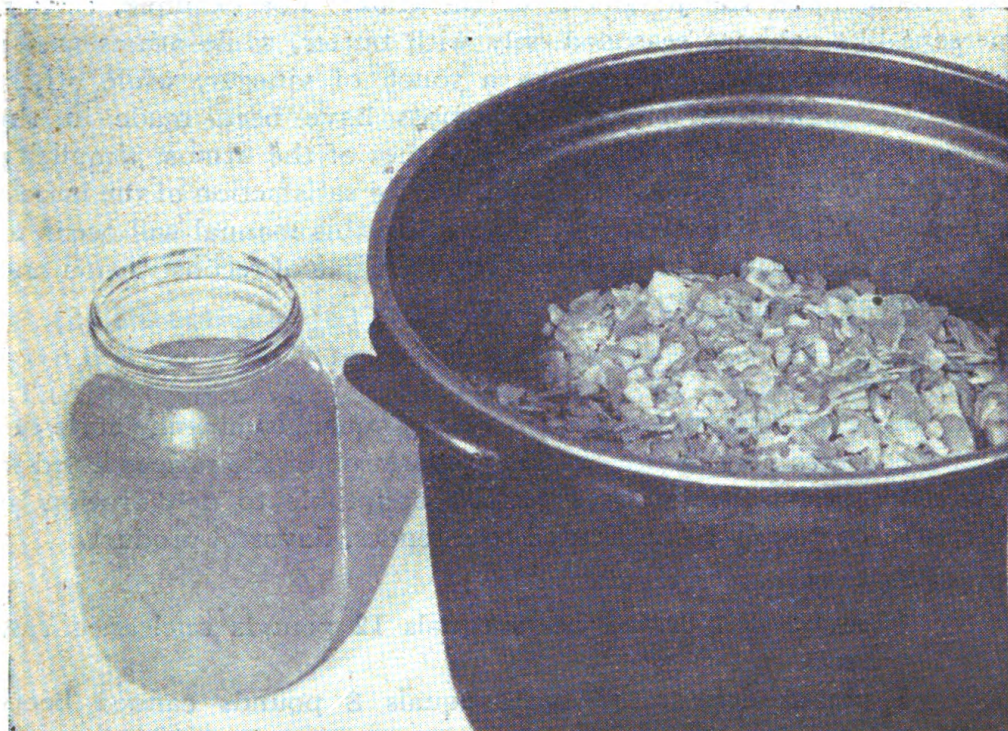


FIGURE 11. *Surplus water after reconstitution.*

CHAPTER 3

VEGETABLES

	Paragraph
General	6
Beets	7
Cabbage	8
Carrots	9
Hominy	10
Onions	11
White potatoes	12
Sweetpotatoes	13
Turnips (rutabagas)	14
Baked beans	15
White sauce for vegetables	16

6. GENERAL.

a. Vegetables are usually prepared by one of four cooking methods: boiling, baking, frying, and pickling. After they have been properly reconstituted, dehydrated vegetables are adaptable to each of these cooking methods.

b. There are numerous variations of seasoning which can be used, depending upon the judgment of the cook. For example, certain persons like cabbage seasoned only with butter, while others prefer it boiled with bacon; some like a touch of vinegar, while others prefer it slightly sweetened. Attempts have been made in the preparation of this manual to select dishes of the utmost simplicity and yet to retain a suitable selection for the satisfaction of the largest number. Many variations not included in this manual will occur to the more ingenious cook; however, the principle of reconstitution and preliminary cooking will remain constant.

7. BEETS.

a. General Instruction. (1) Sliced, cubed, or julienne style dehydrated beets may be used in the preparation of the recipes listed in this paragraph. Beets are especially adaptable to dehydration as they can be readily reconstituted to a tender, flavorful product.

(2) Approximate equivalents:

1 pound dehydrated beets equals 12 pounds uncleaned raw beets.

1 pound dehydrated beets equals 8 pounds canned beets (complete with juice).

b. Buttered Beets. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated beets.....	3	8	4 dippers.....	1/2 canteen cup.
Cool water.....	24	0	12 dippers.....	1 dipper.
Salt.....	0	1 1/2	3 mess kit spoons..	Pinch.
Pepper.....	0	1/2	2 mess kit spoons..	Pinch.
Butter.....	1	0	1/2 dipper.....	2 1/2 mess kit spoons.

All measurements level unless otherwise stated.

Yield: 100 servings, 4-ounce portions, or approximately 25 pounds.

(2) Directions. (a) Soak beets 20 to 40 minutes. Bring slowly to a boil and cook 15 to 20 minutes after they reach the boiling point. The 100-portion recipe should require 50 to 60 minutes total time, the smaller portions 25 to 35 minutes.

(b) Drain the beets and season while hot with salt, pepper, and melted butter.

c. Sweet-Sour Beets. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated beets.....	3	8	4 dippers.....	1/2 canteen cup.
Cool water.....	24	0	12 dippers.....	1 dipper.
Vinegar.....	1	4	2/3 dipper.....	4 mess kit spoons.
Sugar.....	0	8	1/4 dipper.....	2 mess kit spoons.
Salt.....	0	1 1/2	3 mess kit spoons..	Pinch.
Pepper.....	0	1/2	2 mess kit spoons..	Pinch.

All measurements level unless otherwise stated.

Yield: 100 servings, 4-ounce portions, or approximately 25 pounds.

(2) Directions. (a) Soak beets 20 to 40 minutes. Bring slowly to a boil and cook 15 to 20 minutes after they reach the boiling point. The 100-portion recipe should require 50 to 60 minutes total time, the smaller portion 25 to 35 minutes.

(b) Drain the cooked beets and then bring the vinegar, sugar, salt, and pepper to a boil. Add to the beets and stir well.

d. Pickled Beets. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated beets.....	3	8	4 dippers.....	1/2 canteen cup.
Cool water.....	24	0	12 dippers.....	1 dipper.
Dehydrated onions.....	0	5	1/2 dipper.....	2 mess kit spoons.
Water.....	2	0	1 dipper.....	5 mess kit spoons.
Vinegar.....	3	0	1 1/2 dippers.....	8 mess kit spoons.
Sugar.....	0	8	1/4 dipper.....	2 mess kit spoons.
Salt.....	0	1 1/2	3 mess kit spoons.....	Pinch.
Pepper.....	0	3/4	3 mess kit spoons.....	Pinch.

All measurements level unless otherwise stated.

Yield: 100 servings, 4-ounce portions, or approximately 28 pounds.

(2) Directions. (a) Soak beets and onions separately 20 to 40 minutes.

(b) Bring beets to a boil and cook 15 to 20 minutes after they reach the boiling point. The 100-portion recipe should require 50 to 60 minutes total time, the smaller portion 25 to 35 minutes.

(c) Bring vinegar to a boil and pour over the reconstituted onions, sugar, salt, and pepper. Drain the beets and add to the onion-vinegar mixture. Cool for 4 hours. Serve as cold as possible.

8. CABBAGE.

a. General Instructions. (1) Dehydrated cabbage is packed in flaked or shredded form. It is easily reconstituted and cooked. It may be used as a popular ingredient in all types of soups and stews or may be cooked alone. If it is used for cole slaw, the cabbage should be soaked for 3 to 4 hours but not cooked. After soaking or cooking, the cabbage should not be allowed to stand for prolonged periods of time since it will become discolored and will also develop unsatisfactory flavors.

(2) Dehydrated cabbage will readily absorb moisture from the atmosphere. It must be held in an airtight container at all times since the absorption of too much moisture will result in the development of unsatisfactory flavors.

(3) Approximate equivalents:

1 pound dehydrated cabbage = 16 pounds fresh uncleaned cabbage.

1 pound dehydrated cabbage = 8 1/2 pounds cooked cabbage (drained free from surplus water).

b. Boiled Cabbage. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated cabbage----	3	8	14 dippers-----	1½ canteen cups.
Cold water-----	32	0	16 dippers-----	2 canteen cups.
Salt-----	0	4½	9 mess kit spoons -	¾ mess kit spoon.
Bacon, diced-----	3	0	2 dippers-----	8 slices.
Pepper-----	0	½	2 mess kit spoons -	Pinch.

All measurements level unless otherwise stated.

Yield: 100 servings, 5-ounce portions, or approximately 30 to 32 pounds.

(2) Directions. (a) Soak cabbage 10 to 20 minutes in cool water.

(b) Slowly bring it to a boil; this will take approximately 40 minutes. Add salt and simmer for an additional 10 to 15 minutes, for a total cooking time of approximately 55 minutes.

(c) Drain, leaving about half of the liquid on the cabbage.

(d) Fry diced bacon until it is lightly brown.

(e) Add bacon, bacon grease, and pepper to cabbage and serve.

(3) Special Instructions. (a) For a different flavor, the bacon may be diced and boiled in the water later used with the cabbage.

(b) Avoid overcooking cabbage. It will discolor, lose moisture, and develop a poor flavor.

(c) A small pinch of sugar improves the cabbage flavor. Use only two mess kit spoons for 100 portions.

c. Sweet-Sour Cabbage—Directions. Cook as boiled cabbage. After draining, add 1½ pounds (one canteen cup) of vinegar and 6 ounces (one-fourth canteen cup) of sugar.

d. Corned Beef and Cabbage. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated cabbage----	3	8	14 dippers-----	1½ canteen cups.
Cold water-----	32	0	16 dippers-----	1½ canteen cups.
Canned corned beef----	36	0	6 6-pound cans----	2¼ canteen cups.

All measurements level unless otherwise stated.

Yield: 35 pounds of cabbage or 100 servings, 5-ounce portions.

(2) Directions. (a) Handle the cabbage as directed in **b** above.

(b) Break up corned beef and add to the boiling cabbage.

e. Cole Slaw. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated cabbage	2	8	10 dippers	1 canteen cup.
Cold water	24	0	12 dippers	1 canteen cup.
Vinegar	5	0	2½ dippers	¼ canteen cup.
Dehydrated onions	0	10	1 dipper	2½ mess kit spoons.
Water	4	0	2 dippers	⅓ canteen cup.
Salt	0	7½	15 mess kit spoons	1⅓ mess kit spoons.
Pepper	0	½	2 mess kit spoons	Pinch.

All measurements level unless otherwise stated.

Yield: 100 servings, 4-ounce portions, or approximately 27 to 28 pounds.

(2) Directions. (a) Pour cold water over the cabbage and allow it to soak for 3½ to 4 hours. Avoid overheating. For best results, place soaking cabbage in a refrigerator; long soaking at high temperatures may ruin the cabbage flavor. If a refrigerator is available, use it. If ice is available, a small piece may be added to the cabbage and water while soaking. This will have approximately the same effect as refrigeration.

(b) Soak onions in water 20 minutes.

(c) Pour the vinegar over the reconstituted onions, salt, and pepper, and let it stand until the cabbage is ready.

(d) Drain all surplus water from the cabbage, then combine with the onion-vinegar mixture.

(e) *Serve cold.*

(3) Special Instructions. (a) Do not allow to soak overnight. Poor flavor and texture will result.

(b) If no refrigeration is available and the weather is warm, cole slaw should not be made.

9. CARROTS.

a. General Instructions. (1) Dehydrated carrots are packed in two forms, julienne shreds or diced. They are readily reconstituted and cooked. When cooking, care should be taken to avoid using surplus water because the juice of carrots contains valuable vitamins and minerals which may otherwise be thrown out with the surplus water. Carrots are usually served buttered or creamed, although they are very tasty when used as ingredients of stews, soups, and braised meats. When served with roasts or with braised meats, carrots should be reconstituted in a normal manner before they are added to the meat.

(2) Approximate equivalents:

1 pound dehydrated carrots = $12\frac{1}{2}$ pounds fresh unpeeled carrots.

1 pound dehydrated carrots = 6 pounds drained cooked carrots.

1 pound dehydrated carrots = $7\frac{1}{2}$ pounds canned carrots with juice.

1 pound dehydrated carrots, diced = 1 No. 56 dipper.

b. Buttered Carrots. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated carrots diced.	4	0	4 dippers	$\frac{1}{2}$ canteen cup.
Cool water	24	0	12 dippers	1 dipper.
Sugar	0	2	4 mess kit spoons	Pinch.
Butter	1	0	$\frac{1}{2}$ dipper	$2\frac{1}{2}$ mess kit spoons.
Salt	0	3	6 mess kit spoons	$\frac{1}{2}$ mess kit spoon.
Pepper	0	$\frac{1}{4}$	1 mess kit spoon	Pinch.

All measurements level unless otherwise stated.

Yield: 100 servings, 4-ounce portions, or approximately 25 to 26 pounds.

(2) Directions. (a) Soak carrots in cool water for 45 minutes.

(b) Slowly bring to a boil. This requires 45 minutes for the large recipe or 20 minutes for the small one. Simmer for 10 minutes more or until tender.

(c) Remove from the stove; add the sugar, butter, salt, and pepper, and stir until thoroughly mixed.

(d) For creamed carrots see directions for white sauce, paragraph 16.

10. HOMINY.

a. Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated hominy	6	0	$5\frac{1}{2}$ dippers	$\frac{1}{3}$ canteen cup.
Water	24	0	12 dippers	1 dipper.
Salt	0	4	8 mess kit spoons	$\frac{2}{3}$ mess kit spoon.

Yield: 100 servings, 4-ounce portions.

b. Directions. (1) Soak dehydrated hominy in cool water for 20 minutes.

(2) Add salt and bring slowly to a boil. This will require about 45 minutes.

(3) Simmer for 15 or 20 minutes or until tender.

(4) Hominy may be served plain, or seasoned with pepper and chopped bacon and fried.

11. ONIONS.

a. General Instructions. (1) During reconstitution much of the onion flavor is absorbed by the water. If surplus water exists after the reconstitution process is complete it should be used with the onions. Otherwise, the discard of surplus water will result in the loss of most of the onion flavor.

(2) Onions are used for the purpose of flavoring other foods. Meat dishes, potatoes, stews, soups, and many other vegetables are immeasurably improved through their use. In soups and stews, dehydrated onions will be reconstituted during the normal cooking process even when added in dry form. In dishes of low water content, such as roasts, gravies, eggs, potatoes, etc., the use of dehydrated onions without preliminary reconstitution will result in the complete failure of the finished product.

(3) Approximate equivalents:

1 pound dehydrated onions equals $12\frac{1}{2}$ pounds unpeeled fresh onions.

1 pound dehydrated onions equals $6\frac{1}{2}$ to 7 pounds reconstituted (cooked) onions.

b. Smothered Onions (for Steak, Liver, and Other Meats).

(1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated onions.....	2	0	$3\frac{1}{4}$ dippers.....	$\frac{1}{3}$ canteen cup.
Water.....	14	0	7 dippers.....	$\frac{2}{3}$ canteen cup.
Lard or substitute.....	1	0	$\frac{1}{2}$ dipper.....	$2\frac{1}{2}$ mess kit spoons.
Salt.....	0	$1\frac{1}{2}$	3 mess kit spoons..	Pinch.

All measurements level unless otherwise stated.

Yield: 100 servings, $1\frac{1}{2}$ -ounce portions, or approximately 10 pounds.

(2) **Directions.** (a) Stir onions into cool water and allow to soak for 20 minutes. Bring to a boil and allow to simmer (not boil vigorously) for 15 to 25 minutes, or until tender. The onions should be very tender at this stage.

(b) Heat the lard to frying temperature, add the reconstituted onions (with surplus water) and allow to stew until slightly brown and very tender. Add salt and serve as a dressing for smothered meats.

c. Onion Soup. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated onions.....	1	2	1 $\frac{3}{4}$ dippers.....	4 $\frac{1}{2}$ mess kit spoons.
Water.....	8	0	4 dippers.....	$\frac{1}{2}$ canteen cup.
Lard or substitute.....	2	0	1 dipper.....	5 mess kit spoons.
Flour.....	2	0	1 $\frac{2}{3}$ dippers.....	10 mess kit spoons.
Bouillon cubes.....	0	0	70 cubes.....	6 cubes.
Water, hot.....	40	0	20 dippers.....	2 canteen cups.
Salt.....	0	3	6 mess kit spoons..	$\frac{1}{2}$ mess kit spoon.

All measurements level unless otherwise stated.

Yield: 100 servings, approximately 45 pounds or 5 gallons of soup.

(2) Directions. (a) Soak dehydrated onions in water for 20 minutes. Bring them to a boil and simmer for 15 minutes or more.

(b) Melt the lard in a deep frying pan and add the simmered onions (with surplus water). Allow to fry until they begin to brown.

(c) Add the flour to the fried onions and stir until the flour is distributed.

(d) Dissolve bouillon cubes in hot water.

(e) Add some of the stock to thin out the onion-flour paste; then combine with the remainder of the stock. Add salt and simmer for 1 hour before serving.

12. WHITE POTATOES.

a. General Instructions. (1) The potato is one of the most popular foods of both soldiers and civilians. The proper reconstitution and preparation of this vegetable in its dehydrated form, therefore, is of particular importance. The Army cook should strive for the production of a final product which has the tender texture of a normally cooked fresh potato. *Do not stint either time or water when reconstituting the potato.*

(2) The cubed and julienne potatoes are an ideal size for hashed brown potatoes, lyonnaise style, corned beef hash, stews, soups, and salad. They are not recommended for french fried potatoes. Dehydrated products are not adaptable to this form of cooking, and french fried potatoes should be prepared from fresh potatoes only.

(3) The precooked, shredded potato is suited to the preparation of mashed potatoes, potato soups, and potato cakes. The julienne and cubed styles may also be used for the preparation of these dishes.

(4) Approximate equivalents:

1 pound dehydrated potatoes = 6 pounds raw unpeeled potatoes.

1 pound dehydrated potatoes = 4 $\frac{1}{2}$ pounds peeled potatoes.

1 pound dehydrated potatoes (cubed) = 1 $\frac{1}{3}$ dippers.

1 pound dehydrated potatoes (julienne style) = 3 pounds 10 ounces reconstituted (cooked) potatoes.

1 pound dehydrated potatoes (precooked shreds) = 6 pounds finished mashed potatoes.

b. Hashed Browned or Fried Potatoes. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated potatoes----	7	0	10 dippers-----	1 canteen cup.
Water-----	36	0	18 dippers-----	2 canteen cups.
Salt-----	0	4	8 mess kit spoons--	1/2 mess kit spoon.
Lard-----	2	0	1 dipper-----	5 mess kit spoons.

All measurements level unless otherwise stated.

Yield: 100 servings, 5-ounce portions, or approximately 33 pounds.

(2) Directions. (a) Soak dehydrated potatoes in cool water for 20 to 40 minutes and bring to a boil. This will require about 45 minutes; then add salt. Simmer for 10 more minutes, for a total cooking time of approximately 55 minutes. (Small portions take less time.)

(b) Drain off water and cool.

(c) Place 2 pounds of lard in frying pan and heat to frying temperature.

(d) Add potatoes and mix lightly with fat.

(e) Turn the potatoes after those on the bottom have been frying for about 10 to 15 minutes and are browned.

(f) Continue frying about 20 minutes more, occasionally turning potatoes.

(3) Special Instructions. (a) Be sure to drain potatoes well. Soggy potatoes will not brown nicely. When cooking smaller batches for eight men or less, the cooking or simmering time should be reduced. Only enough time is required to make the potatoes tender. Twenty minutes simmering is usually enough for small portions.

(b) The ingredients for hashed browned potatoes are proportioned at the rate of three servings per pound of finished product. For men who are not exercising vigorously the portions should be reduced to four servings per pound.

c. Lyonnaise Potatoes. (1) Prepare exactly like hashed browned potatoes reconstituting separately 12 ounces (1¼ dippers) dehydrated onions in 6 pounds (3 dippers) water. Fry onions, using onion water, then add to potatoes.

(2) Cook 100-portion quantities inside the oven using a high temperature (450° F.)

d. French Fried Potatoes. Dehydrated potatoes are not recommended for deep fat frying. There is a rapid release of water during the frying process with the result of troublesome "boiling over" of the frying fat plus a tough unsatisfactory finished product. (See **a** above).

e. Potatoes Au Gratin. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated potatoes-----	7	8	11 dippers-----	1 canteen cup.
Water (cool)-----	38	0	19 dippers-----	2 canteen cups.
{Dehydrated whole milk-----	1	0	1 dipper-----	5 mess kit spoons.
{Water (potato)-----	6	0	3 dippers-----	1/3 canteen cup.
or				
{Evaporated milk-----	(3)	(10)	(4 14 1/2-ounce cans or 2 dippers).	(1/3 canteen cup).
{Water (potato)-----	(4)	(0)	(2 dippers)-----	(1/4 canteen cup).
Salt-----	0	6	12 mess kit spoons-----	1 mess kit spoon.
Pepper-----	0	1/4	1 mess kit spoon-----	Pinch.
Cheese (sliced)*-----	2	0	1 1/4 dippers, broken, cubed, or sliced.	2 or 3 thin slices (enough to cover potatoes).
Dry bread crumbs-----	0	8	1/2 dipper-----	1/4 canteen cup (enough to cover cheese).
Butter-----	1	0	1/2 dipper-----	3 mess kit spoons.

*When dehydrated cheese is used, reconstitute 1 pound of dehydrated cheese with 1 pound of water, or sprinkle the 1 pound of dehydrated cheese over potatoes.

All measurements level unless otherwise stated.

Yield: 100 servings, 5-ounce portions, or approximately 35 pounds.

(2) Directions. (a) Soak the potatoes in water for 20 to 40 minutes. Bring to a boil and cook until tender. This requires about 1 hour. Drain well.

(b) Reconstitute milk using cold potato water.

(c) Place the cooked and drained potatoes in a deep Army baking pan. Add milk, salt, and pepper. Stir well.

(d) Slice cheese into thin slices. Scatter the slices over the potatoes.

(e) Sprinkle bread crumbs over the cheese. Dot with pieces of butter.

(f) Bake in moderate oven (350° F.) until a rich brown crust has formed. This should require 30 minutes.

f. Potato Salad. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated potatoes, julienne style.	5	0	7 dippers-----	3/4 canteen cup.
Water (for potatoes)-----	30	0	15 dippers-----	1 1/2 canteen cups.
Dehydrated onions-----	0	8	3/4 dipper-----	2 mess kit spoons.
Water (for onions)-----	3	8	1 3/4 dippers-----	1/6 canteen cup.
Vinegar-----	1	8	3/4 dipper-----	4 mess kit spoons.
Salt-----	0	3	6 mess kit spoons-----	1/2 mess kit spoon.
Pepper-----	0	1/2	2 mess kit spoons-----	Pinch.

All measurements level unless otherwise stated.

Yield: 100 servings, 4-ounce portions, or approximately 25 pounds.

(2) Directions. (a) Soak potatoes 20 to 40 minutes in cool water, then heat to the boiling point. Slowly cook until the potatoes are very tender. This should take 30 minutes. Drain off all surplus water and cool.

(b) Reconstitute onions and drain well. Add to the potatoes. Pour on the vinegar, salt, and pepper. Stir until mixed.

(c) If mayonnaise is available, leave out vinegar. Add 1 quart of mayonnaise to the 100-portion recipe.

(d) If fresh eggs are available, add 20 sliced, hard-boiled eggs. Cold scrambled dehydrated eggs may be added instead.

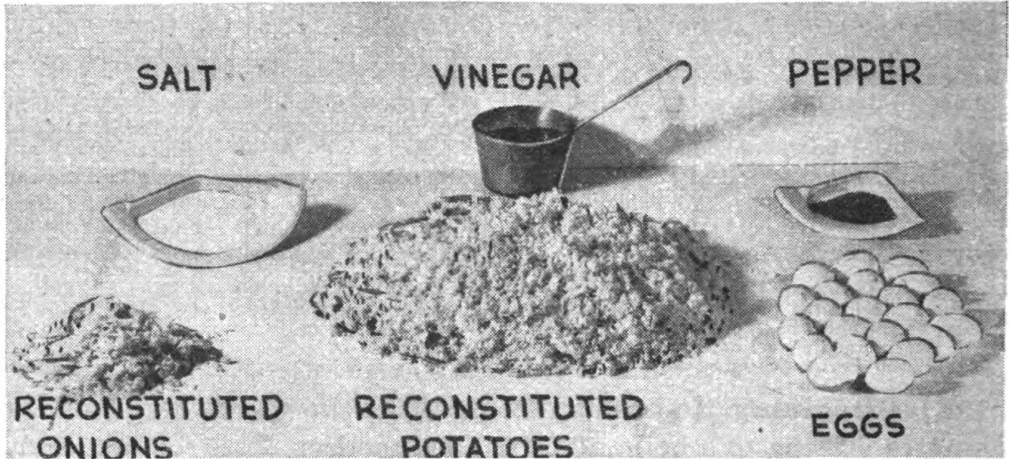


FIGURE 12. *Ingredients for potato salad.*

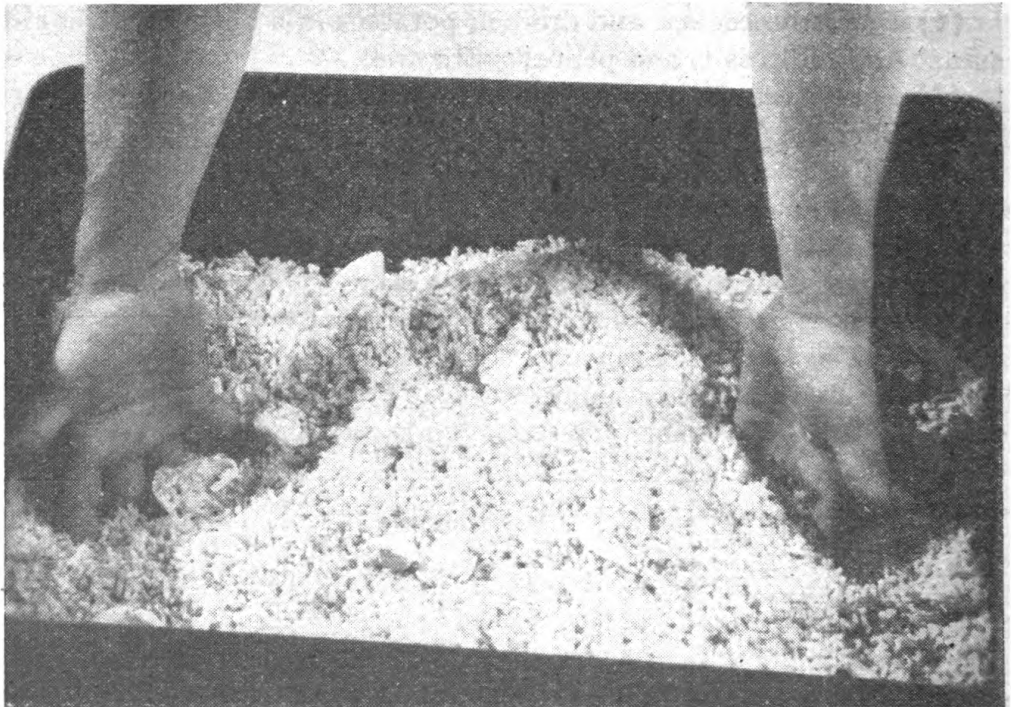


FIGURE 13. *Mixing ingredients for potato salad.*

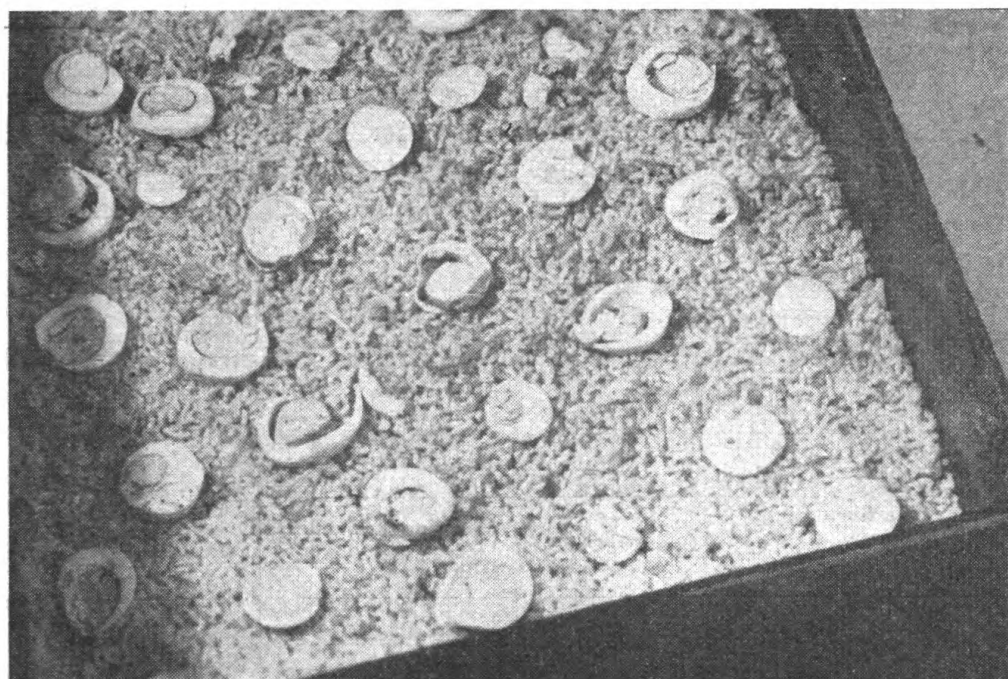


FIGURE 14. *Potato salad.*

g. Mashed Potatoes. The ever-popular mashed potato may be prepared from either well-cooked julienne (cubed) or from dehydrated shreds. Since the shredded dehydrated potato has been cooked before drying, it may be reconstituted simply by direct mixing with the proper quantity of boiling water. After reconstitution, the addition of hot milk and butter results in an excellent mashed potato. For quickness and simplicity, the dehydrated potato shred offers advantages not obtainable in other forms of potatoes.

(1) Mashed Potatoes Prepared From Precooked, Shredded Potatoes. (a) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated potato shreds, precooked.	4	8	6½ dippers-----	¾ canteen cup.
Salt-----	0	3	6 mess kit spoons--	½ mess kit spoon.
{ Evaporated milk-----	3	0	3 14½-ounce cans or 1½ dippers.	⅙ canteen cup.
{ Water-----	3	0	1½ dippers-----	⅙ canteen cup.
or				
{ Dehydrated whole milk.	(0)	(12)	(¾ dipper)-----	(4 mess kit spoons).
{ Water-----	(5)	0	(2½ dippers)-----	(⅓ canteen cup).
Butter, melted-----	1	0	½ dipper-----	2½ mess kit spoons.

All measurements level unless otherwise stated.

Yield: 100 servings, 5-ounce portions, or approximately 32 pounds.

(b) Directions.

1. Have water boiling vigorously.
2. Measure accurately and pour over the shredded potatoes.
Let stand in covered container on back of stove for 15 minutes or over a low flame for 10 minutes.
3. Add salt and stir vigorously for 15 or 20 minutes in order to work out lumps.
4. After working smooth, add hot reconstituted milk and melted butter. Whip until fluffy.

(2) Mashed Potatoes Prepared From Julienne or Cubed Potatoes. (a) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated potatoes.....	7	0	10 dippers.....	1 canteen cup.
Water.....	34	0	17 dippers.....	1 $\frac{3}{4}$ canteen cups.
{ Evaporated milk.....	1	8	1 $\frac{1}{2}$ 14 $\frac{1}{2}$ -ounce cans or $\frac{3}{4}$ dipper.	4 mess kit spoons.
{ Water (potato).....	1	8	$\frac{3}{4}$ dipper.....	4 mess kit spoons.
or				
{ Dehydrated whole milk.....	(0)	(5)	($\frac{1}{3}$ dipper).....	(1 mess kit spoon).
{ Water (potato).....	(2)	(8)	(1 $\frac{1}{2}$ dippers).....	(6 mess kit spoons).
Salt.....	0	4	8 mess kit spoons.....	$\frac{1}{2}$ mess kit spoon.
Butter.....	1	0	$\frac{1}{2}$ dipper.....	2 $\frac{1}{2}$ mess kit spoons.

All measurements level unless otherwise stated.

Yield: 100 servings, 5-ounce portions, or approximately 34 pounds.

(b) Directions.

1. Soak julienne style potatoes for 40 minutes, cubed style for 20 minutes. Bring to a boil and cook until very tender. Drain off and save surplus water. This should give 25 pounds of potato pieces and approximately 1 $\frac{1}{2}$ gallons (six dippers) of surplus potato water.
2. Mash the drained potato pieces until as smooth as possible. All lumps cannot be removed.
3. Reconstitute milk with cool potato water and bring to a boil. Add salt and butter.
4. Slowly stir the hot milk mixture into the mashed potatoes. Beat well.

h. Cream of Potato Soup. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Water.....	50	0	25 dippers.....	2 dippers.
Salt.....	0	4	8 mess kit spoons..	½ mess kit spoon.
Pepper.....	0	¼	1 mess kit spoon....	Pinch.
Dehydrated onions.....	0	4	⅓ dipper.....	1 mess kit spoon.
Dehydrated potatoes, precooked shreds.	4	0	6 dippers.....	½ dipper.
Evaporated milk.....	9	0	10 14½-ounce cans or 4½ dippers.	½ dipper.
or				
{ Dehydrated whole milk.	(2)	(8)	(2½ dippers).....	(12 mess kit spoons).
{ Water.....	(6)	(0)	(3 dippers).....	(⅓ canteen cup).
Butter.....	2	0	1 dipper.....	5 mess kit spoons.

All measurements level unless otherwise stated.

Yield: 100 10-ounce servings, or approximately 65 pounds or 8 gallons of soup.

(2) Directions. (a) Put water, salt, pepper, dehydrated onions, and shredded potatoes in a kettle and bring to a boil.

(b) Let simmer for about 30 minutes; add evaporated or reconstituted milk and butter and let simmer for 20 minutes more. Serve hot.

(c) If soup is not the main dish of the meal, prepare only one-half of the recipe.

13. SWEETPOTATOES.

a. General Instructions. (1) Sweetpotatoes are adapted to many forms of cooking. They may be prepared plain with butter, candied, fried, served as a side dish with meats and fowl, or used as a pie. When cooking sweetpotatoes, one important watchword should be: *Avoid dryness*. It is essential that sweetpotatoes be reconstituted to maximum moisture content if tasty, moist, finished product are to be obtained.

(2) Approximate equivalents:

1 pound dehydrated sweetpotatoes equals 3⅓ pounds fresh unpeeled sweetpotatoes.

1 pound dehydrated sweetpotatoes equals 2 pounds 12 ounces to 3 pounds drained reconstituted sweetpotatoes.

b. Buttered Sweetpotatoes (Baked). (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated sweetpotatoes.	7	8	10 dippers-----	1 canteen cup.
Water, cool-----	30	0	15 dippers-----	1¼ dippers.
Salt-----	0	1	2 mess kit spoons--	Pinch.
Butter-----	2	0	1 dipper-----	5 mess kit spoons.

All measurements level unless otherwise stated.

Yield: 100 servings, 5-ounce portions, or approximately 31 to 32 pounds.

(2) Directions. (a) Soak potato slices for 20 to 40 minutes, then slowly bring to a boil. Simmer 35 to 45 minutes. It is important that the potatoes be tender and moist at this stage. Be sure to cook sufficiently.

(b) Drain off the surplus water (there should be only a small quantity), add salt and butter, and mash by stirring vigorously.

(c) Place in large baking pan, add the surplus water which was previously drained off, stir, and bake for 20 minutes in a moderate oven.

c. Candied or Glazed Sweetpotatoes. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated sweetpotatoes.	7	8	10 dippers-----	1 canteen cup.
Cool water-----	30	0	15 dippers-----	1¼ dippers.
Granulated sugar-----	5	0	2½ dippers-----	¼ canteen cup.
Butter-----	1	0	½ dipper-----	2½ mess kit spoons.

All measurements level unless otherwise stated.

Yield: 100 servings, 5-ounce portions, or approximately 30 to 32 pounds.

(2) Directions. (a) Soak potatoes in cool water for 20 to 40 minutes and then boil for 30 to 45 minutes. Be sure to cook until tender.

(b) Drain off surplus water (do not throw away), being careful to leave slices whole.

(c) Make a sirup by adding sugar to the surplus water and boiling for 5 minutes.

(d) Place the sweetpotato slices in a baking pan. Pour the sirup over the sweetpotatoes and dot with butter. Bake for 30 minutes in a moderate oven.

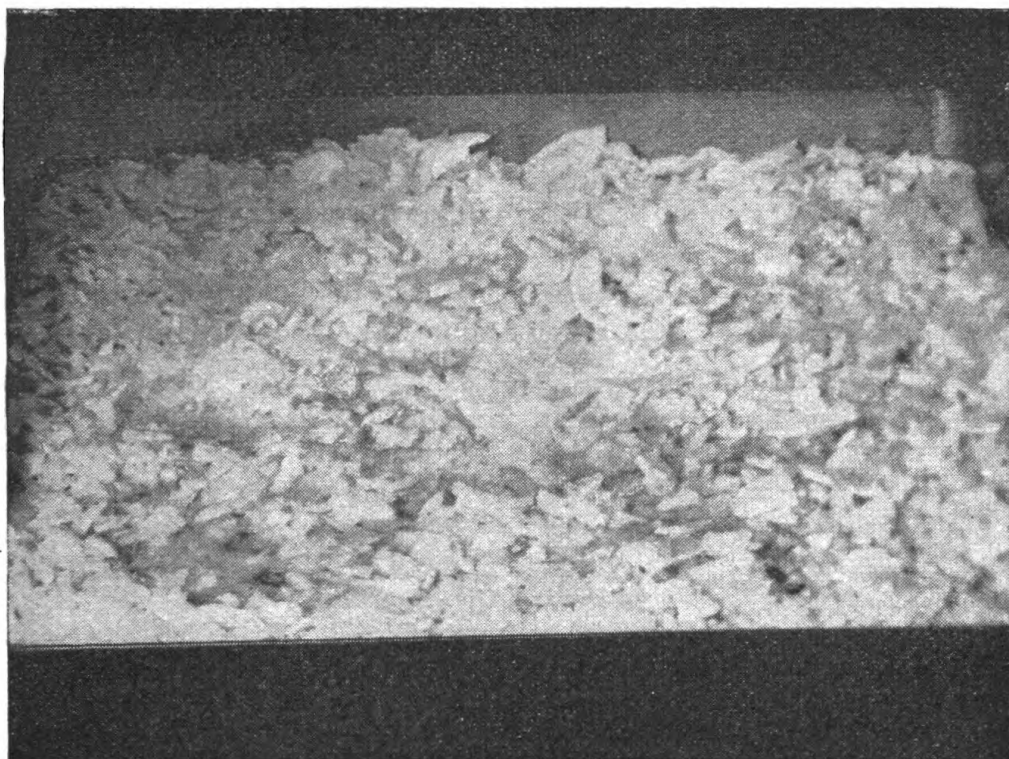


FIGURE 15. *Glazed sweetpotatoes.*

d. Baked Sweetpotatoes With Sugar and Raisins. Reconstitute as for buttered sweetpotatoes. Drain well and stir in 5 pounds of raisins (three dippers). Sprinkle heavily with sugar (4 pounds or two dippers) and dot with butter. Bake for 30 minutes.

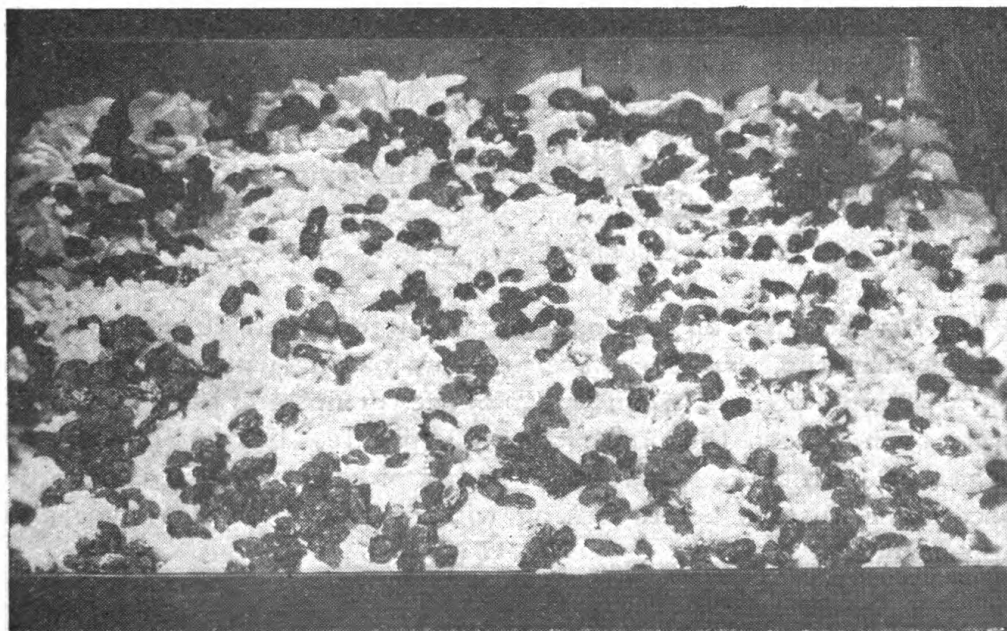


FIGURE 16. *Baked sweetpotatoes with sugar and raisins.*

14. TURNIPS (RUTABAGAS).

a. General Instructions. (1) The turnip is particularly high in food value and is quite adaptable to the dehydration process. It is easily reconstituted and cooked and will add variety to the menu. The rutabaga turnip, if properly cooked and seasoned, will be enjoyed even by those who do not ordinarily like it.

(2) Approximate equivalents:

1 pound dehydrated turnips equals 8 pounds fresh turnips.

1 pound dehydrated turnips equals 6 pounds drained reconstituted turnips.

b. Turnips Seasoned With Bacon. (1) Method No. 1. (a) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated turnips----	4	0	6½ dippers-----	2⅓ canteen cup.
Water-----	24	0	12 dippers-----	1 dipper.
Salt-----	0	4½	9 mess kit spoons--	2⅓ mess kit spoon.
Pepper-----	0	½	2 mess kit spoons--	Pinch.
Bacon-----	3	0	1½ dippers-----	⅓ canteen cup.

All measurements level unless otherwise stated.
Yield: 100 servings, 4-ounce portions, or approximately 28 pounds.

(b) Directions.

1. Soak dehydrated turnips in cool water for 20 minutes and bring to a boil uncovered. This will require approximately 35 minutes. Simmer uncovered for 10 minutes more, for a total cooking time of approximately 45 minutes. Be sure the turnips are tender.
2. Take stock pot from stove and add salt and pepper.
3. Fry 3 pounds of diced bacon in frying pan until lightly browned.
4. Add to cooked turnips.
5. Mix well and serve.

(2) Method No. 2. Reconstitute 4 pounds dried turnips as suggested in method No. 1. Place in Army baking pan complete with juice. Strip 3 pounds bacon on top of the turnips and bake in a moderate oven. Turn the bacon after 10 minutes' baking in order to brown on both sides. One-fourth pound of sugar sprinkled over the bacon and turnips before baking will improve both its flavor and appearance.

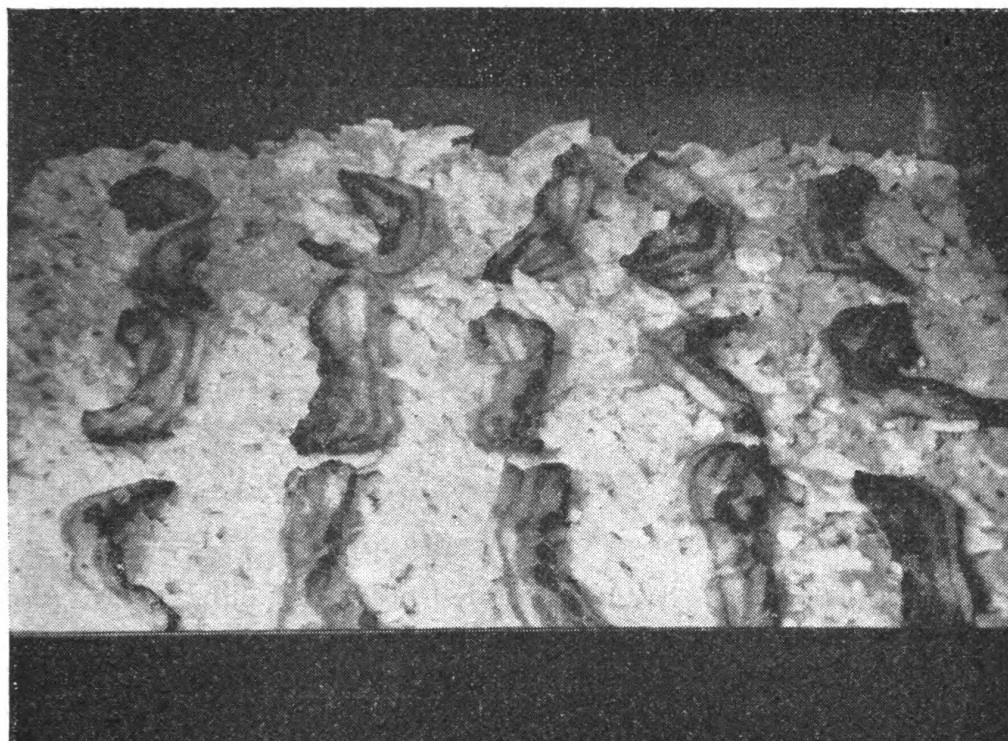


FIGURE 17. Turnips cooked with bacon.

c. Baked Turnips and Potatoes. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated turnips-----	1	8	2½ dippers-----	¼ canteen cup.
Cool water (for turnips)-----	10	0	5 dippers-----	½ canteen cup.
Dehydrated white potatoes-----	4	8	6½ dippers-----	½ dipper.
Cool water (for potatoes)-----	22	0	11 dippers-----	1⅙ canteen cups.
Salt-----	0	6	12 mess kit spoons-----	1 mess kit spoon.
Pepper-----	0	½	2 mess kit spoons-----	Pinch.
Bacon-----	3	0	1½ dippers-----	⅙ canteen cup.

Yield: 100 servings, 4-ounce portions, or approximately 28 pounds.

NOTE. The combination of turnips and potatoes is preferable to many instead of straight turnips because of the more delicate flavor.

(2) Directions. (a) Measure the dehydrated turnips and potatoes into two portions of cold water and soak for 20 to 40 minutes. Bring each batch to a boil. Boil for 25 to 30 minutes and then drain off surplus water. The potato water may be discarded or held for soup but the turnip water should be poured back on the mixture. This is the only reason for reconstituting the two vegetables separately.

(b) Mix potatoes and turnips and place in Army baking pan. Season with salt and pepper and then strip with bacon. Bake in the oven until the bacon is crisp on both sides.

15. BAKED BEANS.

a. Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated beans.....	15	0	12 dippers.....	1 $\frac{1}{3}$ canteen cups.
Water.....	30	0	15 dippers.....	1 $\frac{2}{3}$ canteen cups.

All measurements level unless otherwise stated.

Yield: 100 servings, 7-ounce portions, or 43 to 45 pounds.

b. Directions. (1) Add dehydrated beans to boiling water. Boil slowly for 12 to 15 minutes or until soft. Do not boil rapidly.

(2) During the boiling process stir gently occasionally. Avoid violent stirring as it will cause the beans to break up and become mushy.

16. WHITE SAUCE FOR VEGETABLES.

a. General. To vary the flavor and appearance of such vegetables as cabbage, carrots, onions, and potatoes, they may be served with a well-prepared white sauce.

b. Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
{ Evaporated milk.....	2	11	3 14 $\frac{1}{2}$ -ounce cans or 1 $\frac{1}{3}$ dippers.	6 mess kit spoons.
{ Water.....	4	0	2 dippers.....	10 mess kit spoons.
or				
{ Dehydrated milk.....	(0)	(12)	(1 canteen cup)...	(3 mess kit spoons.)
{ Water.....	(6)	(0)	(3 dippers).....	($\frac{1}{3}$ canteen cup.)
Flour.....	0	8	$\frac{1}{3}$ dipper.....	2 $\frac{1}{2}$ mess kit spoons.
Salt.....	0	$\frac{1}{2}$	1 mess kit spoon...	Pinch.
Butter.....	1	0	$\frac{1}{2}$ dipper.....	2 $\frac{1}{2}$ mess kit spoons.

All measurements level unless otherwise stated.

c. Directions. (1) Make a paste of flour and three-fourths dipper of milk.

(2) Boil reconstituted milk and stir into flour paste. Stir until sauce becomes white and thick.

(3) Add butter.

CHAPTER 4

EGGS AND MEAT DISHES

	Paragraph
Dehydrated eggs.....	17
Bacon and eggs (oven method).....	18
Corn fritters.....	19
French toast.....	20
Eggs and beef (hunter's style).....	21
Beef stew.....	22
Luncheon meat.....	23
Corned beef hash.....	24
Vegetable soup (made with dehydrated vegetables and beef shank).....	25

17. DEHYDRATED EGGS.

a. Advantages. Dehydrated whole eggs have many advantages over fresh shell eggs. They are of smaller bulk and weight; they are not highly perishable and hence do not require troublesome refrigeration; and they are ready for instant use, making laborious inspection and separation from the shell unnecessary. Their superior keeping qualities alone make dehydrated eggs of special value to the Army, but the space conservation and weight reduction effected by their use is also an important consideration, as indicated by the following table:

1 case (30 dozen) or 360 eggs in shell.....	45 pounds.
1 egg case (complete with fillers).....	11 pounds.
—	
Total weight (30 dozen eggs complete with case)	56 pounds.
Space occupied by 1 case shell eggs (crate size 1 case shell eggs).....	2.34 cubic feet.
1 case eggs (after removing from shell).....	38 pounds.
1 case eggs (after dehydrating).....	10 pounds 8 ounces.
Space occupied by 1 case eggs after dehydrating, packed in No. 10 cans, and crated.....	.573 cubic feet.
1 dozen eggs (in shell).....	1 pound 8 ounces.
1 dozen eggs (removed from shell).....	1 pound 4 ounces.
1 dozen eggs (dehydrated).....	5.6 ounces.
1 egg (dehydrated).....	2 level mess kit spoons or 0.47 ounce.
1 case (30 dozen eggs) occupies.....	2.34 cubic feet.
1 case (30 dozen eggs) dehydrated, packed in No. 10 cans, and crated, occupies.....	.573 cubic feet.

b. Composition and Equivalents of Dehydrated Eggs. (1)

After removal from the shell an egg contains approximately 73.5 the percent of water. Dehydrated whole eggs contain only 5 percent water. A comparative analysis of the composition of fresh eggs versus dehydrated eggs follows:

	Fresh eggs	Dehydrated eggs
Moisture	73.7	5.0
Fat	11.4	41.8
Carbohydrates	0.3	1.2
Proteins	13.8	48.9
Minerals	0.8	3.1
Total	100.0	100.0

(2) Table of equivalents (measurements are approximate):

Equivalent number of shell eggs	Equivalent weight in shelled eggs	Dehydrated whole eggs		Added water	
		By weight	By volume	By weight	By volume
1 egg	1.7 ounces	0.47 ounce	2 mess kit spoons	1 1/4 ounces	3 mess kit spoons.
1 dozen eggs	1 pound 4 ounces	5.6 ounces	2 2/3 canteen cup (scant).	14.5 ounces	1 1/2 canteen cup.
36 eggs	3 pounds 10 ounces	1 pound	1 No. 56 dipper (slightly rounded).	2 pounds 10 ounces	1 1/3 No. 56 dippers.
100 eggs	10 pounds 10 ounces	2 pounds 12 ounces	3 No. 56 dippers (slightly rounded).	7 pounds 14 ounces	4 No. 56 dippers (scant).
360 eggs (1 case)	38 pounds	10 pounds 8 ounces	12 No. 56 dippers	27 pounds 8 ounces	14 No. 56 dippers.

All measurements level unless otherwise stated.

18. BACON AND EGGS (OVEN METHOD).

a. General. This method of preparing eggs may also be used for preparing sausage and eggs, ham scraps and eggs, etc. While dehydrated whole eggs vary in density to some extent, the fact that they are packed in 3-pound cans should aid in measuring the proper amount.

b. Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Bacon (sliced and coarsely chopped).	6	0	3 dippers (cubed or diced).	1/2 canteen cup.
Dehydrated whole eggs.	5	12	6 1/2 dippers.	2/3 canteen cup.
Water	14	0	7 dippers.	3/4 canteen cup.
Evaporated milk	6	2	7 12 1/2-ounce cans or 3 dippers.	1/3 canteen cup.
or				
Dehydrated whole milk.	(1)	(12)	(1 3/4 dippers).	(9 mess kit spoons).
Water	(18)	(0)	(9 dippers).	(1 canteen cup).
Salt	0	2 1/2	5 mess kit spoons.	Pinch.
Pepper	0	1/2	2 mess kit spoons.	Pinch.

All measurements level unless otherwise stated.

Yield: 100 servings, 5 1/2-ounce portions, or approximately 33 pounds.

c. Directions. (1) Stir the eggs with one-third of the reconstituted milk. Do not use all of the milk at once, since this may cause lumping. Vigorous stirring is needed. After the mixture is smooth, add the remaining reconstituted milk, together with the salt and



FIGURE 18. Reconstituting the eggs.

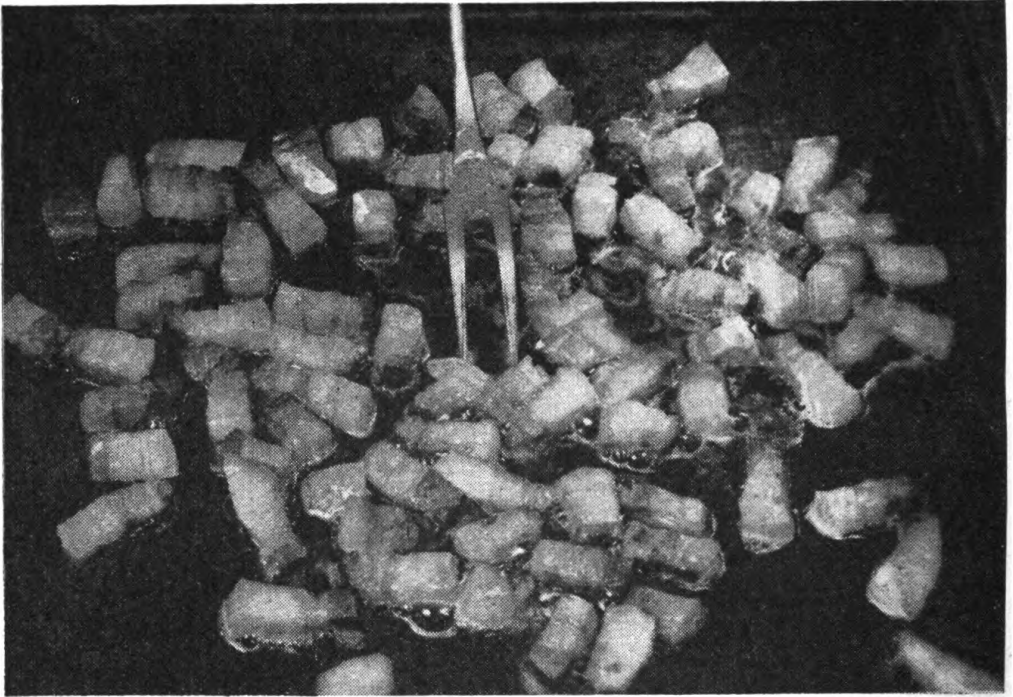


FIGURE 19. *Frying the bacon.*

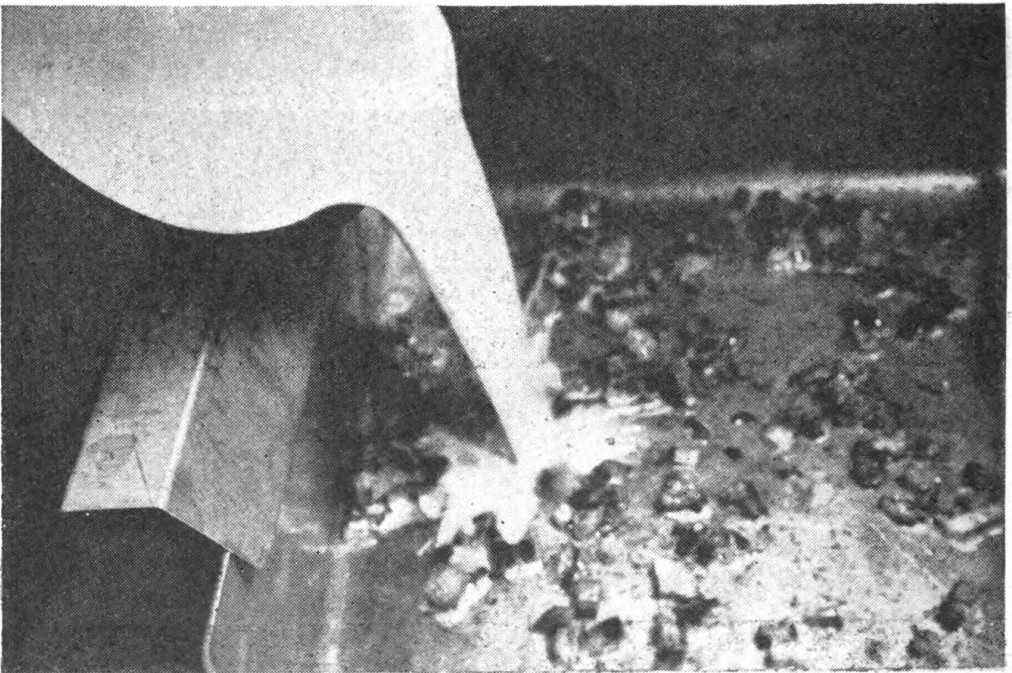


FIGURE 20. *Combining the eggs with the bacon.*

pepper. Always use cold water or milk when reconstituting eggs. After eggs have been reconstituted, do not allow the mixture to stand in a warm kitchen because spoiling will result in a few hours.

(2) Fry the cubed bacon in a deep Army baking pan until it is crisp and brown.

(3) When cooking for 100 men or more, pour the eggs over the fried bacon and fat and then place the entire mixture in the bake oven. Do not try to cook large quantities on top of the stove. Small orders for eight persons cook without difficulty on top of the stove; however, large 100-portion quantities are likely to scorch unless cooked in the oven. The oven temperature should be moderate (275° to 325° F.). Certain ovens which have too much bottom heat may necessitate the use of double pans.

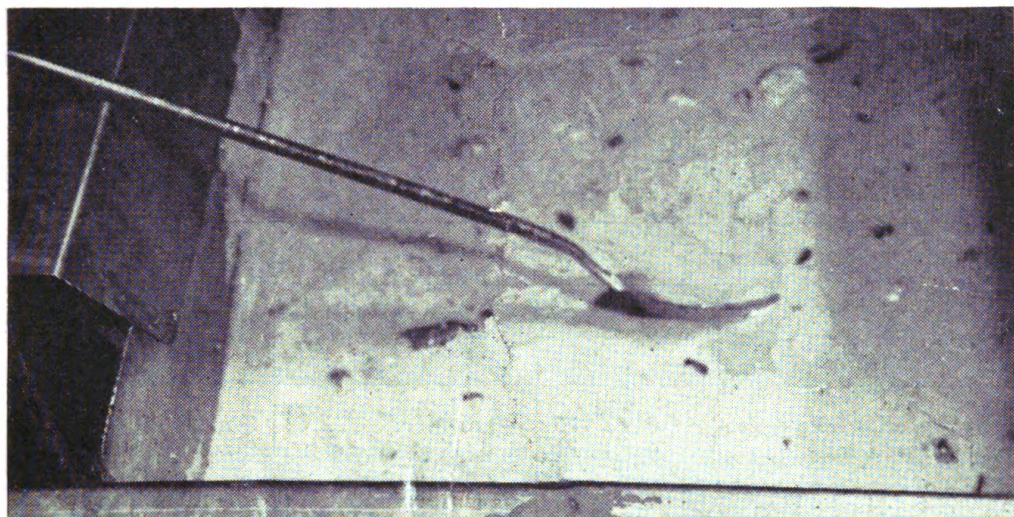


FIGURE 21. *Stirring the eggs.*

(4) After the eggs have been in the oven for about 10 minutes, or when they have begun to set, stir them with a wooden paddle. Pull all coagulated egg toward the center of the pan, then put the pan back in the oven.

(5) Stir again every 5 minutes until the eggs are properly coagulated. Remove them from the oven while they are still slightly soft, since they will continue to coagulate for a few minutes after removal from the oven. Forty-five minutes cooking time is necessary.

(6) Serve the finished scrambled eggs and bacon quickly. They maintain their best texture for perhaps 20 to 30 minutes. Do not warm them over as this will make the eggs tough and rubbery.

19. CORN FRITTERS.

a. General. Nearly every Army kitchen has the ingredients for corn fritters. They represent a very popular and highly nutritious addition to the Army mess.

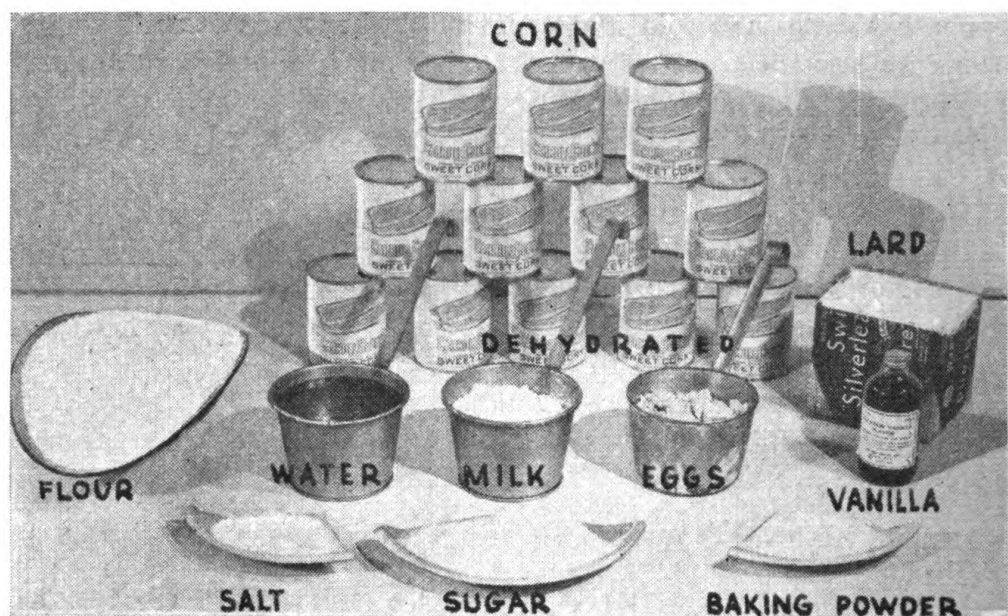


FIGURE 22. *Ingredients for corn fritters.*

b. Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated whole eggs	0	10	$\frac{2}{3}$ dipper	3 mess kit spoons.
{ Evaporated milk	0	14	1 $14\frac{1}{2}$ -ounce can or $\frac{1}{2}$ dipper.	2 mess kit spoons.
{ Water	1	12	$\frac{7}{8}$ dipper	$4\frac{1}{2}$ mess kit spoons.
or				
{ Dehydrated whole milk.	(0)	(4)	($\frac{1}{4}$ dipper)	($1\frac{1}{3}$ mess kit spoons.)
{ Water	(2)	(6)	($1\frac{1}{4}$ dippers)	(6 mess kit spoons.)
Cream style canned corn.	15	0	$2\frac{1}{2}$ No. 10 cans or 7 dippers.	$\frac{2}{3}$ canteen cup.
Granulated sugar	1	0	$\frac{1}{2}$ dipper	$2\frac{1}{2}$ mess kit spoons.
Salt	0	3	6 mess kit spoons	$\frac{1}{2}$ mess kit spoon.
Vanilla (optional)			To taste	To taste.
Flour	4	2	$3\frac{1}{3}$ dippers	$\frac{1}{3}$ canteen cup.
Baking powder	0	3	6 mess kit spoons	$\frac{1}{2}$ mess kit spoon.
Lard for frying	4	0	2 dippers	$\frac{1}{4}$ canteen cup.

All measurements level unless otherwise stated.

Yield: 100 servings, or 200 2-ounce fritters (including absorbed frying fat).

c. Directions. (1) Dehydrated whole eggs should be mixed with the canned corn and then followed by all other ingredients. The flour and baking powder, mixed together, should be added last. A smooth batter should result.

(2) Place 3 pounds of lard in a large frying pan or roasting pan and heat to frying temperature of 360° F. (almost smoking hot). Drop fritters in frying pan with a large spoon until the pan is filled. By the

time the last fritters are dropped into the lard, the first fritters are ready to be turned.

(3) Turn fritters as soon as they begin to brown. Do not overcook as they will become grease-soaked. Frying time is approximately 2

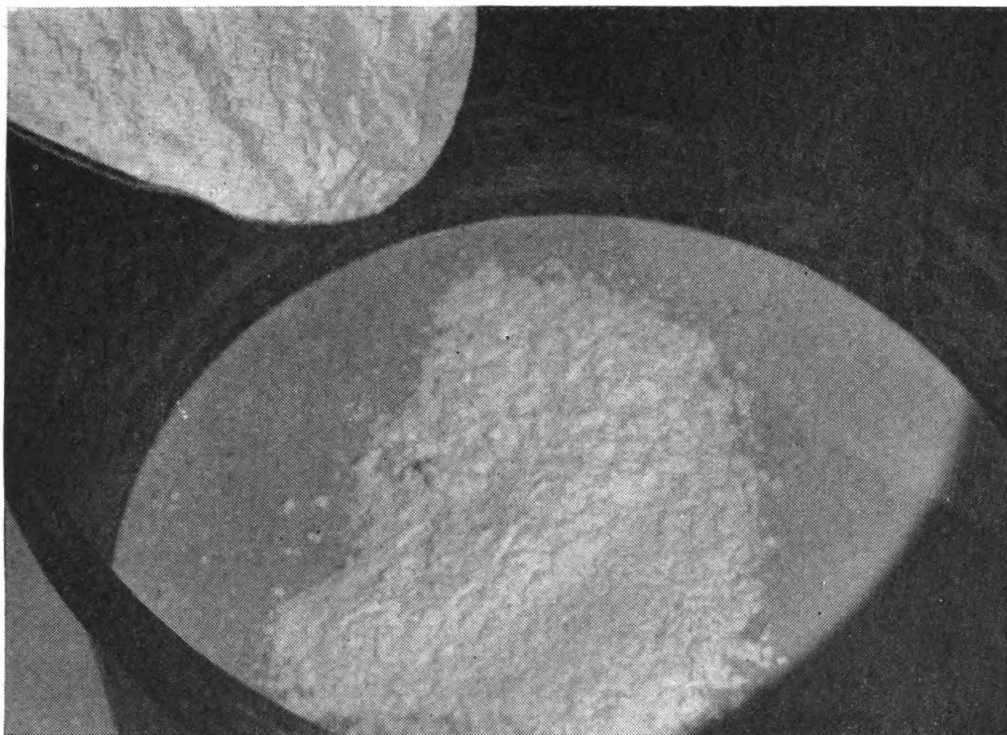


FIGURE 23. *Mixing ingredients.*

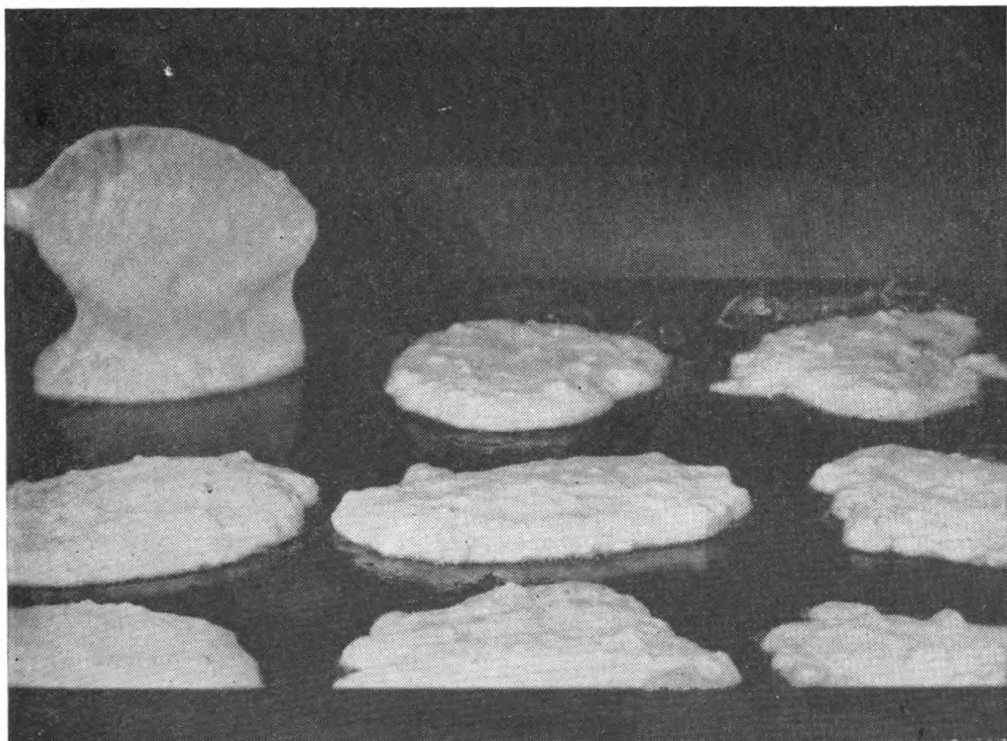


FIGURE 24. *Dropping the batter into the hot fat.*

or 3 minutes on each side. Continue frying until half of the batter has been used. Add 1 pound of lard to frying pan and finish frying.

(4) Stack corn fritters in large pans to keep warm. They may be served either plain or with sirup.

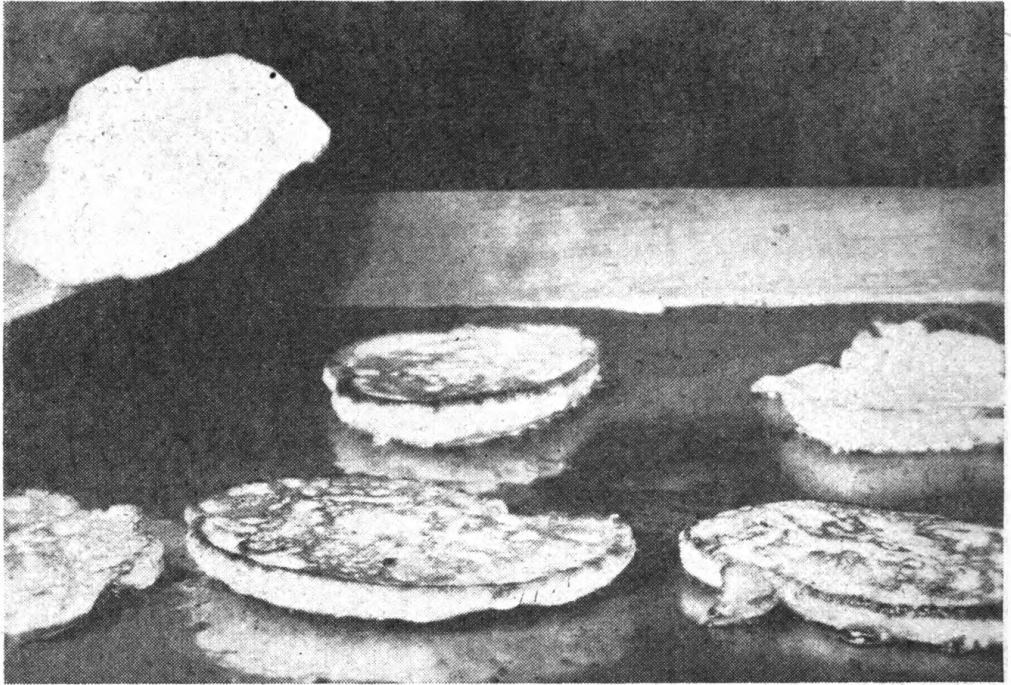


FIGURE 25. *Frying the fritters.*



FIGURE 26. *Completed corn fritters.*

20 FRENCH TOAST.

a. Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated whole eggs.....	2	0	2 1/3 dippers.....	1/4 canteen cup.
Water.....	5	0	2 1/2 dippers.....	1/4 canteen cup.
{ Evaporated milk.....	2	0	2 14 1/2-ounce cans or 1 dipper.	5 mess kit spoons.
{ Cool water.....	3	0	1 1/2 dippers.....	8 mess kit spoons.
or				
{ Dehydrated whole milk.....	(0)	(8)	(1/2 dipper).....	(2 1/2 mess kit spoons.)
{ Water.....	(4)	(8)	(2 1/4 dippers).....	(1/4 canteen cup).
Salt.....	0	1	2 mess kit spoons.....	Pinch.
Bread (100 thick slices).....				8 thick slices.
Lard (for frying).....	4	0	2 dippers.....	1/4 canteen cup.

All measurements level unless otherwise stated.

b. Directions. (1) Reconstitute eggs in cold water and reconstituted milk to make a paste. Then add salt and second portion of the water. Stir until very smooth.

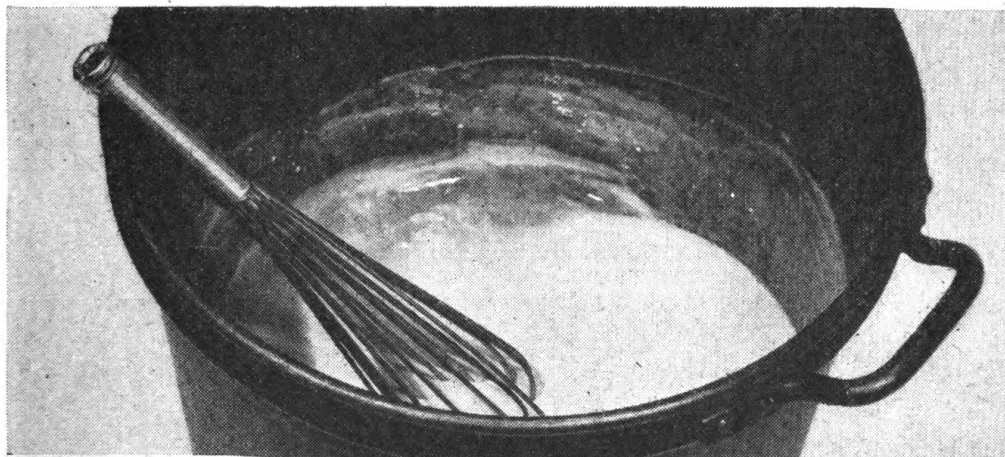


FIGURE 27. *Preparing the batter.*

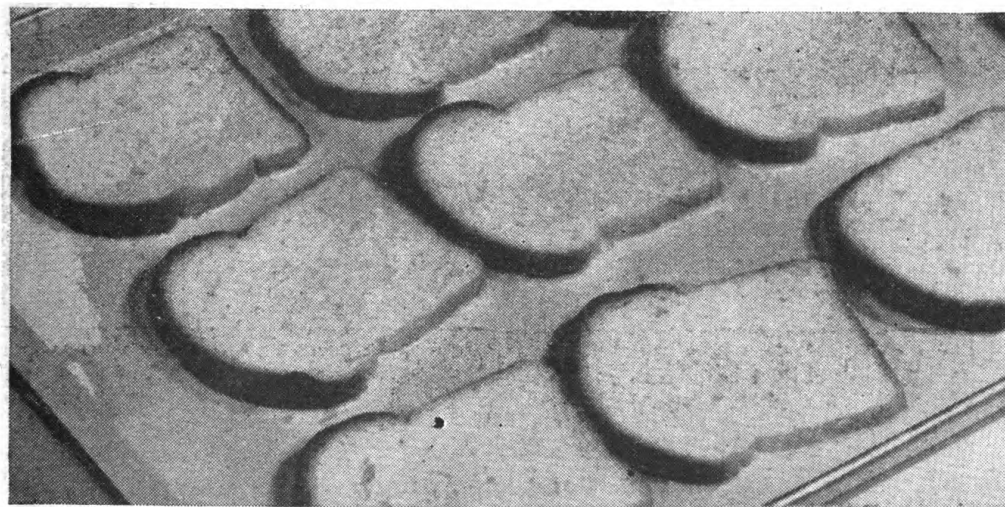


FIGURE 28. *Soaking bread slices.*

(2) Pour into a shallow pan and dip slices of bread in the egg mixture. Allow to soak for $\frac{1}{2}$ minute, or until the egg batter begins to penetrate the slices.

(3) Heat the lard in a large Army baking pan until it is quite hot. The lard should be at a depth of $\frac{1}{2}$ inch only. Use part of the lard at the start and add to it as needed. Drop the soaked bread in the lard and fry to a golden brown. Turn and brown on the other side.

(4) Serve with jam, sirup, honey, or a sugar coating.



FIGURE 29. *Frying french toast.*

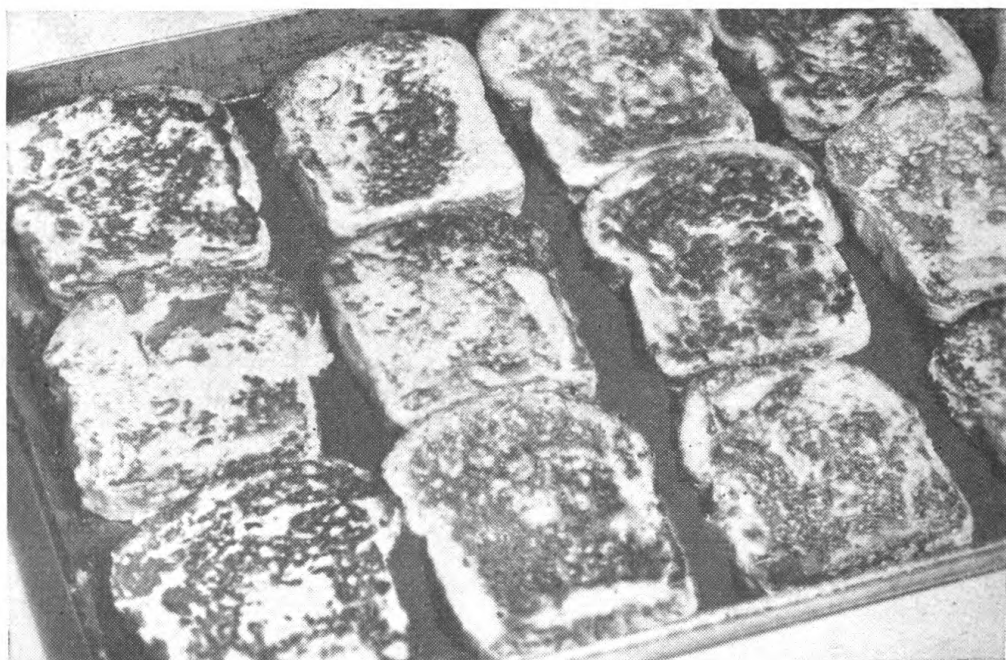


FIGURE 30. *Completed french toast.*

21. EGGS AND BEEF (HUNTER'S STYLE).

a. General. Any left-over meats can be used to prepare this dish. Canned corned beef can also be used.

b. Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Water.....	20	0	10 dippers.....	1 canteen cup.
Dehydrated eggs.....	6	8	7½ dippers.....	¾ canteen cup.
Dehydrated onions.....	0	12	1⅓ dippers.....	3 mess kit spoons.
Hot water.....	4	0	2 dippers.....	¼ canteen cup.
Lard.....	2	0	1 dipper.....	5 mess kit spoons.
Diced boiled beef or beef scraps.....	6	0	9 dippers.....	1 canteen cup.
Pepper.....	0	¼	1 mess kit spoon.....	Pinch.
Salt.....	0	3	6 mess kit spoons.....	½ mess kit spoon.

All measurements level unless otherwise stated.

Yield: 100 servings, 6-ounce portions, or approximately 37 pounds.

c. Directions. (1) Slowly add the first part of the water to the dehydrated eggs. Stir until a smooth mixture is formed.

(2) Soak dehydrated onions in the hot water for 20 to 30 minutes.

(3) Heat the lard in the large Army baking pan and fry onions for a few minutes. Use all surplus onion water.

(4) Add the diced boiled beef, the egg solution, pepper, and salt, and bake in oven at approximately 400° F.

(5) Stir occasionally (as for scrambled eggs) until properly set. Smaller portions can be cooked in the frying pan on top of the stove.

22. BEEF STEW.

a. Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Boneless beef chuck, 1½-inch cubes, fresh or frozen.....	35	0	25 dippers.....	3 pounds or 3 canteen cups.
Salt.....	0	4½	9 mess kit spoons.....	⅔ mess kit spoon.
Pepper.....	0	½	2 mess kit spoons.....	Pinch.
Lard.....	2	0	1 dipper.....	5 mess kit spoons.
Dehydrated onions.....	0	9	1 dipper.....	2 mess kit spoons.
Water (for onions).....	3	0	1½ dippers.....	8 mess kit spoons.
Tomatoes (canned).....	6	4	1 No. 10 can or 3 dippers.	⅓ canteen cup.
Dehydrated carrots.....	1	2	1 dipper.....	6 mess kit spoons.
Water (for carrots).....	6	0	3 dippers.....	⅓ canteen cup.
Dehydrated potatoes, julienne style.....	4	0	6 dippers.....	½ dipper.
Water (for potatoes).....	16	0	8 dippers.....	1 canteen cup.

All measurements level unless otherwise stated.

Yield: 100 servings, 7-ounce portions, or approximately 55 pounds.

b. Directions. (1) Season beef with salt and pepper. Dump into large Army bakepan and brown in the lard. A hot stove is necessary.

(2) Bring 3 pounds of water to a boil and pour over the dehydrated onions. Allow to stand for 20 minutes.

(3) Place meat, onions, tomatoes, and water in the large stock pot. Cover and cook on top of the stove or in the oven. Allow to stew or boil for approximately 1½ hours.

(4) Soak carrots and potatoes for 20 minutes either separately or together. Bring to a boil, then add them to the stew, and continue cooking until they become tender (approximately 1 hour).

23. LUNCHEON MEAT.

a. General. Luncheon meat may be served in a number of ways other than the conventional cold or fried slices. Listed below are recipes and suggestions which are designed to demonstrate the adaptability of this meat when used in combination with other foods. If luncheon meat is served frequently, the cook should try to add variety to the menu by using these suggestions as a guide in working out his own special recipes.

b. Scrambled Eggs and Luncheon Meat. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Luncheon meat (diced).....	6	0	1 6-pound can.....	6 slices or 2/3 canteen cup.
Lard.....	2	0	1 dipper.....	6 mess kit spoons.
Dehydrated whole eggs.....	5	12	6½ dippers.....	2/3 canteen cup.
{ Water.....	14	0	7 dippers.....	3/4 canteen cup.
{ Evaporated milk.....	6	2	7 14½-ounce cans or 3 dippers.	1/3 canteen cup.
or				
{ Dehydrated whole milk.....	(1)	(12)	(1¾ dippers).....	(9 mess kit spoons).
{ Water.....	(18)	(0)	(9 dippers).....	(1 canteen cup).
Salt.....	0	3	6 mess kit spoons..	1/2 mess kit spoon.
Pepper.....	0	1/2	2 mess kit spoons..	Pinch.

All measurements level unless otherwise stated.

Yield: 100 servings, 5½-ounce portions, or approximately 35 pounds.

(2) Directions. (a) Stir the eggs with one-third of the reconstituted milk. Stir vigorously to eliminate all lumps. When perfectly smooth, add the remainder of the milk.

(b) When cooking for 100 men or more, pour the dissolved eggs over the melted lard and diced luncheon meat. Add salt and pepper. Use deep Army baking or roasting pan.

(c) Place in the Army range bake oven at approximate temperature of 400° F. Stir with wooden paddle as the eggs begin to set. Stir every 5 minutes until the eggs are properly coagulated. Take

the eggs out of the oven while they are still slightly soft since they will continue to set slightly after removal. Forty-five minutes cooking time is necessary.

c. Baked Luncheon Meat. (1) Place the luncheon meat loaves in a shallow pan. Dot with cloves. Cover with sugar. Bake in a moderate oven for 30 minutes or enough to heat the meat thoroughly. Pineapple slices or apricot halves may be used as a garnish.

(2) For 100 servings use five 6-pound cans of luncheon meat and approximately 2 pounds of sugar.

d. Corn and Luncheon Meat Casserole. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Corn, cream style.....	27	0	4 No. 10 cans or 20 No. 2 cans.	2 No. 2 cans.
Salt.....	0	3	6 mess kit spoons..	1/2 mess kit spoon.
Pepper.....	0	1/2	2 mess kit spoons..	Pinch.
Luncheon meat, diced..	18	0	3 6-pound cans....	1/4 6-pound can.
Butter.....	0	8	1/4 dipper.....	2 mess kit spoons.

All measurements level unless otherwise stated.
Yield: 100 servings, 7-ounce portions, or approximately 45 pounds.

(2) Directions. (a) Pour the corn into a greased baking pan. Season with salt and pepper. If corn is too thick, it may be thinned with evaporated milk or water.

(b) Add luncheon meat which has been diced in 1/4- to 1/2-inch cubes and dot with butter.

(c) Bake in moderate oven about 30 minutes.

24. CORNED BEEF HASH.

a. General. Corned beef hash may be served with either poached or scrambled eggs, if desired. When cooked so that it is crusty and brown it is a very popular dish.

b. Formula. Since there is usually a sufficient quantity of salt in the corned beef itself, salt has been purposely omitted from the following formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated potatoes...	6	0	9 dippers.....	1 canteen cup.
Cool water (for potatoes).	31	0	15 1/2 dippers.....	12 2/3 canteen cups.
Dehydrated onions.....	0	8	3/4 dipper.....	2 mess kit spoons.
Cool water (for onions)..	3	0	1 3/4 dippers.....	9 mess kit spoons.
Lard.....	1	0	1/2 dipper.....	2 1/2 mess kit spoons.
Corned beef.....	18	0	3 6-pound cans....	1/4 6-pound can.
Pepper.....	0	3/4	3 mess kit spoons..	Pinch.

All measurements level unless otherwise stated.
Yield: 100 servings, 8-ounce portions, or approximately 50 pounds.

c. Directions. (1) Soak the potatoes for 20 to 40 minutes and then bring to a boil. Cook until tender. This should require about 45 minutes. Drain off the *surplus water but do not discard it*.

(2) Soak onions for 15 to 20 minutes and bring to a boil. Drain immediately *Do not discard the surplus onion water*.

(3) Fry the drained, reconstituted onions in the lard until they begin to color.

(4) Break up the corned beef and mix with the potatoes. Add the fried onions and then follow with all of the surplus onion water and enough of the potato water to moisten the hash (most of it will be needed).

(5) When cooking small portions, brown the hash in a frying pan on top of the stove until it is crusty. For larger quantities place the hash in a deep Army baking pan and bake in a hot oven for 45 minutes or until a brown crust is formed.

25. VEGETABLE SOUP (MADE WITH DEHYDRATED VEGETABLES AND BEEF SHANK).

a. General. Vegetable soup should be served steaming hot and it should be stirred occasionally while it is being served to prevent the vegetables and meat from settling on the bottom. Slow boiling or simmering will improve the flavor of most soups. Any attempt to rush the cooking by fast boiling will usually result in a poor finished product. When measuring dehydrated vegetables for small portions (using spoons) rounded measurements should be made.

b. Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Beef shank.....	15	0	-----	Small soup bone.
Boiling beef (brisket, neck, or shank meat), fresh or frozen.	10	0	6 dippers.....	Small piece boiling beef.
Water.....	36	0	18 dippers.....	Enough to cover.
Salt.....	0	2	4 mess kit spoons..	Pinch.
Dehydrated:				
Carrots.....	0	12	$\frac{3}{4}$ dipper.....	3 mess kit spoons.
Julienne potatoes..	1	8	2 dippers.....	4 mess kit spoons.
Onions.....	0	6	$\frac{1}{2}$ dipper.....	$1\frac{1}{2}$ mess kit spoons.
Cabbage.....	0	5	1 dipper.....	1 mess kit spoon.
Rice.....	0	12	$\frac{1}{3}$ dipper.....	2 mess kit spoons.
Salt.....	0	3	6 mess kit spoons..	$\frac{1}{2}$ mess kit spoon.
Water.....	18	0	9 dippers.....	1 canteen cup.
Tomatoes.....	13	9	2 No. 10 cans or 7 dippers.	1 No. 2 can or 1 canteen cup.
Pepper.....	0	$\frac{1}{4}$	1 mess kit spoon..	Pinch.

All measurements level unless otherwise stated (note small quantity recipe).

Yield: 100 servings, 10-ounce portions, or approximately 8 gallons or 65 pounds.

c. Directions. (1) Place beef shank, meat, and water in a kettle and add salt. Bring the water to a boil and allow to simmer until meat is tender (about 4 hours for the large batch). Add the second portion of water to all of the other ingredients, mix, and then add to the beef shank, meat, and water mixture. Simmer for another hour. Remove the bone, meat, and excess fat, if any. Cut lean meat in small pieces and return it to the soup.

(2) If available, 5 pounds of dehydrated beef may replace boiling beef and shank.

CHAPTER 5

DESSERTS

	Paragraph
Pies.....	26
Puddings.....	27
Fruit sauces and juices.....	28
Cakes and cookies.....	29

26. PIES.

a. General. Good pies require both crusts and fillings of high quality. Although dehydrated foods are not used in pie crust, this item is of such importance that its production should be carefully controlled. Fillings made from dehydrated fruits and eggs make excellent pies, provided crusts of satisfactory character are made.

b. Pie crusts. (1) General. A good pie crust can be made from flour, lard, salt, and water. Sugar may be added if a brown-colored crust is desired. This is especially important when baking under conditions which produce pale-colored crusts. Lard is recommended as a pie shortening because of the flavor and extra tenderness which it imparts. Water should be used sparingly. It is not always possible to give the exact quantity of water because of variations in flour strength and in temperatures at the time of mixing. Use only the smallest amount of water necessary to hold the dough together. Enough water to produce a soft, sticky dough will make a tough crust.

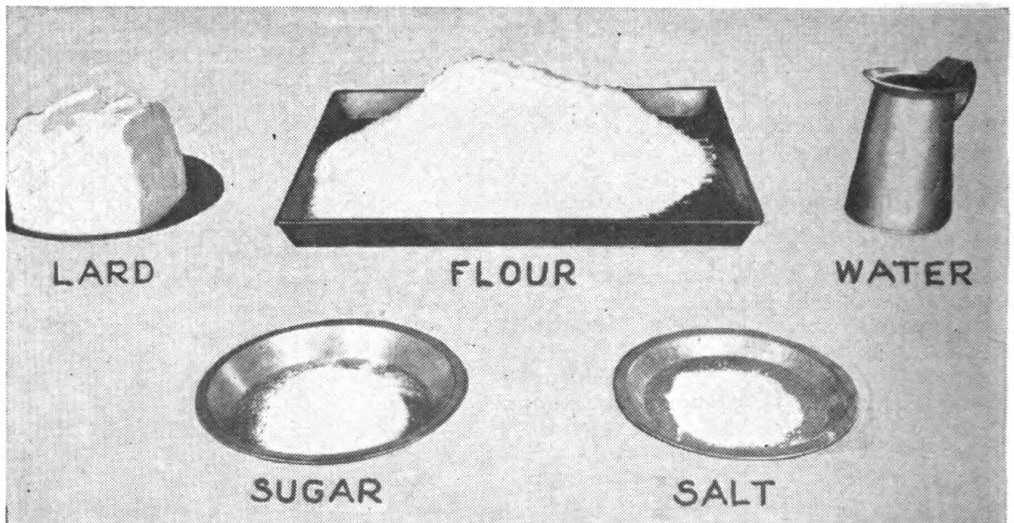


FIGURE 31. *Ingredients for making pie crust*

(2) Dough For Pie Crusts. (a) Formula (for 18 two-crust pies, serving 100 men).

Ingredients	Weight		Approximate volume No. 56 dippers (1 quart), etc.	Method
	Pounds	Ounces		
Step 1:				
Flour.....	7	8	6 dippers.....	Rub together to a fine crumb the size of a pea.
Lard.....	4	4	2 $\frac{1}{8}$ dippers.....	
Step 2:				
Water.....	2	8	1 $\frac{1}{4}$ dippers.....	Dissolve the sugar and salt in the water.
Sugar.....	0	6	12 mess kit spoons..	Add to above and mix just enough to form a dough.
Salt.....	0	3	6 mess kit spoons..	

(b) Directions.

1. Weigh or measure the flour and lard; then place in a mixing bowl. Rub the lard into the flour. Continue rubbing the flour and lard between the fingers and palms of the hands until all the lard particles are reduced to the size of a small pea. The way the flour and lard are mixed determines the degree of tenderness of the finished pie crust and the amount of oven shrinkage it will undergo. If the lard and flour are not mixed enough, a tough crust that shrinks excessively in the oven will result.

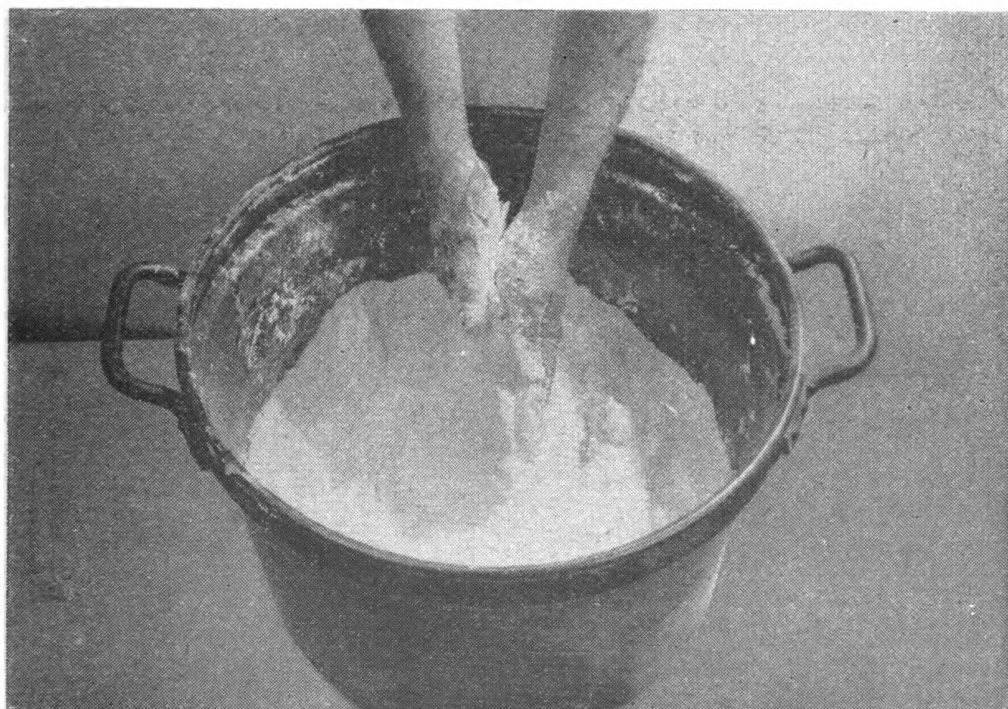


FIGURE 32. *Blending lard with flour.*

2. Dissolve the sugar and salt in the water. Add to the lard and flour mixture. It may be necessary to vary the quantity of water due to difference in flour strength.
3. Mix with the hands, just enough to make a smooth dough
The liquid must be incorporated evenly into the lard and

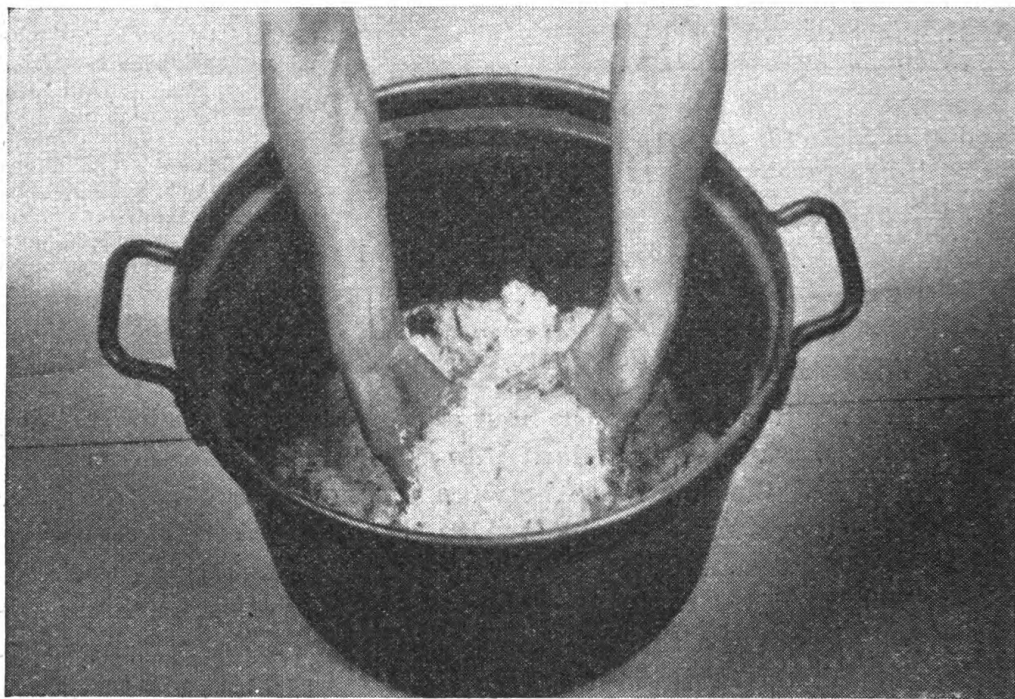


FIGURE 33. *Mixing in the liquid.*

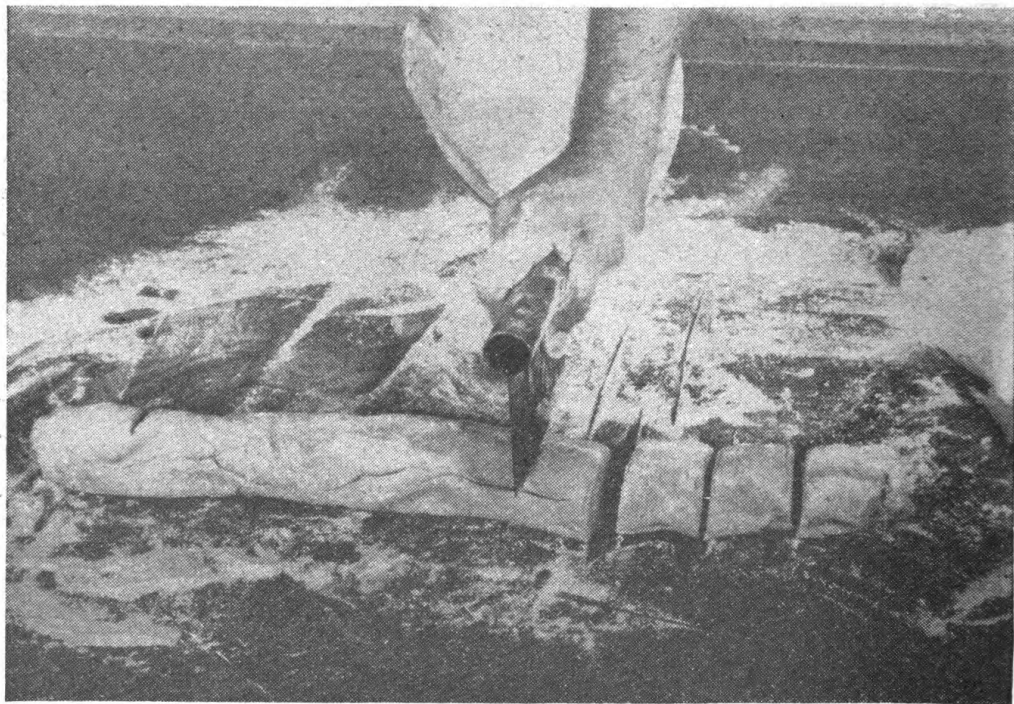


FIGURE 34. *Dividing the dough.*

flour mixture. If the dough is overmixed, the pie crust will be tough. The most satisfactory result will be obtained if the dough is used immediately.

(3) Making Two-Crust Pie. (a) Place a canvas cloth or towel on the workbench and dust it with flour. Then place the pie dough on the dusted cloth. Cut off a piece of dough and roll it into a strip about 3 inches in diameter. Cut into pieces about 8 or 9 ounces in weight.



FIGURE 35. *Rolling out the dough.*

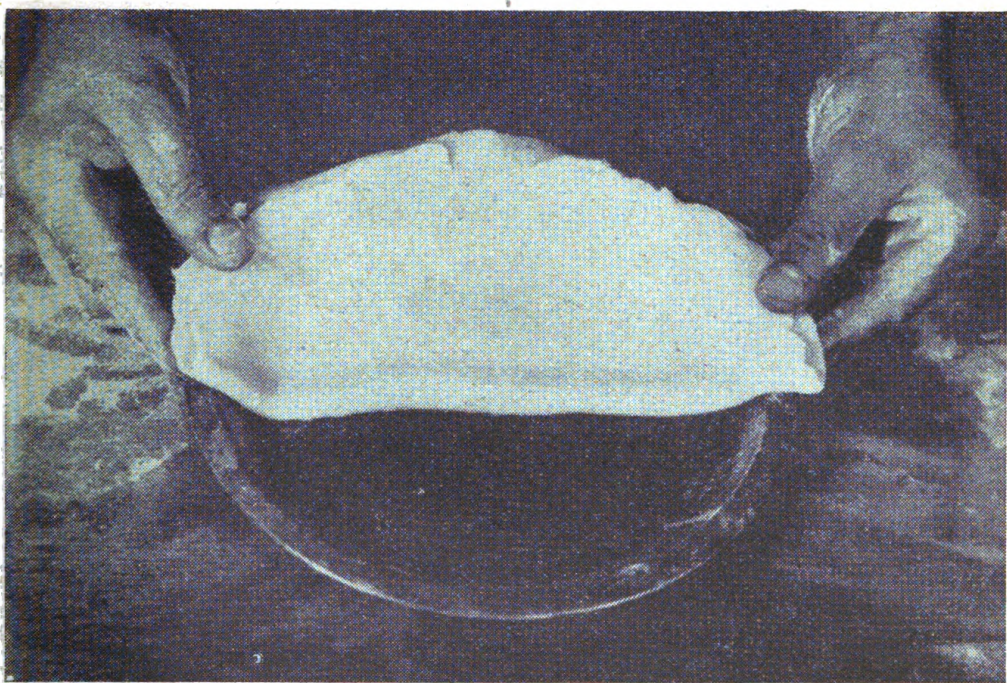


FIGURE 36. *Placing the lower crust in the pan.*

(b) To roll the bottom crust, dust a piece of dough with flour and roll it out until slightly larger than the piepan.

(c) Fold the rolled-out dough in half and place in the piepan. Be sure that the crust fits the pan smoothly so that there are no air pockets underneath the dough.

(d) Wash the outer rim of the bottom crust with water. This is done so that the top and bottom crusts will adhere. A brush may be used or a clean cloth may be folded and dipped into the water.

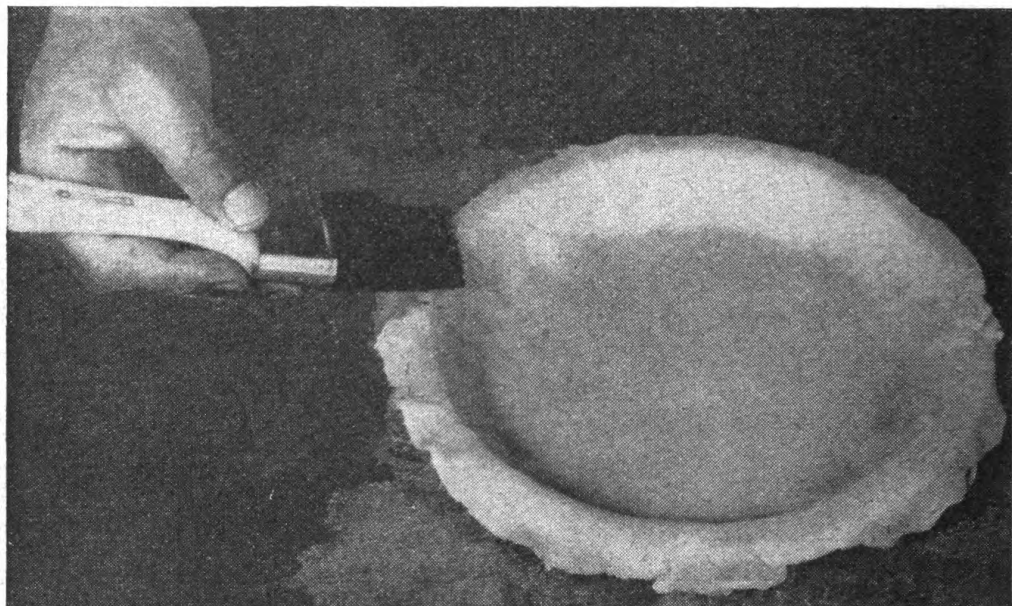


FIGURE 37. *Washing rim of lower crust.*

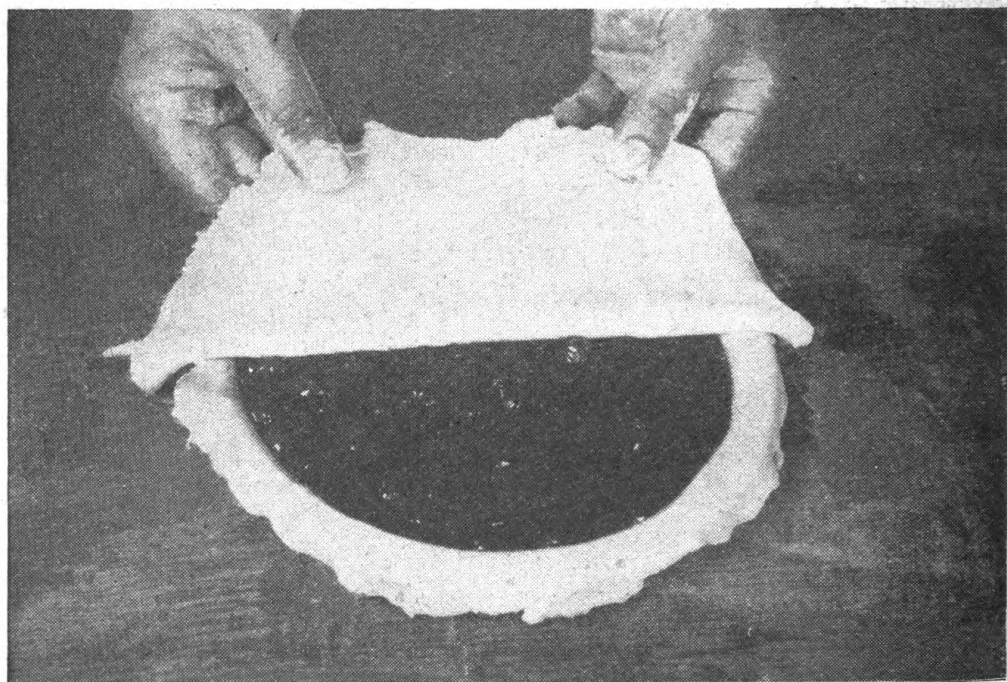


FIGURE 38. *Filling and covering the pie.*

(e) Place about 2 pounds of filling (one No. 56 dipper) in the bottom crust. Roll out the top crust exactly the same as the bottom crust but dock (prick) it in several places to allow steam to escape during baking. Fold the top crust in half and place over the filling. Finish covering the pie.

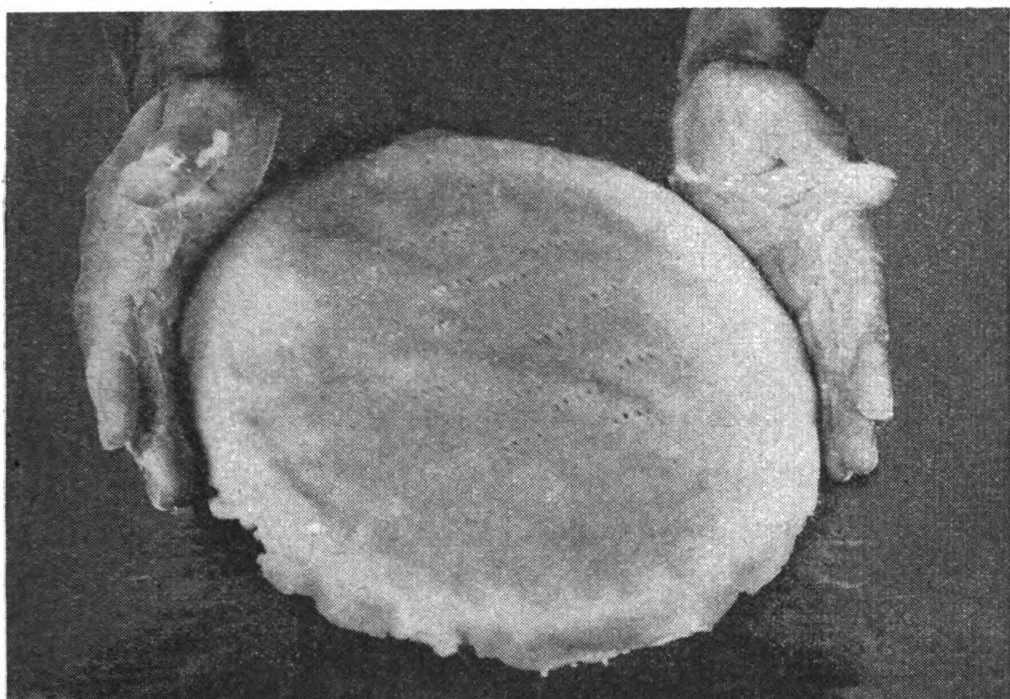


FIGURE 39. *Removing excess dough.*

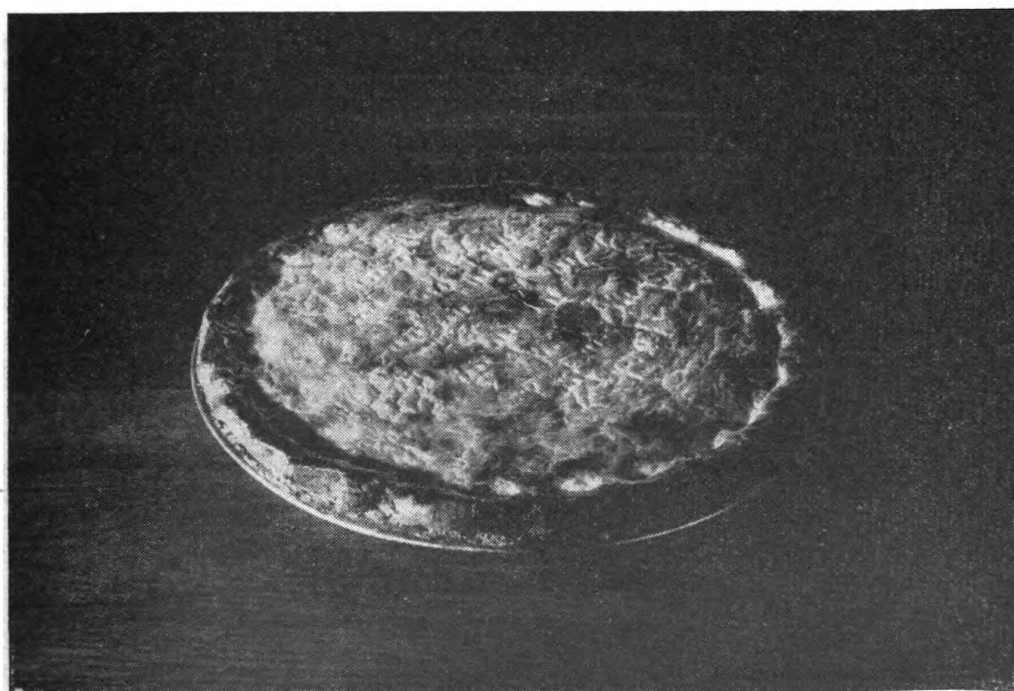


FIGURE 40. *A completed two-crust pie.*

(f) Remove excess dough by pressing with the hands against the rim of the piepan. If desired, the rim of the pie may be crimped with the forefinger and thumb or with a fork. This is not absolutely necessary but it helps to seal the two crusts together. The excess dough should be used as part of the dough of the bottom crust for the next pie. Always use fresh dough for top crust.

(g) Bake the pie in a hot oven (425° to 450° F.) for 40 to 45 minutes. The pie should be removed from the oven just as filling begins to boil.

c. Apple Pie or Cobbler. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated apple nuggets.....	4	0	7 dippers.....	¾ canteen cup.
Water.....	26	0	13 dippers.....	1 dipper.
Sugar.....	4	0	2 dippers.....	10 mess kit spoons.
Cinnamon (optional)....	0	½	2 mess kit spoons..	Pinch.

(2) Directions. (a) Place apple nuggets in water and bring to a boil over a slow fire. Simmer for 20 minutes. Add the sugar and cinnamon.

(b) For cobbler, roll out 4½ pounds (2 dippers) of pie dough to the size of a baking sheet cakepan. Pour 7 dippers of apple pie filling into the pan. Roll out 4 pounds of pie dough and cover the whole baking sheet. Dock the top crust and bake in a hot oven for about 45 minutes. Prepare 2 pans for 100 men.

(c) For pie, prepare a two-crust pie as described in **b** above, and fill with the apple pie filling. Butter and nutmeg may be used to give a superior flavor to both apple and sweetpotato pies.

d. Sweetpotato Pie. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated sweetpotatoes.....	4	2	5½ dippers.....	½ canteen cup.
Water.....	18	0	9 dippers.....	1 canteen cup.
Sugar.....	3	0	1½ dippers.....	8 mess kit spoons.
Evaporated milk.....	3	10	4 14½-ounce cans or 2 dippers.	10 mess kit spoons.
or				
Dehydrated whole milk.....	(1)	(0)	(1 dipper).....	(5 mess kit spoons.)
Water.....	(2)	(8)	(1¼ dippers).....	(6 mess kit spoons.)
Nutmeg (optional).....			To taste.....	To taste.
Pie dough*.....	17	0	8 dippers.....	1½ pounds or 1 canteen cup.

*For pie dough, see **B** above.

(2) Directions. (a) Soak the sweetpotatoes in the water for 20 to 40 minutes. Cook until tender or about 1 hour 20 minutes. When cold, add sugar and reconstituted milk. Roll out pie dough to the size of a large baking sheet cakepan. Pour half of the filling into the pan. Roll out pie dough and cover the whole baking sheet. Dock top crust and bake in hot oven for about 45 minutes.

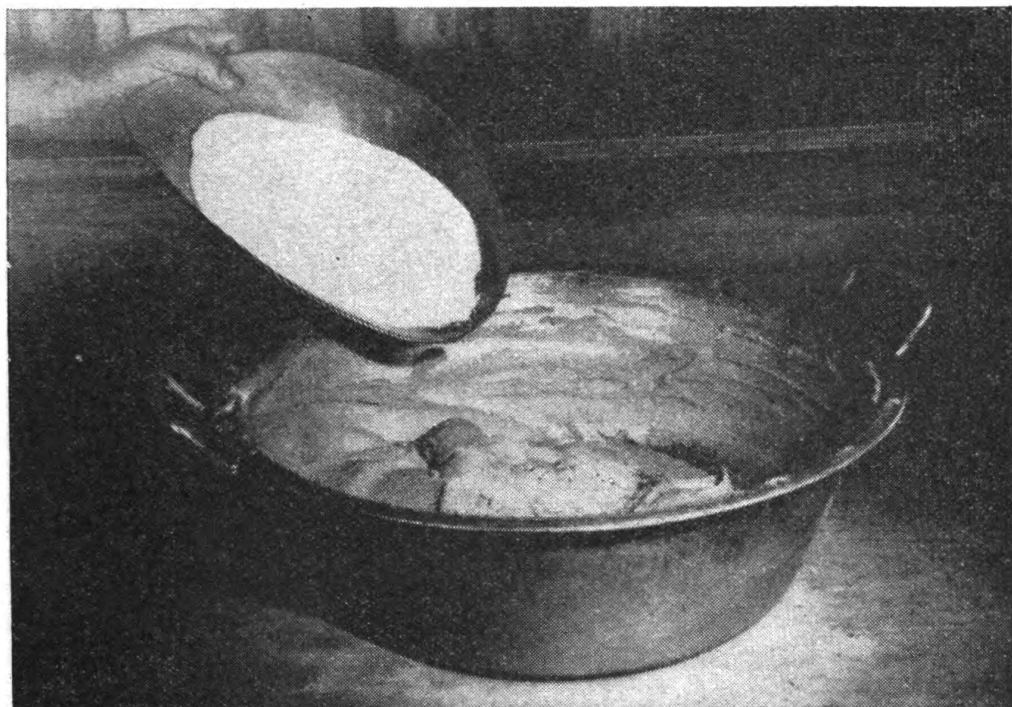


FIGURE 41. *Preparation of filling.*

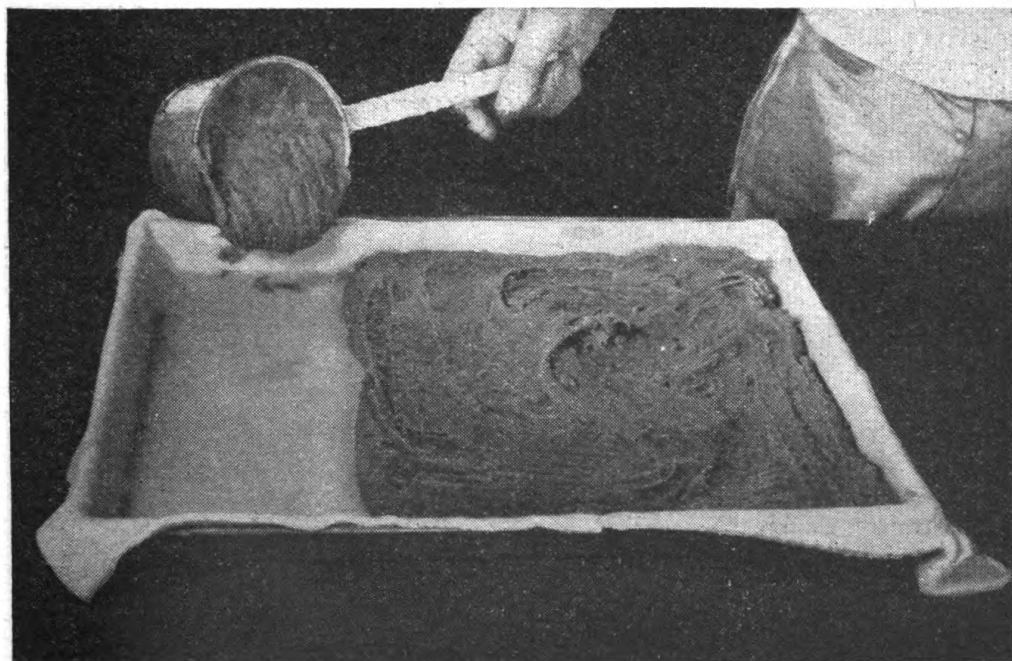


FIGURE 42. *Make-up of pie, cobbler method.*

(b) Sweetpotatoes should be completely reconstituted, that is, cooked until tender and moist. Sugar and milk should be added and the resulting mass mixed to a mushlike consistency.

(c) Roll to the proper shape and coil on rolling pin in order to get the dough on the pan.

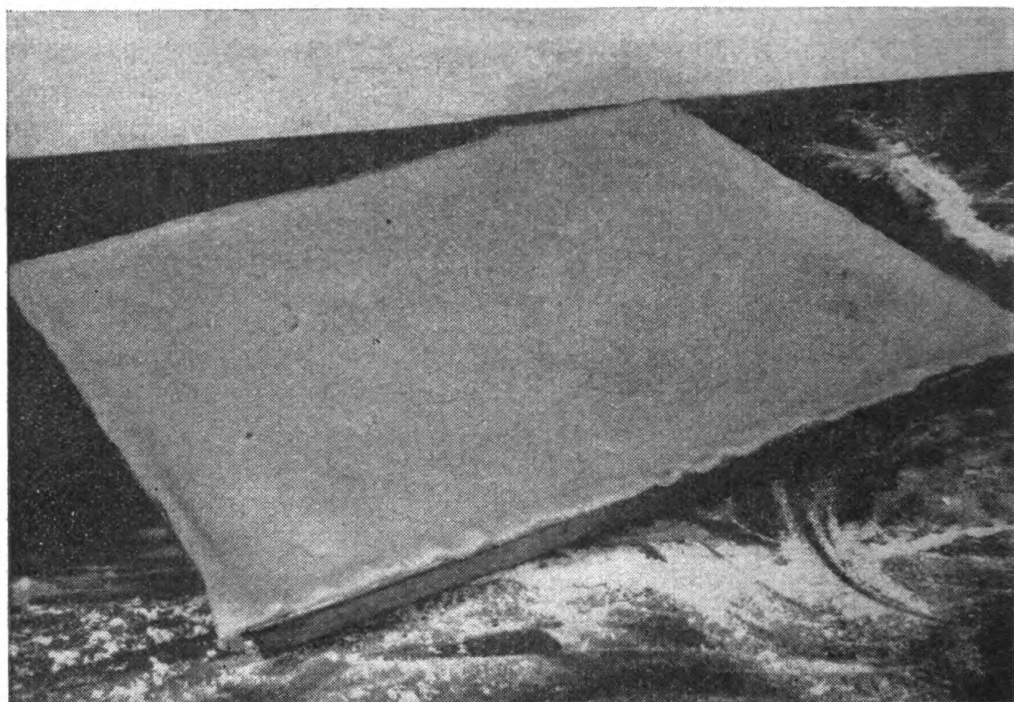


FIGURE 43. *Covering the cobbler.*

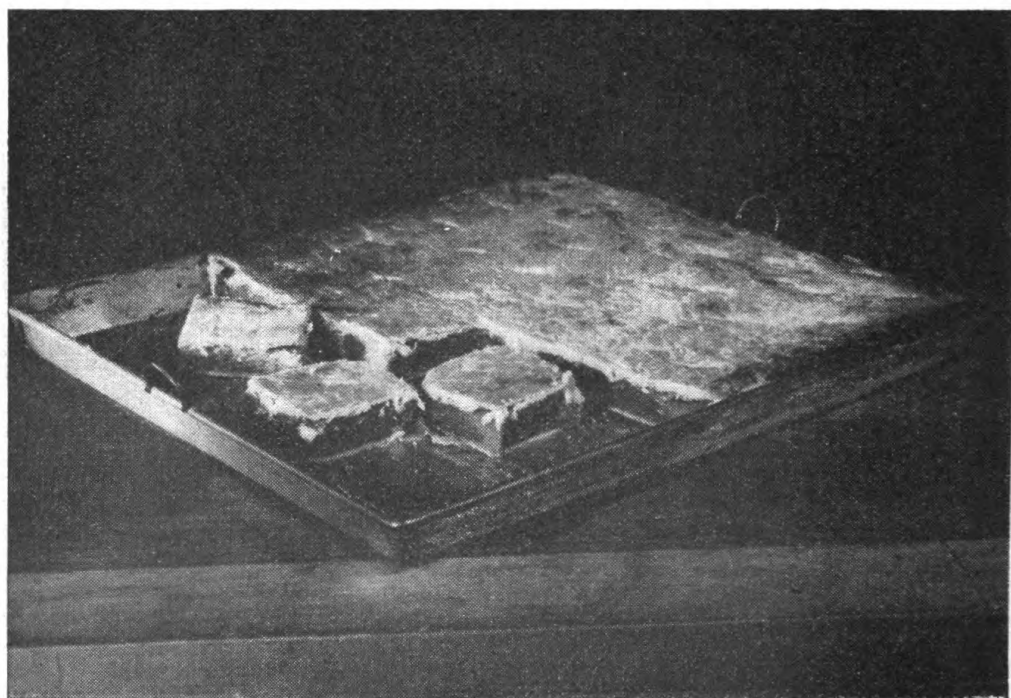


FIGURE 44. *Completed baked sweetpotato pie.*

(d) Cover with a top crust and then punch several holes in the dough to allow steam to escape during baking.

(e) The pie should be well browned on both top and bottom. Doughy crusts are objectionable. The filling of all pies should be moist.

e. Soft Cream Pie Fillings. (1) General. In making this type of filling, the milk or other liquid and the sugar are placed in a kettle and brought to a boil. The dehydrated eggs are stirred into the cornstarch. The water is then added and mixed until a smooth paste is obtained. The egg and cornstarch mixture is then poured into the boiling liquid slowly and stirred constantly until the mixture is thick. Since care must be taken not to scorch the filling, it must be stirred continuously while the starch and eggs are being added. The filling should be thoroughly cool before it is poured into the baked pie shells. *Caution: Soft cream pies, custards, and puddings are highly perishable. Because of the perishable nature of such products they should not be prepared in hot weather unless the strictest precautions can be maintained with regard to cleanliness and standing. Never let them stand more than 2 hours before serving. Under no circumstances should they stand overnight.*

(2) Formula.

Ingredients	Weight		Approximate volume in No. 56 dippers (1 quart), etc., for 20 9-inch pies	Approximate volume for one 9-inch pie
	Pounds	Ounces		
Step 1:				
{ Evaporated milk.....	14	0	15 14½-ounce cans	2/3 14½-ounce can
{ Water.....	14	0	or 7 dippers.	or 1/3 dipper.
{ or			7 dippers.....	1/3 dipper.
{ Dehydrated whole	(4)	(0)	(4 dippers).....	(1 2 mess kit
{ milk.				spoons).
{ Water.....	(24)	(0)	(12 dippers).....	(3/4 canteen cup).
Sugar.....	7	0	3½ dippers.....	11 mess kit spoons.
Salt.....	0	1	2 mess kit spoons..	Pinch.
Step 2:				
Cornstarch.....	1	12	1 1/3 dippers.....	4 mess kit spoons.
Dehydrated whole	1	12	2 dippers.....	5 1/2 mess kits poons.
eggs.				
Water.....	4	8	2 1/4 dippers.....	7 mess kit spoons.
Step 3:				
Butter.....	0	14	1/2 dipper.....	1 1/2 mess kit spoons.
Vanilla.....			To taste.....	To taste.

(3) Directions. (a) Bring reconstituted milk, sugar, and salt to a boil.

(b) Mix dehydrated eggs and cornstarch together. Add water slowly to the mixture and stir vigorously to prevent lumps. Pour into the boiling milk solution and stir vigorously until it thickens.

(c) Add butter and vanilla and allow it to cool until it is lukewarm.

Place one dipper of filling in each baked pie shell. Top with meringue if fresh eggs are available. Bake to a delicate brown.

f. Vanilla cream slices (Napoleons). (1) **General.** The Napoleon is one of the popular desserts that can be made by using the cream pie filling described in above.

(2) **Instructions.** (a) Roll pie dough to the size of a large

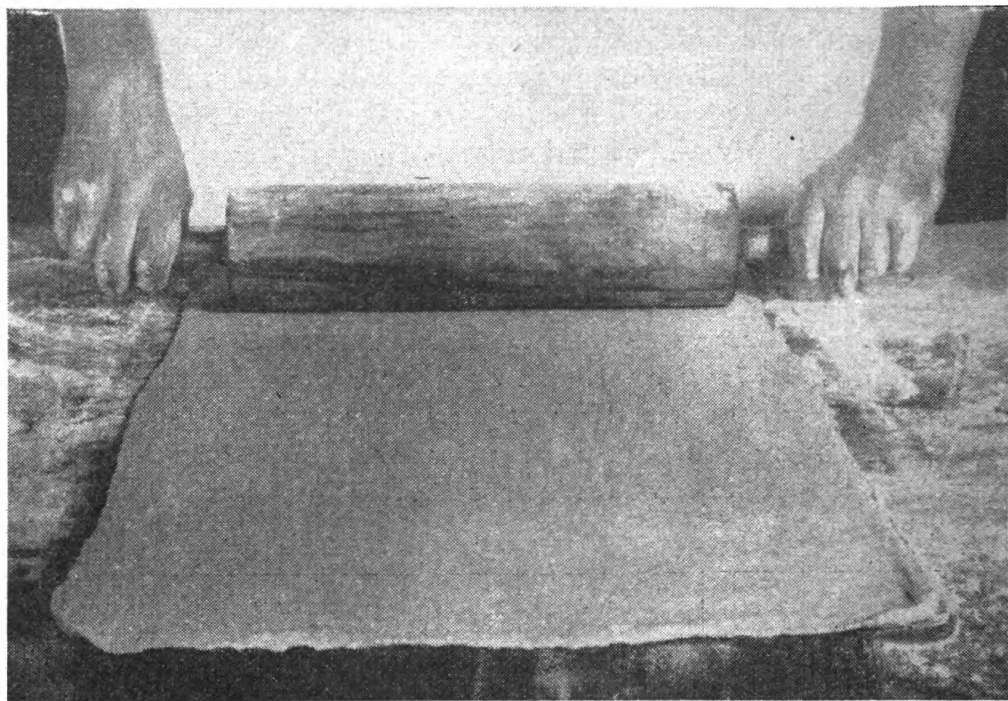


FIGURE 45. *Rolling pie dough.*

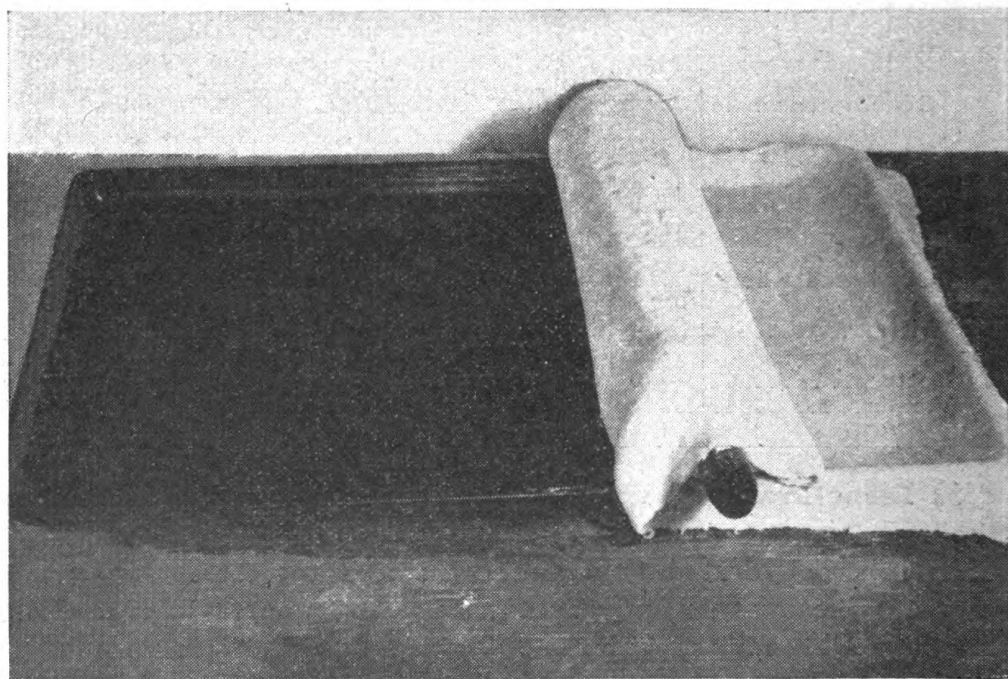


FIGURE 46. *Placing dough on the pan.*

baking sheet. Approximately $4\frac{1}{2}$ pounds of pie dough are required. Roll one sheet for the bottom and one sheet for the top. Dock with a fork and bake until crisp and brown. Prepare two pans for 100 men.

(b) After rolling to the proper thickness, coil pie dough around the rolling pin. Place on the pan and unroll.

(c) The baked pastry should be golden brown and free from blisters. Unless it is properly docked, it will not bake to a uniform appearance and shape.

(d) Fill the pie shell with vanilla cream filling. The filling should

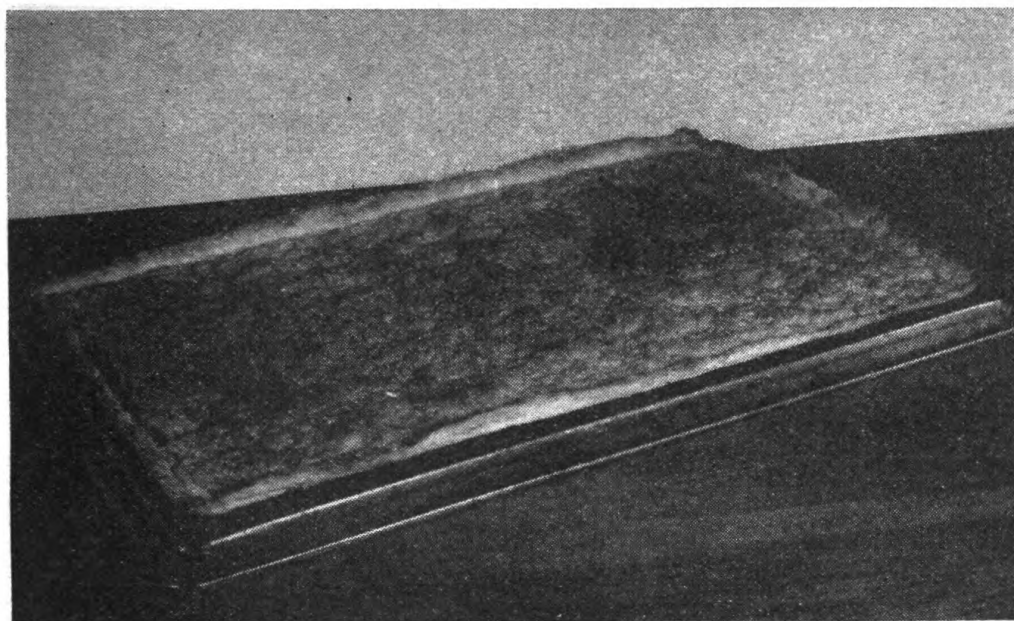


FIGURE 47. *The baked pastry shell.*

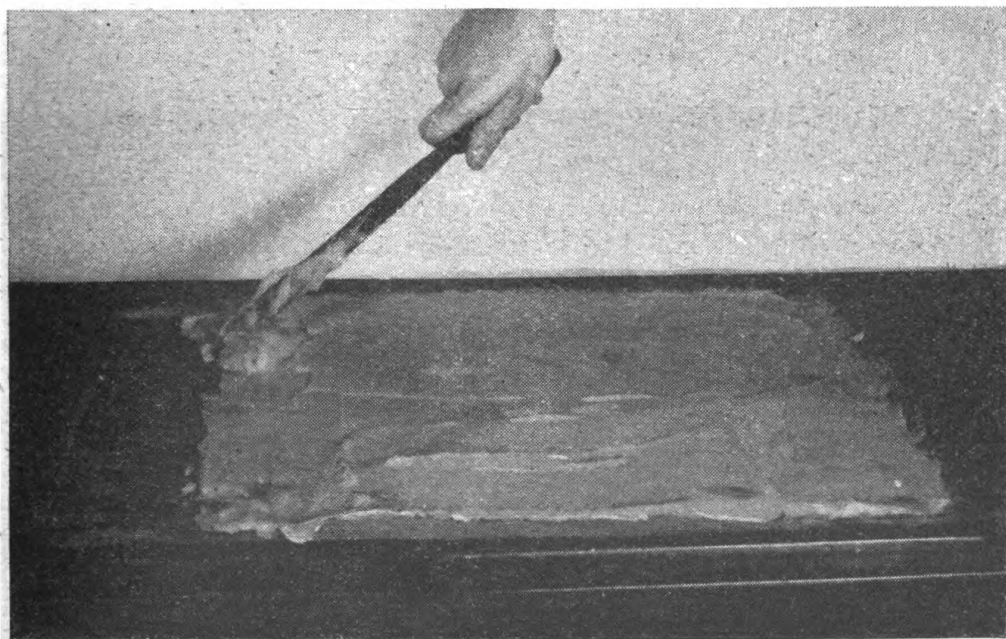


FIGURE 48. *Filling the cream slice.*

be poured to a thickness of $\frac{1}{2}$ inch. Fresh fruit of any type may be added at this stage if desired.

(e) The second layer of the baked pie shell should be placed on top of the cream filling. The completed slice should be chilled if refrigeration is available.

(f) The completed cream slice may either be served plain or it may

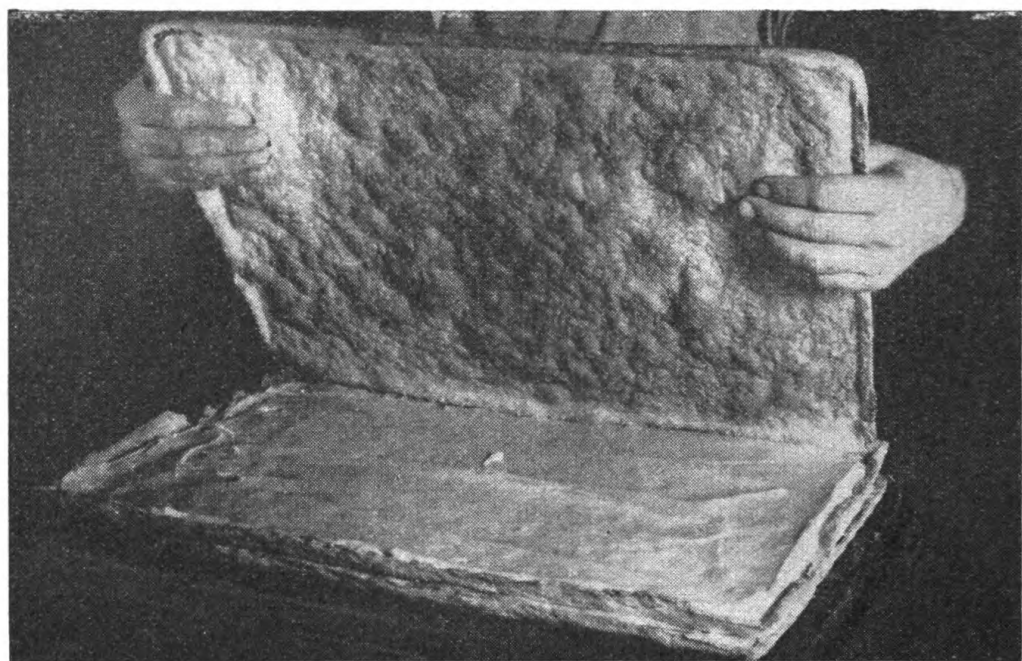


FIGURE 49. *Topping the cream slice.*

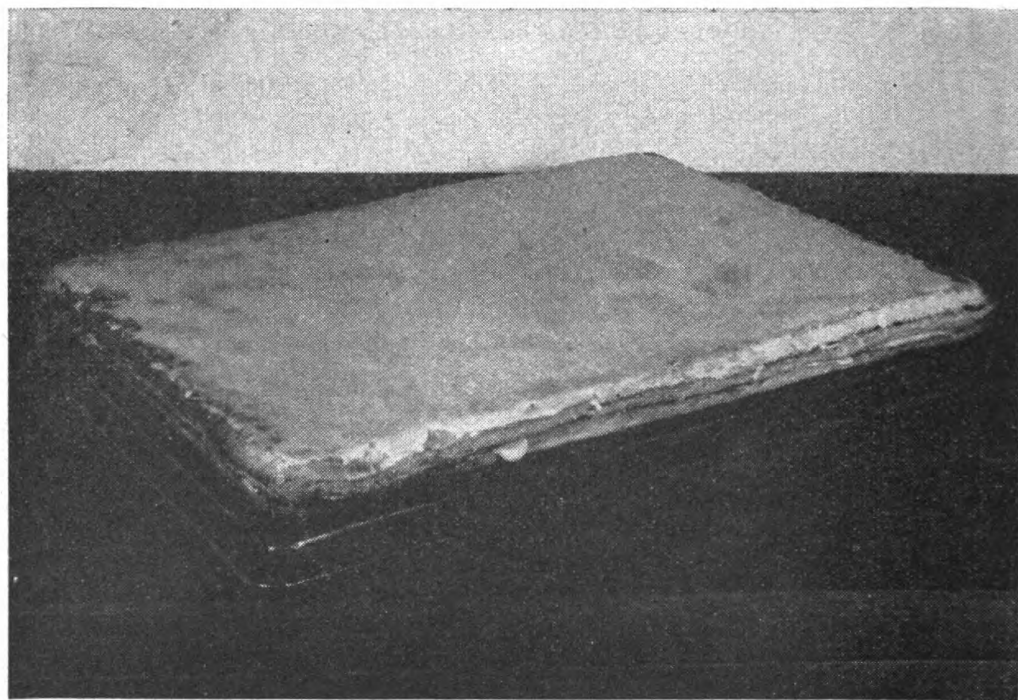


FIGURE 50. *The completed cream slice.*

be finished with water icing, made by mixing together powdered sugar (six dippers) and water (two-thirds dipper). Flavor to taste.

g. Pumpkin pie. (1) Formula (enough for eighteen 9-inch pies).

Ingredients	Weight		Approximate volume in No. 56 dippers (1 quart), etc.	Approximate volume for one 9-inch pie
	Pounds	Ounces		
Step 1:				
Brown sugar-----	6	8	3¾ dippers-----	¼ canteen cup.
Cinnamon-----	0	1½	6 mess kit spoons--	Pinch.
Nutmeg-----	0	½	2 mess kit spoons--	Small pinch.
Salt-----	0	1	2 mess kit spoons--	Pinch.
Step 2:				
Dehydrated eggs---	1	0	1 dipper-----	3 mess kit spoons.
Water-----	2	8	1¼ dippers-----	4 mess kit spoons.
Step 3:				
Pumpkin-----	13	0	2 No. 10 cans or 6½ dippers.	1 No. 2 can or ⅔ canteen cup.
Step 4:				
{ Evaporated milk--	6	8	7 14½-ounce cans or 3¼ dippers.	½ 14½-ounce can or ⅓ canteen cup.
{ Water-----	6	14	3¼ dippers-----	¼ canteen cup.
or				
{ Dehydrated whole	(1)	(12)	(1¾ dippers)-----	(6 mess kit spoons).
{ milk.				
{ Water-----	(11)	(8)	(5¾ dippers)-----	(½ canteen cup).

(2) Directions. (a) Sift or blend dry ingredients together.

(b) Add part of the water to the eggs and mix to a smooth paste. Add the remainder of the water and mix smooth. Stir eggs into the sugar-spice mixture and beat well.

(c) Add pumpkin to egg-sugar mixture. Stir thoroughly until entirely free of lumps.

(d) Stir reconstituted milk into pumpkin mixture. Mix well just before using to keep the pumpkin in suspension.

(e) Pour into unbaked pie shells and bake in hot oven until the filling sets.

h. Custard-Type Pie Filling. (1) General. (a) Custard-type pie fillings usually are made by placing sugar, salt, and spice in a mixing bowl, adding reconstituted dehydrated eggs, and stirring briskly with a wire whip to dissolve the sugar. The reconstituted milk is then added and stirred well. When used, the melted butter is now added. This filling should be allowed to set long enough to work off the foam which has been developed during mixing. Otherwise, if the pie shells are filled and baked immediately, an undesirable surface will result on the finished pie.

(b) In making pumpkin pie, the pumpkin is added after the eggs have been mixed with the sugar.

Caution: Custards are highly perishable. Never allow them to stand more than 2 hours before serving. Under no circumstances should they stand overnight.

(2) Formula (enough for eighteen 9-inch pies).

Ingredients	Weight		Approximate volume in No. 56 dippers (1 quart), etc.	Approximate volume for one 9-inch pie
	Pounds	Ounces		
Step 1:				
Sugar-----	6	0	3 dippers-----	1/3 canteen cup.
Salt-----	0	1/2	1 mess kit spoon--	Pinch.
Step 2:				
Dehydrated eggs---	2	8	3 dippers-----	8 mess kit spoons.
Water-----	5	0	2 1/2 dippers-----	1/4 canteen cup.
Step 3:				
{ Evaporated milk..	11	0	12 14 1/2-ounce cans or 5 1/2 dip- pers.	2/3 14 1/2-ounce can or 1/2 canteen cup.
{ Water-----	13	0	6 1/2 dippers-----	1/3 canteen cup.
or				
{ Dehydrated whole milk	(3)	(0)	(3 dippers)-----	(10 mess kit spoons).
{ Water-----	(21)	(0)	(10 1/2 dippers)---	(1/2 canteen cup).
Vanilla-----			To taste-----	To taste.
Butter (melted)---	0	6	12 mess kit spoons--	1/2 mess kit spoon.
Nutmeg-----			To taste-----	To taste.

(3) Directions. (a) Sift or blend dry ingredients together.

(b) Mix the dehydrated eggs with the water. Be sure a smooth mixture is obtained. Add to the dry ingredients and mix smooth.

(c) Mix the reconstituted milk, vanilla, butter, and nutmeg thoroughly. Add slowly to the egg mixture, and mix well. Place unbaked pie shells in oven and into each pour one No. 56 dipper of filling.

27. PUDDINGS.

a. Bread and Raisin Pudding. (1) Formula.

Ingredients	For 100 men			For 8 men, approx- imate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated whole eggs--	1	0	1 dipper-----	5 mess kit spoons.
Water-----	2	0	1 dipper-----	5 mess kit spoons.
{ Evaporated milk-----	8	0	9 14 1/2-ounce cans or 4 dippers.	1/2 canteen cup.
{ Water-----	16	0	8 dippers-----	1 canteen cup.
or				
{ Dehydrated whole milk.	(2)	(4)	(2 1/2 dippers)-----	(11 mess kit spoons).
{ Water-----	(21)	(0)	(10 1/2 dippers)---	(1 canteen cup).
Granulated sugar-----	6	0	3 dippers-----	1/3 canteen cup.
Bread-----	5	0	16 dippers-----	1 1/2 canteen cups.
Raisins-----	3	0	2 dippers-----	1/4 canteen cup.
Vanilla-----	0	2	4 mess kit spoons--	To taste.

All measurements level unless otherwise stated.

Yield: 100 servings, 6 1/2-ounce portions, or approximately 40 pounds.

(2) Directions. (a) Add part of the water to the dehydrated eggs to make a paste. Add remainder of the water and mix smooth. Stir vigorously to prevent lumping.

(b) Heat reconstituted milk until lukewarm and then dissolve the sugar in it. Pour over the egg solution and stir briskly.

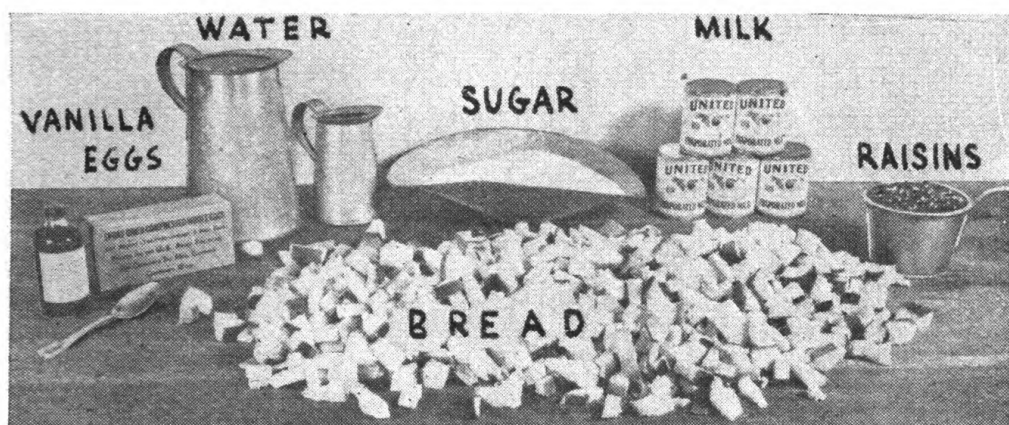


FIGURE 51. *Ingredients for bread and raisin pudding.*

(c) Cut or tear the bread into small cubes or pieces (dry bread is best). Pour the warm egg solution over the bread and stir until it is well soaked (10 to 15 minutes). Add the raisins and vanilla. Pour into a large Army baking pan.

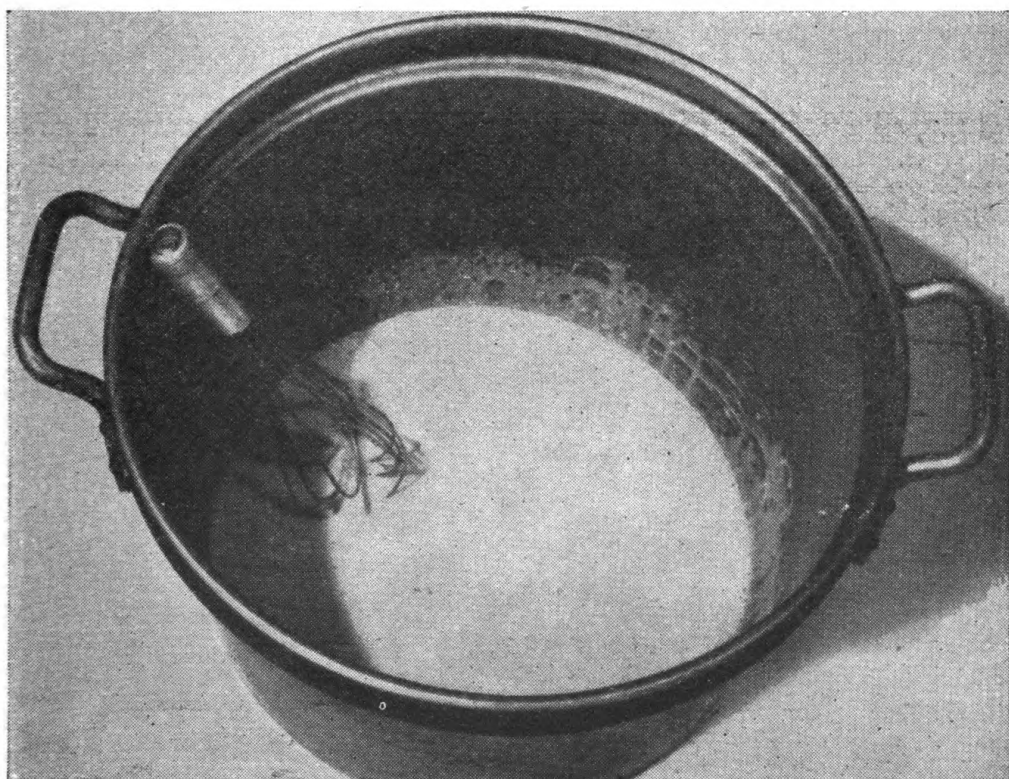


FIGURE 52. *Mixing eggs and water.*

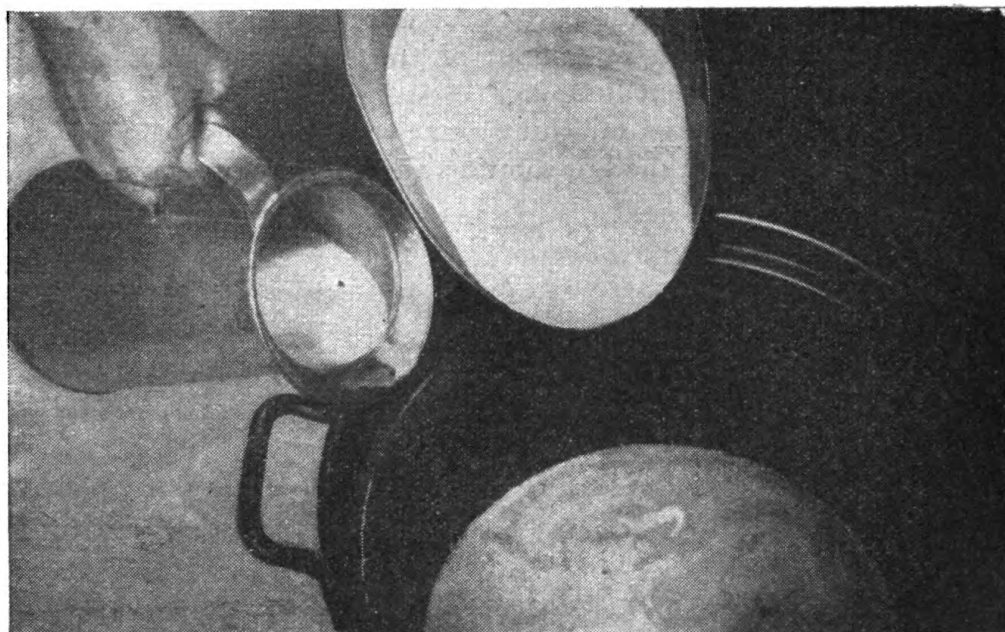


FIGURE 53. *Adding sugar and milk.*

(d) The pudding should be baked until it is firm and golden brown (approximately 40 minutes to 1 hour). If the oven is too hot, the pudding should be stirred once or twice to prevent scorching. Bake at 350° F.

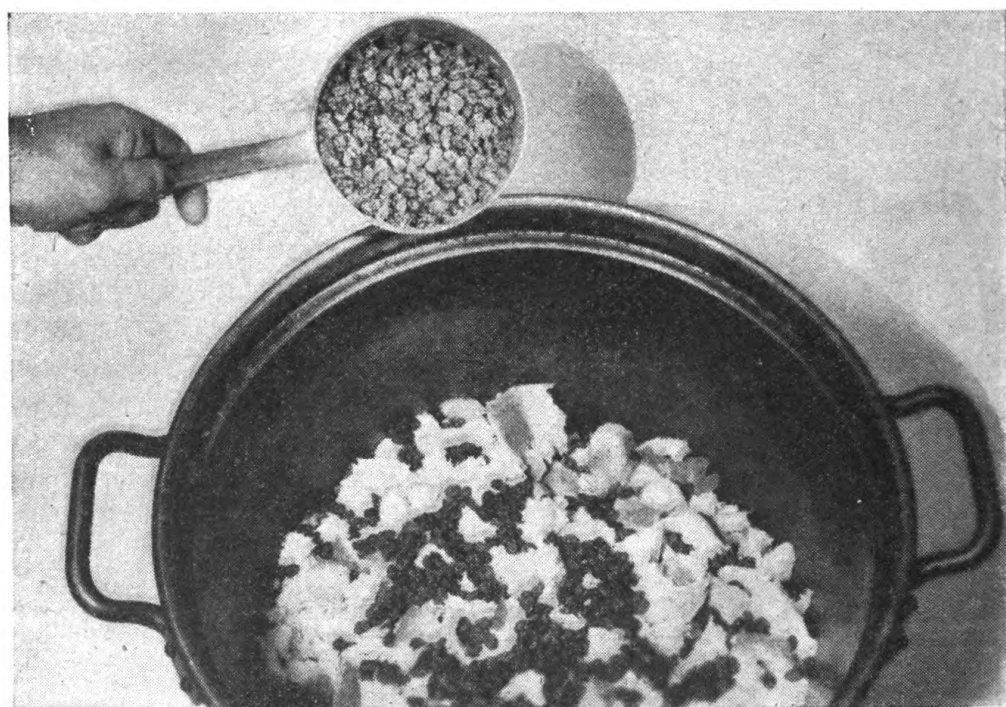


FIGURE 54. *Adding bread and raisins.*

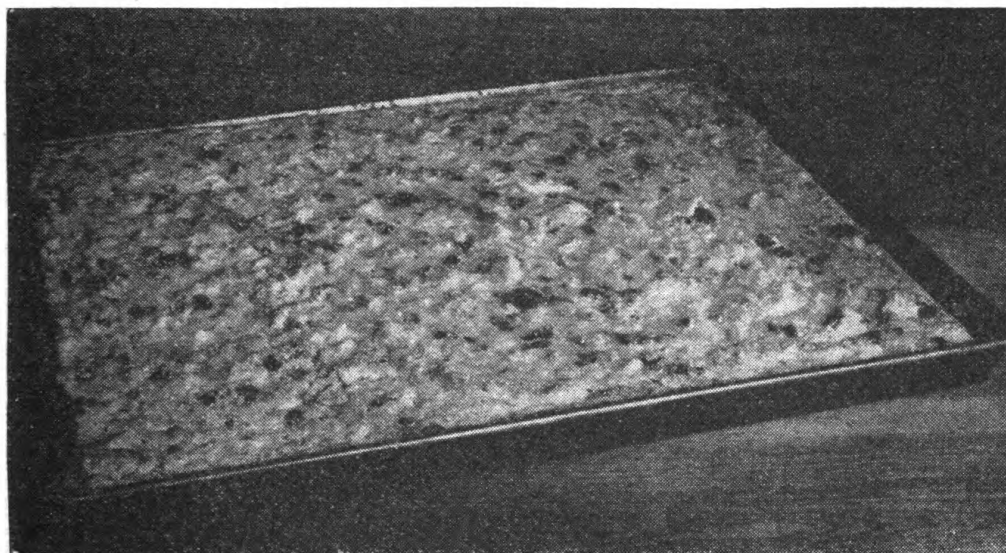


FIGURE 55. *Finished bread pudding.*

Caution: Do not hold overnight.

b. Rice Pudding With Raisins. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Water.....	24	0	12 dippers.....	1 dipper.
Salt.....	0	1½	3 mess kit spoons..	Pinch.
Rice.....	3	8	1¾ dippers.....	½ pound or ⅓ dipper.
Water.....	5	8	2¾ dippers.....	⅓ canteen cup.
Dehydrated whole eggs..	2	0	2⅓ dippers.....	10 mess kit spoons.
{Water.....	11	0	5½ dippers.....	⅔ canteen cup.
{Evaporated milk.....	5	0	6 14½-ounce cans or 2½ dippers.	½ 14½-ounce can or ¼ canteen cup
or				
{Dehydrated whole milk..	(1)	(8)	(1½ dippers).....	(8 mess kit spoons).
{Water.....	(14)	(8)	(7¼ dippers).....	(¾ canteen cup).
Sugar.....	3	8	1¾ dippers.....	9 mess kit spoons.
Raisins.....	2	0	1⅓ dippers.....	10 mess kit spoons.
Vanilla.....			To taste.....	To taste.

Yield: 100 servings, 6-ounce portions, or approximately 36 pounds.

(2) Directions. (a) Bring the salted water to a boil. Add rice and cook about 20 minutes or until tender. Drain and cool.

(b) Add the 5 pounds 8 ounces of water to the eggs and mix to a smooth paste. Add the reconstituted milk, sugar, and raisins and stir well.

(c) Add the cooked and drained rice and the vanilla. Stir until well mixed.

(d) Pour the entire mass into a deep baking pan and bake at a moderate temperature until set.

Caution: Do not hold overnight.

28. FRUIT SAUCES AND JUICES.

a. Apple Sauce. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated apple nuggets.	3	8	6 dippers-----	1/2 dipper.
Water-----	25	0	12 1/2 dippers-----	1 dipper.
Sugar-----	2	8	1 1/4 dippers-----	6 mess kit spoons.
Cinnamon-----	0	1/2	2 mess kit spoons--	Pinch.
or				
Nutmeg-----	0	1/2	2 mess kit spoons--	Pinch.

(2) Directions. (a) Place dehydrated apples and water in a kettle, bring to a boil, and let simmer for about 20 minutes.

(b) Add sugar and let simmer for 10 minutes more. Spices may be added if desired.

b. Cranberry sauce. (1) Prepared From Dehydrated Sliced Cranberries. (a) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated sliced cranberries.	1	0	1 3/4 dippers-----	9 mess kit spoons.
Water-----	12	0	6 dippers-----	1/2 dipper.
Sugar-----	7	0	3 1/2 dippers-----	1/4 dipper.

Yield: 100 servings, one-fourth cup each.

(b) Directions.

1. Add water to dehydrated cranberries and bring to a boil while stirring. Simmer about 6 minutes, or until tender.

2. Add sugar and boil 8 minutes, stirring gently. Serve cold.

(2) Prepared From Dehydrated Cranberry Powder. (a) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated cranberry powder.	1	0	1 dipper-----	5 mess kit spoons.
Sugar-----	8	8	4 1/4 dippers-----	1/3 canteen cup.
Water-----	14	0	7 dippers-----	3/4 canteen cup.

Yield: 100 servings, one-fourth cup each.

(b) Directions.

1. Mix powdered cranberries with sugar; stir until thoroughly combined.
2. Add water and bring to a boil, stirring gently. Boil 1 to 2 minutes.
3. Pour into pans to cool.

c. Cranberry Juice. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Dehydrated cranberry powder.	1	0	1 dipper-----	5 mess kit spoons.
Sugar-----	4	0	2 dippers-----	1/4 canteen cup.
Salt-----	0	1 1/4	1 mess kit spoon--	Pinch.
Water-----	40	0	20 dippers-----	1 3/4 dippers.

(2) Directions. (a) Thoroughly mix powdered cranberries with sugar; add salt.

(b) Add water gradually and bring to a full boil, stirring constantly.

(c) Cool; serve ice cold for best flavor.

29. CAKES AND COOKIES.**a. Yellow Layer Cake. (1) Formula (3 sheet pans, 100 men).**

Ingredients	Weight		Approximate volume in No. 56 dippers (1 quart), etc.
	Pounds	Ounces	
Step 1:			
Flour-----	3	0	2 1/2 dippers.
Lard-----	2	0	1 dipper.
Step 2:			
Sugar-----	7	4	3 3/4 dippers.
Flour-----	2	8	2 dippers.
Salt-----	0	2	4 mess kit spoons.
Baking powder-----	0	4	8 mess kit spoons.
{ Evaporated milk-----	1	6	1 1/2 14 1/2-ounce cans or
{ Water-----	1	6	3/4 dipper.
or			
{ Dehydrated whole milk---	(0)	(6)	(1/3 dipper).
{ Water-----	(2)	(8)	(1 1/2 dippers).
Step 3:			
Dehydrated eggs-----	0	10	3/4 dipper.
Water-----	1	8	3/4 dipper.
Step 4:			
Water-----	1	14	1 dipper.
Vanilla-----			To taste.

(2) Directions. (a) Place flour and lard in mixing bowl and mix until light and fluffy.

(b) Add items in step 2 of formula to the flour and lard and mix until smooth. Keep sides of mixing bowl scraped down thoroughly during mixing. Mix until light and smooth.

(c) Reconstitute eggs until smooth. Add to above in four parts. Mix until smooth and light after each addition of egg solution.

(d) Add water and vanilla and mix well. Measure three to four dippers of batter into each greased and flour-dusted or paper-lined sheet cakepan. Bake in a medium oven.

b. Devil's Food Cake. (1) Formula (makes 3 sheet pans; serves 100 men).

Ingredients	Weight		Approximate volume in No. 56 dippers (1 quart), etc.
	Pounds	Ounces	
Step 1:			
Flour.....	3	0	2¼ dippers.
Lard.....	2	0	1 dipper.
Step 2:			
Sugar.....	7	0	3½ dippers.
Flour.....	2	0	1⅔ dippers.
Salt.....	0	1½	3 mess kit spoons.
Soda.....	0	1¼	2½ mess kit spoons.
Baking powder.....	0	3¼	6½ mess kit spoons.
Cocoa.....	1	4	1½ dippers.
Water.....	2	8	1¼ dippers.
Step 3:			
Dehydrated eggs.....	1	2	1¼ dippers.
Water.....	3	0	1½ dippers.
Step 4:			
Water.....	1	8	¾ dipper.
Vanilla.....	0	-----	To taste.

(2) Directions. (a) Place flour and lard in mixing bowl and stir until smooth and fluffy.

(b) Add items in step 2 of formula and mix thoroughly. Scrape down mixing bowl to insure a smooth batter.

(c) Reconstitute the eggs and stir until smooth. Add in four parts, mixing until smooth after each addition of egg solution.

(d) Add water and vanilla and mix thoroughly. Measure out the batter into three greased and flour-dusted or paper-lined sheet cakepans. It takes about three to four No. 56 dippers of batter per pan. Bake 28 to 30 minutes in moderate oven.

c. Baking Powder French Coffee Cake. (1) Formula.

Ingredients	For 100 men			Approximate volume for 1 cake
	Pounds	Ounces	Approximate volume in No. 56 dipper (1 quart), etc.	
Lard.....	2	8	1¼ dippers.....	8 mess kit spoons.
Sugar.....	4	8	2¼ dippers.....	⅓ canteen cup.
Dehydrated whole eggs.	1	0	1 dipper.....	6 mess kit spoons.
Water.....	2	12	1¼ dippers.....	8 mess kit spoons.
Salt.....	0	1	2 mess kit spoons.....	Pinch.
Vanilla.....	0	1	2 mess kit spoons.....	To taste.
{ Evaporated milk.....	1	0	1 14½-ounce can or ½ dipper.	4 mess kit spoons.
{ Water.....	2	0	1 dipper.....	6 mess kit spoons.
or				
{ Dehydrated whole milk.	(0)	(4)	(¼ dipper).....	(2 mess kit spoons.)
{ Water.....	(2)	(11)	(2⅓ dippers).....	(11 mess kit spoons.)
Flour.....	5	8	4½ dippers.....	⅓ canteen cup.
Baking powder.....	0	3	6 mess kit spoons.....	1 mess kit spoon.
Raisins.....	2	0	1⅓ dippers.....	⅓ canteen cup.
Water.....	0	8	¼ dipper.....	

(2) Directions. (a) Mix lard and sugar until smooth and fluffy.

(b) Add the reconstituted eggs and mix well.

(c) Add salt, vanilla, and reconstituted milk and stir.

(d) Add flour and baking powder and mix well.

(e) Last add raisins which have been soaked in the 8 ounces of water.

(f) Divide in 2 baking sheet cakepans and bake until golden brown.

d. Spice Cookies. (1) Formula.

Ingredients	For 100 men			For 8 men, approximate volume
	Pounds	Ounces	Approximate volume in No. 56 dippers (1 quart), etc.	
Flour, sifted.....	3	0	3 dippers.....	⅓ dipper.
Baking powder.....	0	1⅛	3 mess kit spoons.....	¼ mess kit spoon.
Salt.....	0	½	1 mess kit spoon.....	Pinch.
Cinnamon.....	0	½	2 mess kit spoons.....	Pinch.
Nutmeg.....	0	¼	1 mess kit spoon.....	Pinch.
Shortening.....	1	8	1 canteen cup.....	4 mess kit spoons.
Sugar.....	2	12	1¾ dippers.....	⅓ canteen cup.
Dehydrated eggs.....	0	3	12 mess kit spoons.....	1 mess kit spoon.
Water (for eggs).....	0	6	12 mess kit spoons.....	1 mess kit spoon.
Vanilla.....	0	½	1 mess kit spoon.....	To taste.
Water.....	1	8	1 canteen cup.....	4 mess kit spoons.

Yield: 200 cookies, each 3½ inches in diameter.

(2) Directions. **(a)** Sift flour with baking powder, salt, cinnamon, and nutmeg.

(b) Stir shortening and sugar together until light and fluffy.

(c) Reconstitute eggs and add to shortening and sugar.

(d) Add vanilla.

(e) Add flour mixture and water alternately, mixing well after each addition.

(f) Drop by spoonfuls onto greased baking sheets.

(g) Bake in a moderate oven (375° F.) for 12 to 15 minutes.

APPENDIX I

TABLE OF WEIGHTS AND MEASURES

[Expressed in terms of No. 56 or quart dipper and mess kit spoon*.]

Ingredients	Average weight per No. 56 (quart) dipper		Average weight per mess kit spoon
	Pounds	Ounces	Ounce
Apple nuggets		9½	
Bacon (diced)	1	8	
Baking powder			½
Bread crumbs (dry)	1		
Beans, baked (dehydrated)	1	4	
Beets (dehydrated)		14	
Butter (solid pack)	2		
Cabbage (dehydrated)		4	
Carrots (dehydrated)	1		
Cinnamon (ground)			¼
Cocoa		13	
Cornstarch	1	5	⅓
Cranberries, powdered (dehydrated)	1		
Cranberries, sliced (dehydrated)		9	
Eggs, whole (dehydrated)		14	¼
Flour (not sifted)	1	4	
Flour (sifted)	1		
Hominy (dehydrated)	1	1	
Lard (solid packed)	2		
Milk, whole (dehydrated)	1		¼
Milk (evaporated)	2		
Nutmeg			¼
Onions (dehydrated)		10	⅓
Pepper			¼
Potatoes (dehydrated, julienne strips)		11	
Potatoes (precooked shreds)		10	
Potatoes, sweet (dehydrated)		12	
Raisins (dry, seedless)	1	8	
Rice	2	4	
Salt			½
Sugar, brown	1	12	
Sugar, granulated	2		½
Soda, baking			½
Turnips (dehydrated)		10	
Vanilla			½
Vinegar	2		½
Water	2	2	½

*All dehydrated food weights as measured in mess-kit spoons are for rounded or heaping spoons.

APPENDIX II

MILK SUBSTITUTION TABLE

Fresh liquid	Evaporated				Dehydrated whole dry				Dehydrated skim dry			
	Cans		Water		Powder		Water		Powder		Water	
	14½ ounces	8 pounds (1 gal- lon)	No. 56 dip- per	No. 55 dip- per	Pounds	Ounces	No. 56 dip- per	No. 55 dip- per	Pounds	Ounces	No. 56 dip- per	No. 55 dip- per
1 quart	1			½		4	1			4	1	
1 gallon	4		2		1		4			12	4	
5 gallons		2¼		6	5			11½	1	8	8	
10 gallons		4½		11½	10			23	3			9

APPENDIX III

RECONSTITUTION RATIOS OF SEVERAL DEHYDRATED FOODS

Dehydrated product			Added water		Yield—reconstituted	
Item	Ounces per No. 56 dipper	No. 56 dippers per pound	Pounds per pound of dehydrated item	No. 56 dippers (1 quart)	Pounds (well drained)	Number of servings
Apple nuggets	9½	1⅔	6	3	7	20
Beans, baked	20	4⅕	2½	1¼	3¾	8
Beets	14	1	7	3½	7	28
Cabbage	4	4	10	5	8½	34
Carrots (shreds)	16	1	6	3	6	23
Cranberries (powdered)	16	1	14	7		100
Cranberries (sliced)	9	1¾	12	6		100
Eggs (whole)	14	1	2⅔	1⅓	3⅔	17
					(3 Doz.)	
Hominy	17	1	4⅓	2⅙		
Milk (whole)	16	1	7	3½	8	16
					(nearly 1 gallon)	
Milk (skim)	21	¾	9	4½	10	
Onions	10	1⅔	7	3½	6	64
Potatoes (julienne, white)	11	1½	6	3	3	11
Potatoes (shreds, white)	10	1⅔	5½	2¾	6½	21
Potatoes (sliced, sweet)	11	1½	4½	2¼	3	10
Turnips (rutabagas)	9½	1⅔	6	3	6	25

APPENDIX IV

FORMULAS FOR IMPROVING CARTER'S SPREAD

(Preserved butter)

1. The taste and consistency of Carter's Spread (canned, preserved butter) may be improved by the following methods:

Method No. 1

Ingredient	Weight	Measure
Milk, whole, dried	6 ounces	($\frac{1}{2}$ canteen cup.)
Water	5 ounces	(10 M. K. spoons.)
Salt	1 ounce	(2 M. K. spoons.)
Carter's Spread, warmed*	6 pounds	(3 No. 56 dippers.)

**To warm Carter's Spread:* Heat, preferably over hot water, until soft enough to be easily stirred, but not until melted.

a. Add water and salt to dried milk; mix to consistency of smooth thick sweet cream. Let stand $\frac{1}{2}$ hour. Whip to aerate.

b. Beat into warmed Carter's Spread to mix thoroughly and incorporate air.

c. Make into patties or brick.

d. Cooling will add to consistency and flavor.

Method No. 2

Ingredient	Weight	Measure
Milk, evaporated	6 ounces	(12 M. K. spoons.)
Salt	1 ounce	(2 M. K. spoons.)
Carter's Spread, warmed*	6 pounds	(3 No. 56 dippers.)

**To warm Carter's Spread:* Heat, preferably over hot water, until soft enough to be easily stirred but not until melted.

a. Add salt to milk and beat into warmed Carter's Spread, mixing thoroughly.

b. Make into patties or brick.

Method No. 3

Ingredient	Weight	Measure
Salt.....	1 ounce.....	(2 M. K. spoons.)
Water.....	5 ounces.....	(10 M. K. spoons.)
Carter's Spread, warmed*	6 pounds.....	(3 No. 56 dippers.)

*To warm Carter's Spread: Heat, preferably over hot water, until soft enough to be easily stirred, but not until melted.

- a. Add salt to water and beat into warmed Carter's Spread.
- b. Make into patties or brick.

Method No. 4

Ingredient	Weight	Measure
Salt.....	1 ounce.....	(2 M. K. spoons.)
Water.....	5 ounces.....	(10 M. K. spoons.)
Carter's Spread, warmed*	6 pounds.....	(3 No. 56 dippers.)
Mustard (dry or wet).....	To taste.....	

*To warm Carter's Spread: Heat, preferably over hot water, until soft enough to be easily stirred, but not until melted.

- a. Add salt to water and beat into warmed Carter's Spread.
 - b. Make into patties or brick.
2. Make up only as needed, as keeping qualities are lowered by these additions of water. Salt to taste. Try all four formulas for different purposes, according to menu.
 3. In some cases, the processed butter may have disintegrated due to heat, storage, or faulty processing, and may have not only a tallow-like taste, but also an off taste. This does not mean that it is spoiled, however, and it may be improved as stated above and used as a spread or filler.

INDEX

	Paragraph	Page
Apple cobbler.....	26c	50
Apple pie.....	26c	50
Apple sauce.....	28a	62
Baked beans.....	15	28
Beef.....		
Beef and eggs (hunter's style).....	21	39
Corned beef and cabbage.....	8d	13
Corned beef hash.....	24	41
Stew.....	22	39
Beets.....	7	10
Buttered.....	7b	10
Pickled.....	7d	12
Sweet-sour.....	7c	11
Cabbage.....	8	12
Boiled.....	8b	13
Cole slaw.....	8e	14
Corned beef and cabbage.....	8d	13
Sweet-sour.....	8c	13
Cakes.....	29	63
Coffee cake.....	29c	65
Devil's food.....	29b	64
Yellow layer.....	29a	63
Carrots, buttered.....	9	14
Cole slaw.....	8e	14
Cookies, spice.....	29d	65
Corn fritters.....	19	33
Cranberries.....	28	62
Cranberry juice.....	28c	63
Cranberry sauce (using powdered cranberries).....	28b	62
Cranberry sauce (using sliced cranberries).....	28b	62
Dehydrated foods, definition.....	1	1
Eggs (whole).....	17	29
Advantages.....	17a	29
Composition.....	17b	29
Custard.....	26e	53
Equivalents.....	17b	29
Hunter's style (with beef).....	21	39
Reconstituting dehydrated eggs.....	18	31
Scrambled (with bacon).....	18	31
Scrambled (oven method).....	18	31

	Paragraph	Page
French toast.....	20	37
Hominy.....	10	15
Luncheon meat.....	23	40
Baked.....	23 c	41
Corn casserole.....	23 d	41
With eggs.....	23 b	40
Milk equivalents.....	App. II	68
Onions.....	11	16
General information.....	11 a	16
Smothered onions.....	11 b	16
Soup.....	11 c	16
Peeling and trimming loss of foods.....	1	1
Pies.....	26	44
Apple.....	26 c	50
Cobbler.....	26 c	50
Cream or soft.....	26 e	53
Crusts.....	26 b	44
Custard.....	26 h	57
Dough.....	26 b	44
Napoleon slices.....	26 f	54
Pumpkin.....	26 g	57
Sweet potato.....	26 d	50
Potatoes (white).....	12	17
Au gratin.....	12 e	19
French fried.....	12 d	18
Hashed browned or fried.....	12 b	18
Lyonnais.....	12 c	18
Mashed.....	12 g	21
Salad.....	12 f	19
Soup.....	12 h	23
With turnips.....	14 c	27
Puddings.....	27	58
Bread and raisin.....	27 a	58
Rice.....	27 b	61
Reconstitution of dehydrated foods.....	3-5	5
Factors influencing.....	4	5
Field range.....	5 e	8
General method (photographs).....	5	6
Reconstitution ratios.....	App. III	68
Simmering.....	5 d	8
Soaking, value.....	5 c	7
Surplus water.....	5 g	8
Tenderness tests.....	5 f	8
Yield after reconstitution.....	App. III	68
Rutabagas (turnips).....	14	26
Soup:		
Cream of potato.....	12 h	23
Onion.....	11 c	17
Vegetable.....	25	42

	Paragraph	Page
Sweetpotatoes	13	23
Buttered or baked	13b	24
Candied or glazed	13c	24
Pie	26d	50
With raisins	13d	25
Turnips	14	26
Baked with bacon	14b	26
Boiled with bacon	14b	26
With potatoes	14c	27
Vegetables	6-16	10
Waste and moisture content of foods	1	1
White sauce	16	28
Yields, reconstituted (cooked) from dehydrated	App. III	68



