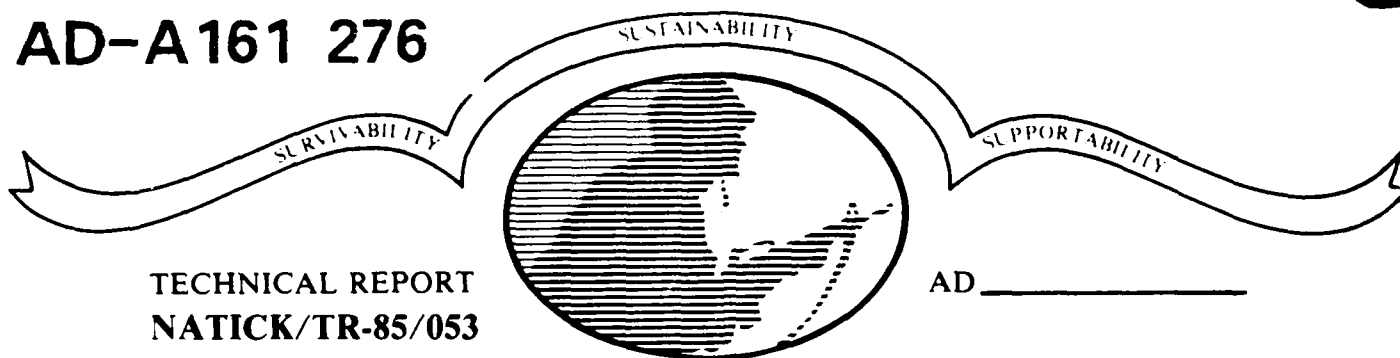


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TECHNICAL REPORT
NATICK/TR-85/053

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**OPERATIONAL GUIDES
FOR FROZEN PRODUCTS PREPARED
BY
THE F. E. WARREN FOIL PACK FACILITY**

BY
**VICKI A. LOVERIDGE
JANICE E. ROSADO**

JULY 1985

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**UNITED STATES ARMY NATICK
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NATICK, MASSACHUSETTS 01760-5000**

FOOD ENGINEERING LABORATORY

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<table border="0"> <tr> <td>➤ Entrees;</td> <td>Foils;</td> <td>Operational Guides;</td> </tr> <tr> <td>Desserts;</td> <td>Formulation;</td> <td>Packaging;</td> </tr> <tr> <td>Feeding System;</td> <td>Issue Unit;</td> <td>Preparation, and</td> </tr> <tr> <td>Frozen Foods;</td> <td>Meats;</td> <td>Vegetables. ←</td> </tr> </table>			➤ Entrees;	Foils;	Operational Guides;	Desserts;	Formulation;	Packaging;	Feeding System;	Issue Unit;	Preparation, and	Frozen Foods;	Meats;	Vegetables. ←
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<p>➤ Thirty-two operational guides are given for the procurement, issuing of ingredients, and preparation of frozen foods in the Air Force missile site feeding system. Each item's guide presents formulations for specific batch sizes and ingredients are listed in units used for procurement. Procedures for preparation incorporate methods and equipment used at the F.E. Warren Foil Pack Preparation Facility. Operational and Ingredient Room Notes cover information on alternate preparations and ingredients as well as special interest notes on problems typically encountered for that formula. An</p>														

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ingredient source guide provides information on stock available in the
Federal Supply System. *Keywords:*

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PREFACE

This project was completed at the US Army Natick R&D Laboratories and the F.E. Warren Foil Pack Production Facility at the request of the Strategic ARMS Command for the US Air Force Foil Pack System, the agency responsible for feeding the missile site personnel in the North Middle Western States. These efforts were coordinated through the Operational Research and Systems Analysis (ORSA), now known as the Directorate for Systems Analysis and Concept Development (DSACD), office of the US Army Natick R&D Laboratories (NLABS), recently renamed the US Army Natick Research and Development Center (NRDC), under Project Number 728012.19000.

The authors wish to thank the personnel at the Foil Pack Facility for their assistance and their cooperation in developing these operational guides and in refining their form. The authors also wish to thank Dr. Gerald Silverman and Mr. Robert Kluter of the Science and Advanced Technology Laboratories at NRDC for coordination of a Quality Assurance Program and consumer acceptance evaluations, respectively.

The following Food Engineering Laboratory personnel contributed to the efforts covered in this report:

Mrs. Nancy Kelley
Mr. John Kostick
Dr. George Walker
Mr. Wayne Swantak

DISCLAIMER

US customary units have been used in this report to accommodate US Army food service personnel.

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OPERATIONAL GUIDES FOR FROZEN PRODUCTS PREPARED BY THE F.E. WARREN FOIL PACK FACILITY

INTRODUCTION

The purpose of this document is to provide operational guides for food items prepared at the F.E. Warren Foil Pack Preparation Facility. Prior to 1980, the feeding system for the missile sites was a production-to-order system. The central production facility at F.E. Warren Air Force Base located outside of Cheyenne, Wyoming, produced 52 different frozen food items ranging from entrees and vegetables to desserts.

The need to reorganize the system was evident for several reasons, including nonstandard formulations, procedures, batch sizes, and resultant problems in controlling factors such as product quality, sanitation, and recipe yields.

Reorganization of the total system was accomplished under the coordination of the Operations Research and Systems Analysis (ORSA) office and through a contract with Dr. Robert Davis of the University of Massachusetts Department of Operational Research. The Food Engineering Laboratory was given the task of developing operational guides from existing Foil Pack recipes that were on card file at Foil Pack. Dr. Gerald Silverman of the Food Microbiology Group in the Science and Advanced Technology Laboratories (SATL) developed a Quality Assurance Program for the F.E. Warren Veterinary Section to monitor sanitation and provide guidance in selecting final product temperatures. The Behavioral Science Division (SATL) also contributed valuable data regarding consumer acceptance of products produced in the system.

The original 52 items were reduced to 32 items via consumer acceptance and consumption data, and several new entrees were added or given trial periods. The operational guides consist of 32 products: 17 entrees, 10 vegetables or starches, and 5 desserts. The products are ordered by a formulation identification number in use throughout the Foil Pack System; this number appears with the product name in the formulas and in the index.

METHOD OF PRESENTATION

The products included in these guides were taken originally from production guides published at Natick for F.E. Warren Foil Pack Facility,¹ Ft. Lee Central Food Preparation Facility,² and the Armed Forces Recipe Service Files used in dining halls. The primary goal of this work was to provide working guides for each menu item in specific batch sizes. Data collected on cooking and slicing yields, portioning criteria, equipment size and availability, on-site procedural methods, procurement information, and problems commonly encountered in each item's production was used to tailor these guides to the Foil Pack Facility. Specific volume vs. yield information was collected over a six-month period after the initial batch formulas were written to ensure that procedures and formulas yielded acceptable products and that indicated batch sizes consistently produced the required number of foils.

After 12 months of batch production, yield data has shown that batch sizes are within 5% of targets.

The operational guides have been arranged in four sections for each formulation:

- (1) The Formulation Page
- (2) The Preparation Page
- (3) Operational or Ingredient Room Notes
- (4) Ingredient Source Guide

The Formulation Page includes the list of raw ingredients, procurement/issue units (pounds, ounces, grams, cans), serving size, total volume for each batch size and numbered indicators of special notes. The Preparation Page shows the step-by-step instructions of preparation. It also includes information on use of equipment: slicing parameters for meat roasts; final temperature requirements; and portion weight range to be expected when portioning is done by volume. If an item includes groups of separately prepared ingredients, such as Turkey and Gravy, the instructions also are presented separately.

The Operational Notes are primarily for the supervisors and ingredient-room personnel. These notes include expected yields by weight for cooked meats, cleaned vegetables, and precooked pasta and volume expansions for gravies and sauces. Ingredient Room Notes include information on canned ingredient weights, alternate can size information, and alternate ingredient use.

The Ingredient Source Guide is primarily for the ingredient-room personnel for procurement information. It includes an ingredient description, Federal Stock Catalog numbers, and special ingredient-procurement information.

These products include a freeze-thaw stable starch, Col Flo 67 "TM".* This thickener is used especially for frozen products and has a specific thickening strength. Other freeze-thaw stable starches such as rice flour may be used with appropriate adjustments in amounts used to achieve similar thickening. Add alternate starches in small amounts until desired thickness is obtained. DO NOT replace Col Flo with a non-freeze-thaw stable thickener such as general purpose flour. Do not use hot water to make a starch slurry.

*COL FLO is a registered trade name of the National Starch & Chemical Corporation. Citation of trade names does not constitute an official endorsement or approval of such products.

#22 OPERATIONAL GUIDE FOR PORK CHOPS WITH GRAVY

Portion 1 Pork Chop
Size: 4 oz of gravy

Formulation			
Ingredient	Issue Unit	Quantity	One Batch 300 Portions
Pork Chops (note 1, 3)	lb	135	0
Shortening	lb	1	0
Flour	oz	0	72 (4 lb 8 oz)
Salt	oz	0	12
Paprika	g	40	
Pepper, black, grd	g	15	
Thyme	g	15	
<u>Gravy</u>			
Starch, Col Flo 67	oz	0	55 (3 lb 7 oz)
Salt	oz	0	1
Thyme	g	5	
Paprika	g	10	
Pepper, black grd	g	15	
Beef base	lb	1	8
Kitchen Bouquet TM *	oz	0	3
Stock and water	gal (lb)	9 gal	(74 lb)
Apple juice (optional, note 2)	cn	3	(9 lb)
Total gravy volume		10 gal	

*Kitchen Bouquet is a registered trade name of the Grocery Store Products Company. Citation of trade names does not constitute an official approval of such products.

#22 OPERATIONAL GUIDE FOR PORK CHOPS WITH GRAVY

Preparation

1. Pork Chop Preparation

- a. Mix flour, salt, pepper, paprika, and thyme in a large ration pan.
- b. Grease sheet pans (optional). Dredge pork chops in flour mixture, shake off excess and place dredged chops on sheet pans in one layer.
- c. If chops are not cooked immediately, hold in 40°F (4°C) box covered with white paper.
- d. Cook in ovens set at 350°F (177°C) until the internal temperature of three chops together is 150°F (66°C). Check chops for doneness in all ovens; pink or bloody meat should not be present.

2. Gravy Preparation

- a. Make a slurry with Col Flo and part of formula water.
- b. Place pepper, beef base, Kitchen Bouquet in steam kettle.
- c. Add half of formula water while mixing.
- d. Add slurry and heat until gravy starts to thicken.
- e. Add water until volume in kettle reaches 10 gal per batch and heat to 185°F (85°C).

3. Foil Preparation

- a. Place one chop in each foil.
- b. Ladle 4 oz of gravy over each chop. Filling temperature of gravy shall be not less than 160°F (71°C).
- c. Cover, label, and freeze.

#22 OPERATIONAL GUIDE FOR PORK CHOPS WITH GRAVY

Operational or Ingredient Room Notes

1. If breaded pork cutlets are procured, the flour dredge ingredients will be omitted. Shortening should be used to grease pans. (See ingredient source guide for cutlet procurement.)
2. Three cans (No. 3 cylinder) of single strength apple juice can be used to replace 1 gal of water per batch.
3. Standard cooked meat portions are set at 4 oz. If bone-in trimmed pork chops are procured, the chop weight should be at least 6 $\frac{3}{4}$ oz. If boneless chops are procured, raw chops should weigh 5 $\frac{1}{4}$ oz.

#22 OPERATIONAL GUIDE FOR PORK CHOP WITH GRAVY

Ingredient Source Guide

1. Meat

- a. Pork chops, fresh, not less than 3/4-in thick. Local purchase.
- b. Pork cutlets, frozen, boneless, breaded, formed, portion cut, 4 1/4 oz each (unbreaded), LP/P DES 1-76, Style II, NSN 8905-01-017-5718.

2. Fruits and Vegetables

- a. Juice, apple, canned, single strength clear or cloudy, US Grade A, No. 3 cylinder size can, Fed. Spec. Z-F-1742/11, Style I or II.

3. Bakery and Cereal Products

- a. Flour, wheat, general purpose or hard wheat, enriched, 10-lb bag. Fed. Spec. N-F-481, Type I, III, Class B, Style 2, NSN 8920-00-165-6863 or 8920-00-140-7748.

- b. Starch, Col Flo 67, Special Procurement.

4. Soups and Bouillons

- a. Soup and gravy base, instant, beef flavored, 8-oz or 1-lb jar. Fed. Spec. EE-B-575, Type I, Class 1, Style A, NSN-8935-00-753-6423.

5. Fats and Oils

- a. Shortening compound, general purpose type, regular, all vegetable oil, 3-lb can. Fed. Spec. EE-S-321, Type II, Class I (b), NSN 8945-01-066-8210.

6. Spices & Condiments

- a. Paprika, ground, 3-, 4-, or 5-oz glass bottle, Fed. Spec. EE-S-631, NSN-8950-00-170-9563.

- b. Pepper, black ground, 1-lb metal can, Fed. Spec. EE-S-631, NSN-8950-00-127-8067.

- c. Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

- d. Thyme, ground, 1- to 2-oz metal can or glass bottle, Fed. Spec. EE-S-631, Type II, NSN-8950-00-616-5483.

#23 OPERATIONAL GUIDE FOR ROAST BEEF WITH GRAVY

Portion 4 oz meat
Size: 4 oz gravy

Ingredient	Issue Unit	<u>Formulation</u>	
		Quantity	One Batch 600 Portions
Oven Roast (note 1)	lb	265	0
Salt	oz	0	36 (2 lb 4 oz)
Pepper, black, grd	g	55	
<u>Gravy (note 2)</u>			
Beef base	lb	3	0
Kitchen Bouquet	oz	0	6
Pepper, black, grd	g	40	
Starch, Col Flo 67	oz	0	104 (6 lb 8 oz)
Beef drippings and water	gal (lb)	20	(165 lb)

23 gal

Total gravy volume

#23 OPERATIONAL GUIDE FOR ROAST BEEF WITH GRAVY

Preparation

1. Meat Preparation

- a. Place roasts in ration pan..
- b. Rub mixture of salt and pepper into roasts.
- c. Add about 1/2 gal of water to each pan.
- d. Bake in oven at 350°F (177°C) until internal temperature reaches 150°F (66°C).
- e. Cool meat in 50°F (10°C) box (save drippings for gravy).
- f. Set Berkel Slicer to 10-11. Slice meat in chill box (50°F (10°C)). Place slices in ration pans.

2. Gravy Preparation

- a. Heat drippings in steam kettle.
- b. Add remaining ingredients, except starch.
- c. Make a starch slurry using part of formulation water. Add to kettle.
- d. Adjust volume to 21 gal for a batch of 600 servings.
- e. Heat up to 185°F (85°C).
- f. Cook for 15 minutes with regular stirring. Maintain volume with hot water (160°F (71°C)) before filling foils.

3. Foil Preparation

- a. Place 4 oz of meat in each foil.
- b. Ladle 4 oz of gravy at 160°F (71°C).
- c. Cover, label, and freeze.
- d. Total weight of foil shall not exceed 8.25 oz.

#23 OPERATIONAL GUIDE FOR ROAST BEEF WITH GRAVY

Operational and Ingredient Room Notes

1. Oven roasts when cooked to 150°F (66°C), cooled, and sliced, give a 55% yield. For 265 lb of raw roasts about 150 to 155 lb of sliced meat should be obtained.

2. This gravy formula uses beef drippings as its main flavor source. If drippings cannot be used, use the gravy formula for Country Style Steak, item #29. Multiply ingredient amounts for gravy by 1.5 for 400 portions of Country Style Steak, to obtain ingredient amounts for 600 portions.

#23 OPERATIONAL GUIDE FOR ROAST BEEF AND GRAVY

Ingredient Source Guide

1. Meat

a. Beef, boneless, fresh or frozen, oven roasts, knuckle (20% minimum), inside round (25% minimum), eye of round (10% minimum), outside round (20% minimum), US Choice Grade, MIL-B-43813, Type I, Style 1, 2, 3, 4, NSN-8905-00-133-5886.

2. Soups and Bouillons

a. Soup and gravy base, instant, beef flavored, 8-oz or 1-lb jar, Fed. Spec. EE-B-575, Type I, Class 1, Style A, NSN-8935-00-753-6423.

b. Kitchen Bouquet, Special Procurement.

3. Starch

a. Starch, Col Flo 67, Special Procurement.

4. Spices and Condiments

a. Pepper, black, ground, 1-lb metal can, Fed. Spec. EE-S-631, NSN-8950-00-127-8067.

b. Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

#24 OPERATIONAL GUIDE FOR ROAST TURKEY WITH GRAVY

Portion 5 oz turkey
Size: 4 oz gravy

Ingredient	Issue Unit	<u>Formulation</u>			
		Half Batch		Full Batch	
		700 Portions		1400 Portions	
		Quantity	lb oz	Quantity	lb oz
Turkey, rolled, boneless (note 1)	lb		330 0		670 0
Salt (optional)	oz		0 3		0 7
<u>Turkey Gravy</u>					
Starch, Col Flo 67	oz		0 128 (8 lb)		0 256 (16 lb)
Chicken base	lb		3 8		7 0
Pepper, black, grd	g	20		40	
Turkey stock and water	gal	27	(222 lb)	50	(412 lb)

Total volume of gravy (note 2)

31 gal

62 gal

#24 OPERATIONAL GUIDE FOR ROAST TURKEY WITH GRAVY

Preparation

1. Meat Preparation (cook the day before slicing and packaging)

- a. Set oven for 350°F (177°C).
- b. If turkey rolls are preseasoned, omit salt; otherwise sprinkle salt over raw turkey rolls.
- c. Add about $\frac{1}{2}$ gal of water per ration pan for stock.
- d. Bake roasts until internal temperature reaches 165°F (74°C). Save turkey drippings.
- e. Cool meat to 45°F (7°C). If turkey is cooked in roasting bags, slit or remove them for cooling.
- f. Slice turkey rolls on a meat slicer set for 1/8 inch (Berkel slicer setting 10). If slices fall apart increase the setting to 14. Slice meat in 50°F (10°C) box.

2. Gravy Preparation

- a. Add turkey drippings to steam kettle.
- b. Mix chicken base and pepper with turkey drippings.
- c. Turn on steam kettle and add half the formula water; heat to 160°F (71°C).
- d. Mix starch with part of formula water to make a slurry. Add to steam kettle and heat until gravy thickens.
- e. Add water until volume in kettle reaches 31 gal for 700 portions and 62 gal for 1400 portions. Heat to 185°F (85°C).

3. Product Portioning

- a. Place 5 oz of sliced turkey in each foil.
- b. Ladle 4 oz of gravy over the turkey at not less than 160°F (71°C).
- c. Cover, label, and freeze.
- d. Total foil weight shall not exceed 9 $\frac{1}{4}$ oz.

#24 OPERATIONAL GUIDE FOR ROAST TURKEY WITH GRAVY

Operational and Ingredient Room Notes

1. Yield for cooked, sliced, boneless turkey is about 65%. A half batch of turkey should yield 220 lb of sliced turkey meat; a full batch 440 lb. If turkeys are roasted in bags, slit bags to cool properly and rapidly.
2. If serving time exceeds an hour, add an additional 1-2 gal of hot water (160°F (71°C)) to gravy to reduce thickening.
3. If cooked pressed rolled turkey is procured, a 98-100% sliced yield is expected. Use 220 lb of cooked turkey for every 700 portions.

#24 OPERATIONAL GUIDE FOR ROAST TURKEY WITH GRAVY

Ingredient Source Guide

1. Meat

Turkey, boneless, frozen, raw molded, raw roll tied or netted. Fed. Spec. PP-T-001823 (Army-GL), Type I or II, Style (a) or (b), Condition A, Class 1 or 2, NSN-8905-00-262-7274.

2. Starch

Starch, Col Flo 67, Special Procurement.

3. Soups & Bouillions

Soup and gravy base, instant, chicken flavor, 8-oz jar, 1-lb jar, Fed. Spec. EE-B-575, Type II, Class 1, Style A, NSN-8935-00-753-6424.

4. Condiments

a. Pepper, black, ground, 1-lb metal can, Fed. Spec. EE-S-631, Type II, NSN-8950-00-127-8067.

b. Salt, table, iodized, fine, granulated or evaporated, 5-lb bags, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

#26 OPERATIONAL GUIDE FOR BAKED HAM WITH PINEAPPLE SAUCE

Portion 5 oz ham
Size: 2 oz sauce

Ingredient	Formulation		
	Issue Unit	Quantity	One Batch 300 Portions
Ham, canned, Pullman (note 1)	lb		99 0 (100 lb)
<u>Sauce</u>			
Pineapple, crushed (note 2)	No. 10 cn	3	(20 lb 8 oz)
Sugar, white grn.	oz		0 240 (15 lb)
Salt	oz		0 3
Starch, Col Flo 67	oz		0 24 (1 lb 8 oz)
Margarine/Butter	lb		3 0
Nutmeg	g	15	
Lemon Juice	oz		0 12
Water	gal	2	(16 lb 8 oz)

Total volume sauce (note 3)

6 gal

#26 OPERATIONAL GUIDE FOR BAKED HAM WITH PINEAPPLE SAUCE

Preparation

1. Meat Preparation

- a. Open cans of ham and slice into 5-oz portions in 50°F (10°C) box.
- b. Place slices in ration pans until step 3a.

2. Sauce Preparation

- a. Add all ingredients except starch and water to steam kettle.
- b. Make a slurry with the Col Flo and water.
- c. Heat ingredients in steam kettle to 160°F (71°C) stirring constantly.
- d. Add starch slurry to kettle while stirring.
- e. Cook for 15 minutes. Temperature must reach 185° (85°C) or higher.
- f. Adjust sauce to total required volume with hot water (160°F).

3. Foil Preparation

- a. Place 5 oz of ham in each foil.
- b. Cover with 2 oz of sauce. Filling temperature must be at least 160°F (71°C). (2-oz scoops)
- c. Cover, label, and freeze.
- d. Total foil weight shall not exceed 7½ oz.

#26 OPERATIONAL GUIDE FOR BAKED HAM WITH PINEAPPLE SAUCE

Operational and Ingredient Room Notes

1. Pullman hams can be procured in various weights. The usual weight is 11-pound hams and the formulation weight reflects this size; 9 hams for 300 portions. If other size hams are procured use 100 lb as a guide for ordering.
2. Crushed pineapple is procured in number 10 cans weighing 6 lb, 12 oz. If this size can is not available, use the weight next to the number of cans on the formulation page to figure alternate number of cans.
3. Sauce volume per batch:

<u>Batches</u>	<u>Portions</u>	<u>Gallons</u>
1	300	6
2	600	11
3	900	16
4	1200	21
5	1500	26
6	1800	31
7	2100	36
8	2400	41

#26 OPERATIONAL GUIDE FOR BAKED HAM WITH PINEAPPLE SAUCE

Ingredient Source Guide

1. Meat

a. Ham, canned, whole, Pullman-shaped, 8- to 14-lb can, Fed. Spec. PP-H-61, Typed II, NSN-8905-00-410-4670.

2. Fruit

a. Juice, lemons, reconstituted, Fed. Spec. Z-J-1843, NSN-8915-00-480-5847.

b. Pineapple, canned, crushed, light syrup or natural juice pack, US Grade A or B, No. 10 size can, (Fed. Spec. Z-F-1742/23, Style IV (a), NSN-8915-00-127-7262, for heavy syrup pack).

3. Dairy Products, and Fats and Oils

a. Margarine, all vegetable fats and oils, vitamin A added, colored, 1-lb print or 4 prints of 1/4-lb each wrapped, Fed. Spec. EE-M-45, Type I, Class 1, NSN-8945-00-616-0078.

b. Butter (surplus donated), salted, Grade B or better, 1-lb print or 4 prints of 1/4-lb each in wrapper, NSN-8910-00-782-3193.

4. Condiments

a. Nutmeg, ground, 1- to 2-oz metal can, or glass bottle, Fed. Spec. EE-S-631, Type II, SS-S-31, NSN-8950-00-262-8886.

b. Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

5. Sugar and Confectionery

a. Sugar, refined, granulated, cane or beet, 10-lb bag, Fed. Spec. JJ-S-791, Type I, Class (s), NSN-8925-00-127-3073.

6. Starch

a. Starch, Col Flo 67, Special Procurement.

#28 OPERATIONAL GUIDE FOR FRIED FISH PORTIONS

Portion
Size: 4 oz

Ingredient	<u>Formulation</u>		
	Issue Unit	Quantity	One Batch 240 Portions
Fish Portion (note 1)	lb	60	0 (2 boxes)
Frying Oil machine fill (note 2) (non-cost item)	cans (gal)	9 cans 18 cans	(1 fryer/11.25 gal) (2 fryer/23 gal)

#28 OPERATIONAL GUIDE FOR FRIED FISH PORTIONS

Preparation

1. Ingredient Preparation

a. Fill each deep fat fryer with 9 cans (11.25 gal) of cooking oil. Use only oil designed for frying, such as cottonseed or peanut oil. Do not use soybean oil.

b. Heat oil to 375°F (190°C).

c. Remove frozen fish portions from freezer (only 2 cases at a time).

2. Product Preparation

a. Place fish portions in deep fat fryer (18 per basket) and cook until golden brown (4½ - 5 minutes).

b. Check temperature of oil frequently. Maintain an oil temperature of at least 350°F (177°C).

c. Add more oil when oil drops below the fill line. Make sure oil is 375°F (190°C) before continuing.

3. Product Portioning

a. Place one 4-oz portion in each foil container immediately after removal from deep fat fryer.

b. Cover, label, and freeze.

#28 OPERATIONAL GUIDE FOR FRIED FISH PORTIONS

Operational and Ingredient Room Notes

1. Frozen fish must be cooked within one-half hour of removal from freezers. Withdraw only two frozen cases from freezer at a time. Do not stack cooked portions more than three layers before portioning in foils. Stacking will make breading soggy.
2. If oil temperature drops below 350°F (177°C) product will not obtain desired golden brown color and the oil will be used up faster. Strict control of timing and oil temperature is needed to insure low oil use and a quality product. Do not allow oil level in fryer to drop below fill line.

#28 OPERATIONAL GUIDE FOR FRIED FISH PORTIONS

Ingredient Source Guide

1. Fish

Fish portions, frozen cod, haddock, or ling cod, raw, breaded, 4 oz each, US Grade A, 5- to 10-lb box. Military Specification MIL-F-004-3276, Species (a), (b), or (c) Wt. 2. NSN-8905-00-082-5733.

2. Shortening

Shortening compound, deep fat fry cookery type, fluid. 4-qt or 5-qt-can or 10-qt plastic container, Fed. Spec. EE-S-321, Type IV, Class 2(a), all vegetable oil, NSN-8945-01-046-0073, NSN-8945-00-890-1776.

#29 OPERATIONAL GUIDE FOR COUNTRY STYLE STEAK

 Portion 1 steak
 Size: 4 oz gravy

Ingredient	<u>Formulation</u>		
	Issue Unit	Quantity	One Batch 400 Portions
Cube steak, beef (note 1)	lb	160	0
Flour	oz	0	192 (12 lb)
Salt	oz	0	32 (2 lb)
Pepper, black, grd	g	30	
MSG	g	20	
<u>Gravy</u>			
Shortening	lb	5	8
Flour	oz	0	36 (2 lb 4 oz)
Starch, Col Flo 67	oz	0	55 (3 lb 7 oz)
Pepper, black, grd	g	20	
Kitchen Bouquet	oz	0	5
Soup & Gravy Base, beef	lb	2	0
Water or Stock (note 2)	gal	12	(100 lb)

Total Volume of Gravy (note 3)

15 gal

#29 OPERATIONAL GUIDE FOR COUNTRY STYLE STEAK

Preparation

1. Meat Preparation

- a. Preheat ovens to 350°F (177°C).
- b. Mix flour and spices for dredging in ration pan. Dredge steaks and shake off excess.
- c. Place dredged steaks on cookie sheets in one layer with no more than one quarter steak overlap. Place about 25-26 steaks on each tray.
- d. Cook steaks in oven until internal temperature of steaks reaches 160°F (71°C).

2. Gravy Preparation

- a. Melt shortening in steam kettle and add flour while mixing to make a roux. Cook roux for 5 minutes.
- b. Mix starch (Col Flo) with part of formulation water. For each batch use two gallons of water.
- c. Add soup and gravy base, pepper, and Kitchen Bouquet to kettle; mix well. Add half of formula water while mixing.
- d. Add starch (Col Flo) and water slurry to kettle and heat until starch begins to thicken.
- e. Add remaining water to total batch volume while mixing.
- f. Heat gravy to at least 185°F (85°C) while mixing.
- g. Remeasure level of gravy in kettle and adjust the level in step 2e with hot water (over 160°F (71°C)).

3. Foil Preparation

- a. Place one steak in each foil.
- b. Ladle 4 oz of gravy at a filling temperature of at least 160°F (71°C).
- c. Cover, label, and freeze.

#29 OPERATIONAL GUIDE FOR COUNTRY STYLE STEAK

Operational Notes and Ingredients Room Notes

1. Cube steak should be procured by a piece count. If meat is frozen, a weight loss is to be expected when thawed. Raw steaks should weigh at least 6 oz, but not more than 6-3/4 oz.
2. Stock from the cooking of the steaks may be recovered and substituted for an equal amount of the formula water.
3. Gravy volume per batch:

<u>Batch</u>	<u>Portions</u>	<u>Gallons</u>
1	400	15
2	800	29
3	1200	42
4	1600	55

4. If gravy is held before serving, water loss through steam will occur. If product gets thick, hot water (160°F) (71°C)) can be added to replace water lost.

#29 OPERATIONAL GUIDE FOR COUNTRY STYLE STEAK

Ingredient Source Guide

1. Meat

Beef, Cube Steak, local purchase.

2. Condiments and Bouillon

a. Monosodium Glutamate, 4- or 4½-oz container, Fed. Spec. EE-M-591, NSN-8950-70-111-6574.

b. Pepper, black, ground, 1-lb metal can, Fed. Spec. EE-S-631, Type II, NSN-8950-00-127-8067.

c. Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

d. Soup and Gravy Base, instant, beef flavored, 8-oz or 1-lb jar, Fed. Spec. EE-B-575, Type I, Class 1, Style A, NSN-8935-00-753-6423.

e. Kitchen Bouquet, 1-gallon jug. Special Procurement.

3. Flour and Starch

a. Flour, wheat, general purpose or bread flour (hard), enriched, 10-lb bag, Fed. Spec. N-F-481, Type I, III, Class B, Style 2. NSN-8920-00-140-7748, NSN-8920-00-165-6863.

b. Starch, Col Flo 67, Special Procurement.

#30 OPERATIONAL GUIDE FOR BBQ BEEF TIPS

 Portion 4 oz meat
 Size: 5 oz sauce

Ingredient	Issue Unit	Formulation			
		Half Batch 350 Portions		Full Batch 700 Portions	
		Quantity	lb oz	Quantity	lb oz
Beef, diced, raw (note 1)	lb		147 0	292	0
<u>BBQ Sauce</u>					
Water	gal (lb)	10	(82 lb)	20	(165 lb)
Sugar, white, grn	oz		0 35 (2 lb 3 oz)	0	70 (4 lb 6 oz)
Tomato paste (note 2)	No. 2½ cn	11	(21 lb)	22	(42 lb)
Starch, Col Flo 67	oz		0 27 (1 lb 11 oz)	0	55 (3 lb 17 oz)
Flour	oz		0 30 (1 lb 14 oz)	0	60 (3 lb 12 oz)
Onion, dehydrated, chopped (note 3)	oz		0 27 (1 lb 11 oz)	0	54 (3 lb 6 oz)
Celery salt	g	110		220	
Salt	oz		0 18 (1 lb 2 oz)	0	35 (2 lb 3 oz)
Garlic powder	g	90		175	
Pepper, black, grd	g	70		135	
MSG	g	110		215	
Cloves, grd	g	10		20	
Worcestershire sauce (note 4)	oz		0 10	0	20 (1 lb 4 oz)
Vinegar, cider 5% (note 5)	oz		0 82 (5 lb 2 oz)	0	164 (10 lb 4 oz)
Liquid Smoke	oz		0 16 (1 lb)	0	31 (1 lb 15 oz)

Total sauce volume

14 gal

26 gal

#30 OPERATIONAL GUIDE FOR BBQ BEEF TIPS

Preparation

1. Meat and Sauce Preparation

- a. Brown meat in steam kettle.
- b. Add all other ingredients except onions, Col Flo, and flour.
- c. Mix well and cook about 1-1½ hours.
- d. Remove meat from sauce and place in ration pans; hold in 40°F (4°C) box until step 2a.
- e. Add onions to sauce.
- f. Make a slurry with Col Flo and flour and add to kettle.
- g. Adjust volume to 14 gal for half a batch and 26 gal for a full batch.
- h. Heat to 185°F (85°C) and cook for 5 minutes before serving.

2. Foil Preparation

- a. Place 4 oz of meat in each foil.
- b. Add 4 oz of sauce. The filling temperature shall be at least 160°F (71°C).
- c. Cover, label, and freeze.
- d. Total foil weight shall not exceed 8½ oz.

#30 OPERATIONAL GUIDE FOR BBQ BEEF TIPS

Operational and Ingredient Room Notes

1. Cut meat into 0.75 to 1-in (1.9 to 2.5-cm) cubes. Yield of cooked meat ranges from 55% to 60%; 147 lb should yield not less than 74 lb and 292 lb should yield not less than 146 lb of cooked cubes.
2. Tomato paste is usually procured in 30-oz, 2½-size cans. If this size is not available, use the weight listed on the formulation page (21 lb for 350, 42 lb for 700) to figure alternate number of containers.
3. Fresh onions may be substituted for dehydrated chopped onions. Multiply the weight of dehydrated onions by 8 to get required weight of whole unpeeled onions.
4. Worcestershire sauce is procured in 5-oz bottles. Use the weight listed on the formulation page to figure for alternate containers.
5. Vinegar is procured most often in 32-oz bottles. This represents 2½ bottles for half a batch and 5 bottles for a full batch.

#30 OPERATIONAL GUIDE FOR BBQ BEEF TIPS

Ingredients Source Guide

1. Meat

a. Beef, diced (for stewing) uncooked, US Grade good or higher. USDA IMPS items no. 135A, NSN-8905-00-177-5017.

b. Beef, top round, center cut. Special procurement from local commissary. Cut into approximately 0.75 to 1.0-inch (1.9- to 2.5-cm) cubes.

2. Vegetables

a. Onions, dehydrated, white, chopped, no. 10 size can, Type I, Style I, Fed. Spec. JJJ-O-1866, NSN-8915-00-128-1179.

b. Tomato paste, 2½-size can, US Grade A, Type I, II, concentration (b), (c) or (d), texture (1) or (2), Fed. Spec. JJJ-V-1746/22, NSN-8915-00-127-9303.

3. Condiments

a. Celery salt, 3- to 4-oz container, MIL-S-43855, Type I, NSN-8950-00-127-8044.

b. Cloves, ground, 1- to 2-oz metal can or bottle, Type II, Fed. Spec. EE-S-631, NSN-8950-00-170-9571.

c. Garlic powder, Special Procurement.

d. Liquid smoke flavoring, Special Procurement.

e. Monosodium Glutamate, 4-oz or 4½-oz container, Fed. Spec. EE-M-591, NSN-8950-00-111-6574.

f. Pepper, black, ground, 1-lb metal can, Type II, Fed. Spec. EE-S-631, NSN-8950-00-127-8067.

g. Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

h. Vinegar, cider or distilled, Type I or II, 50-grain strength, 32-oz bottle, Fed. Spec. Z-V-401, NSN-8950-00-221-0297.

i. Worcestershire sauce, 5-oz bottle, Fed. Spec. EE-W-600, NSN-8950-01-033-4199.

#30 OPERATIONAL GUIDE FOR BBQ BEEF TIPS

Ingredient Source Guide (cont'd)

4. Sugar

Sugar refined, granulated, cane or beet, 10-lb bag, Type I, Class (a), Fed. Spec. JJJ-S-791, NSN-8925-00-127-3073.

5. Flours and Starches

a. Flour, wheat, general purpose or bread flour (hard), enriched, 10-lb bag, Type I, III, Class b, Style 2, Fed. Spec. N-F-481, NSN-8920-00-140-7748, or NSN-8920-00-165-6863.

b. Starch, Col Flo 67, Special Procurement.

#31 OPERATIONAL GUIDE FOR FRIED CHICKEN

Portion 1 breast piece
Size: 1 thigh

Ingredient	Issue Unit	Formulation				500 Portions One Batch	
		Quantity	Constant Machine Fill	lb	oz	lb	oz
Batter (note 1) Egg Mix	oz			0	16 (1 lb)	0	37 (2 lb 5 oz)
NFD Milk	oz			0	8	0	19 (1 lb 3 oz)
Water (note 3)	lb (gal)			7	0 (0.85 gal)	15	14 (1.9 gal)
Dredge Flour	oz					0	160 (10 lb)
Salt	oz					0	40 (2 lb 8 oz)
Pepper, black, grd	g					45	
Breading (note 1) Bread crumbs	oz			0	200 (12 lb 8 oz)	0	200 (12 lb 8 oz)
Soup & gravy base, chicken	lb			3	0	3	0
Flour	oz			0	86 (5 lb 6 oz)	0	86 (5 lb 6 oz)
Pepper, black, grd	g	15					15
Ginger, grd	g	45					45
Garlic powder	g	45					45
Poultry seasoning	g	45					45
MSG	g	15					15
Thyme, grd	g	7					7
Frying oil (note 2)	5- qt cn	18 (9 cn/ Fryer 23 gal)					0.5 gal per 500 portions

#31 OPERATIONAL GUIDE FOR FRIED CHICKEN

Preparation

1. Chicken Preparation

- a. Check current piece per pound information for breasts and thighs to figure weights required for batch size.
- b. Thaw frozen chicken in 40°F (4°C) room for at least 24 hours, but not more than 72 hours prior to processing.
- c. Wash the thawed chicken pieces thoroughly under running water. Drain well.
- d. Cook chicken in perforated trays in the pressure steamer until the internal temperature is 175°F (80°C) (approximately 20 minutes per pound in each tray).
- e. Remove chicken from steamer and cool on trays for approximately 10 minutes before placing in 40°F (4°C) room. Cover chicken when it has stopped steaming. Hold in 40°F (4°C) room for not more than 30 hours prior to further processing (batter-breading operation).

2. Batter Breading Preparation

- a. Prepare batter by combining egg mix and nonfat dry milk in water with wire whip.
- b. Mix breading ingredients together thoroughly.
- c. Mix flour dredge ingredients together thoroughly in ration pans.
- d. Fill deep fat fryer with 9 gallons of frying oil. Do not substitute soybean oil. Set the temperature at 375°F (190°C).

3. Product Preparation

- a. Dredge cooked cooled chicken in flour mixture. Shake off excess flour.
- b. Place flour-dredged pieces into batter-breading machine. Bread no more than one large piece or two small pieces at a time. Breasts should be placed hollow side up. Shake off excess breading.
- c. Place chicken in deep fat fryer. If chicken does not brown well, check oil temperature. The chicken will absorb extra oil (not recommended) if a 375°F (190°C) oil temperature is not maintained. Never let oil temperature drop below 350°F (177°C).

#31 OPERATIONAL GUIDE FOR FRIED CHICKEN

Preparation (cont'd)

4. Foil Preparation

- a. Place one breast and one thigh in each foil.
- b. Cover, label, and freeze (note 4).

#31 OPERATIONAL GUIDE FOR FRIED CHICKEN

Operational and Ingredient Room Notes

1. The batter/breading machine needs 1 gal of batter and 20 lb of breading just to fill the machine. These are the constant figures in the formulation. To figure actual amount needed for a given number of servings, multiply the amounts for 500 (one batch) portions by the number of batches needed and add to constant weights.

2. Oil can be filtered and cleaned with acidox to extend its use life. (Source for acidox: Keating of Chicago, Inc., 7155 25th Ave. Bellwood, IL 800-323-4095.)

3. Do not add water to batter in excess of formulation. Thinning of batter with water will result in improper coating of chicken.

4. Package and freeze chicken within 30 minutes of frying to preserve crispness.

#31 OPERATIONAL GUIDE FOR FRIED CHICKEN

Ingredient Source Guide

1. Meat

a. Chicken breast, frozen, broiler or fryer, Ready-to-Cook, US Grade A, 15-lb Max intermediate box, Fed. Spec. PP-C-248, Type II or IV, Class 1, Style 5, NSN-8905-00-582-1393.

b. Chicken thigh, frozen, broiler or fryer, Ready-to-Cook, US Grade A, 15-lb Max intermediate box, Fed. Spec. PP-C-248, Type II or IV, Class 1, Style 5, NSN-8905-00-582-1394.

2. Dairy

a. Egg mix, dehydrated, No. 3 cylinder size can Mil. Spec. MIL-E-43377, NSN-8910-00-965-1553.

b. Milk, nonfat, dry, conventional, low heat. 5-lb can, Fed. Spec. C-M-350, Type I, Style C, (general purpose use) NSN-8910-00-982-2779.

3. Bread and Flour

a. Bread crumbs, breading 10-oz can, 5-lb bag, Mil. Spec. MIL-F-3501, Type III, NSN-8920-00-464-2224 or 8920-00-141-0136.

b. Flour, wheat, general purpose, or bread flour (hard), enriched 10-lb bag, Fed. Spec. N-F-481, Type I or III, Class B, Style 2, NSN-8920-00-165-6863 or 8920-00-140-7748.

4. Soups and Bouillons

Soup and gravy base, instant, chicken flavored, 8-oz jar or 1-lb jar, Fed. Spec. EE-B-575, Type II, Class I, Style A, NSN-8935-00-753-6424.

5. Condiments

a. Garlic, powdered (or dehydrated granular), Special Procurement.

b. Ginger, ground, 3- to 4-oz metal can or glass bottle, Fed. Spec. EE-S-631, Type II, NSN-8950-00-616-5484.

c. Monosodium Glutamate, 4-oz or 4½-oz container, Fed. Spec. EE-M-591, NSN-8950-00-111-6574.

#31 OPERATIONAL GUIDE FOR FRIED CHICKEN

Ingredient Source Guide (continued)

d. Pepper, black, ground, 1-lb metal can, Fed. Spec. EE-S-631, Type II, NSN-8950-00-127-8067.

e. Poultry seasoning, ground, 3- to 4-oz metal can, Fed. Spec. EE-S-631, Spice blend, Type III, NSN-8950-00-170-9558.

f. Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

g. Thyme, ground, 1- to 2-oz metal can or glass bottle, Fed. Spec. EE-S-631, Type II, NSN-8950-00-616-5483.

6. Food Oils and Fats

Shortening compound, deep fry cookery type fluid, 5-qt can or 10-qt plastic container, Fed. Spec. EE-S-321, Type IV, Class 2(a), NSN-8945-00-890-1776.

#32 OPERATIONAL GUIDE FOR PORK SLICES IN BBQ SAUCE

Portion 4 oz pork
Size: 4 oz sauce

Ingredient	Issue Unit	Formulation	
		Quantity	One Batch 300 Portions lb oz
Pork, boneless loin (note 1)	lb		120 0
Salt	oz		0 10
Pepper, black, ground	g	15	
<u>BBQ Sauce</u>			
Worcestershire sauce (note 2)	oz		0 44 (2 lb 12 oz)
Catsup (note 3)	No. 10 cn	9	(64 lb 2 oz)
Mustard, prepared (note 4)	lb		4 0 (2 cn, 2 jars)
Brown sugar	lb		8 0
Salt	oz		0 30 (1 lb 14 oz)
Pepper, black, grd	g	15	
Cayenne pepper	g	15	
Margarine/Butter	lb		3 0
Vinegar	oz		0 88 (5 lb 8 oz)
Onions, fresh (note 5) chopped	lb		10 0 (8 lb)

Total sauce volume (note 6,7)

11 gal

#32 OPERATIONAL GUIDE FOR PORK SLICES AND BBQ SAUCE

Preparation

1. Preparation of Meat (Cook meat the day before slicing and packaging)

- a. Rub salt and pepper evenly over pork loin.
- b. Set ovens to 350°F (177°C). Cook pork loins until internal temperature reaches 160°F (71°C).
- c. Remove from oven and cool until internal temperature reaches at least 45°F (7°C).
- d. Slice meat in chill box (setting on Berkel Slicer is 14) and place in ration pans.

2. Preparation of Sauce

- a. Peel and chop onions.
- b. Mix all sauce ingredients together in steam kettle.
- c. Heat sauce to boiling, reduce heat, cover and simmer until ingredients are well blended.
- d. Adjust volume before filling to 10.5 gal per batch.

3. Preparation of Foils

- a. Add 4 oz of pork slices to each foil
- b. Ladle 4 oz (note 6) of BBQ Sauce to each foil. Filling temperature shall not be less than 160°F (71°C).
- c. Cover, label, and freeze.
- d. Total foil weight shall not exceed 8½ oz.

#32 OPERATIONAL GUIDE FOR PORK SLICES AND BBQ SAUCE

Operational and Ingredient Room Notes

1. Cooked, sliced yield for boneless pork loin is about 70%. A batch of pork slices should yield 84 lb. Yield can fluctuate widely if overcooked.
2. Worcestershire sauce is usually procured in 5-oz bottles. If 5-oz bottles are not available use weight indicated on formulation page.
3. Catsup is usually procured in No. 10 cans (7 lb 2 oz). If No. 10 cans are not available, use weight indicated on formulation page.
4. Mustard is procured in either 2-lb jars or 2½-size cans. Use 2 jars or 2 cans per batch of 300.
5. Fresh onions have an 80% yield; therefore, one batch, 10 lb of fresh onions will yield 8 lb of peeled, chopped onions.
6. Actual weight of a 4-oz ladle is about 4¼ oz. Total weight of foil should not be less than 8 oz or more than 8½ oz.
7. Sauce volume per batch:

<u>Batch</u>	<u>Portions</u>	<u>Gallons</u>
1	300	11
2	600	22
3	900	31
4	1200	41
5	1500	51

8. Extra hot water (160°F) (71°C) may be added to reduce thickening if gravy is held more than 1/2 hour.

#32 OPERATIONAL GUIDE FOR PORK SLICES AND BBQ SAUCE

Ingredients Source Guide

1. Meat

Pork, Loin, frozen bladeless, 10 to 20 lb, USDA IMPS, item no. 411, selection 1 and 2, weight range A, B, and C, NSN-8905-00-935-0618.

2. Dairy Products, Oils & Fats

a. Margarine, all vegetable fats and oils, vitamin A added, colored, 1-lb print or 4 prints of $\frac{1}{4}$ lb each in wrapper, Fed. Spec. EE-M-45, Type I, Class 1, NSN-8945-00-616-0078.

b. Butter (surplus donated), salted, Grade B or better, 1-lb print or 4 prints of $\frac{1}{4}$ lb each (not authorized for commissary resale), NSN-8910-00-782-3193.

3. Vegetables

Onions, dry, any variety except Sweet Spanish, US No. 1 Grade, 2-in minimum diameter for 70% or more, Fed. Spec. HHH-V-1744/40, NSN-8915-00-616-0200.

4. Condiments

a. Catsup, tomato, US Grade A, No. 10-size can, Fed. Spec. JJJ-V-1746/25, Type I or II, flavor style 1, NSN-8950-00-127-9789.

b. Mustard, prepared, light, 2-lb jar or 2 $\frac{1}{2}$ -size can, Fed. Spec. EE-M-821, Type I, NSN-8950-00-127-8024 or 8950-00-543-7698.

c. Pepper, black, ground, 1-lb metal can. Fed. Spec. EE-S-631, Type II, NSN-8950-00-127-8067.

d. Pepper, red, ground, 1- or 2-oz can or glass bottle, Fed. Spec. EE-S-631, NSN-8950-00-170-9565, (cayenne).

e. Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

f. Vinegar, cider or distilled, 50-grain strength, 32-oz bottle, Fed. Spec. Z-V-401, Type I or II, NSN-8950-00-221-0297.

g. Worcestershire sauce, 5-oz bottle, Fed. Spec. EE-W-600, as modified by bottle size, NSN-8950-01-033-4199.

5. Sugar and Confectionery

Sugar, brown, light or medium, 1-lb bag or box, 2-lb polybag, Fed. Spec. JJJ-S-791, Type II, Class (a) or (b), NSN-8925-00-127-7325 or 8925-00-566-7506.

#33 OPERATIONAL GUIDE FOR CHILI CON CARNE WITH BEANS

Portion
Size: 9 oz

Ingredient	Issue Unit	Formulation		
		Quantity	One Batch 300 Portions	
Beef, boneless, ground (note 1)	lb		150	0
Tomato paste (note 2)	2½ cn	6		(11 lb 7 oz)
Tomatoes, canned, conc. crushed (note 3)	No. 10 cn	7		(45 lb 8 oz)
Beef base	lb		3	0
Chili powder	oz		0	70 (4 lb 6 oz)
Salt	oz		0	17 (1 lb 1 oz)
Garlic salt	g	40		
Pepper, cayenne	g	30		
Paprika	g	300		
MSG	g	100		
Starch Col Flo 67	oz		0	150 (9 lb 6 oz)
Beans, kidney (note 4)	No. 10 cn	21		(145 lb)
Onions, fresh, chopped (note 5)	lb		20	0 (16 lb)
Water	gal	8		(65 lb)

Total Volume per Batch

48 gal

#33 OPERATIONAL GUIDE FOR CHILI CON CARNE WITH BEANS

Preparation

1. Ingredient Preparation

- a. Peel and chop onions (see note 5). Hold for step 2b.
- b. Mix Col Flo with part of formula water to make a smooth slurry. Hold for step 2.

2. Product Preparation

- a. Place beef into a steam kettle and cook until redness disappears. Do not overcook. Drain excess liquid and discard.

- b. Add chopped onions to the meat and cook until onions are translucent (about 2 minutes).

- c. Add remaining ingredients except starch slurry and kidney beans. Heat product to 175°F (79°C) and cook for 10 minutes. Stir to keep kettle sides free of food build-up.

- d. Add the Col Flo slurry. Mix thoroughly.

- e. Add the kidney beans with their juice.

SCRAPE ALL INTERMEDIATE CONTAINERS FREE OF INGREDIENTS.

- f. Stop heating and stirring and measure volume in kettle; adjust to 48-gal per batch.

- g. Heat product to at least 170°F (77°C) and cook for 15 minutes. Stir periodically to prevent buildup on the sides of the kettle.

- h. After cooking, remeasure volume and adjust to the 48-gal level with hot water (160°F (71°C)).

3. Product Portioning

- a. Weigh 9 oz of chili into each foil using an 8-oz scoop. Filling temperature shall not be less than 160°F (71°C).

- b. Cover, label, and freeze.

#33 OPERATIONAL GUIDE FOR CHILI CON CARNE WITH BEANS

Operational and Ingredient Room Notes

1. The yield of cooked ground beef is calculated to be 65% of original weight. For 150 lb of fresh meat, the yield should be at least 97 lb of cooked drained meat. Do not overcook ground beef.
2. Tomato paste is procured in No. 2½ size cans containing 30 oz of product. If No. 2½ size cans are not available, use the required weight (11 lb 7 oz) given to figure the number of substitute cans for the batch.
3. Crushed tomatoes are procured in No. 10 cans containing 6 lb 9 oz of product. If No. 10 cans are not available use the weight (45 lb 8 oz) given to figure the number of substitute cans for the batch. If crushed tomatoes are not available, whole tomatoes crushed through a strainer may be substituted in equal amounts. Extra Col Flo may be required if whole tomatoes in juice are used, add up to 2 lb per batch.
4. Kidney beans are procured in No. 10 cans containing 6 lb 13 oz of product. If No. 10 cans are not available, use the weight (145 lb) given to figure the number of substitute cans for the batch.
5. The formulation gives the weight of whole untrimmed onions at 20 lbs for 700 portions. Twenty pounds should yield at least 16 lb of trimmed onions. If whole trimmed onions are used, use trimmed weights for issue.

#33 OPERATIONAL GUIDE FOR CHILI CON CARNE WITH BEANS

Ingredients Source Guide

1. Meat

Beef, ground, local commissary, order 20-25% fat product and 3/16" (4.7 mm) final grind.

2. Vegetables

a. Beans, kidney, canned, in brine, Grade A or C, No. 10 can size, Fed. Spec. JJJ-B-101, Type 1, Class 3, Style (b), NSN-8915-00-926-6793.

b. Onions, dry, any variety except Sweet Spanish, US No. 1 Grade, 2-in. minimum diameter for 70% or more, Fed. Spec. HHH-V-1744/40, NSN-8915-00-616-0200.

c. Tomatoes, canned, crushed. Special Procurement.

d. Tomatoes, canned, whole, almost whole, large pieces, or combination thereof, US Grade A or B, No. 10 size can, Fed. Spec. JJJ-V-1746/20, Type I, NSN-8915-00-582-4060.

e. Tomato Paste, liquid from mature tomatoes or residual tomato material from canning, US Grade A, No. 2-1/2 size can, Fed. Spec. JJJ-V-1746/22, Type I or II, concentration (b), (c), or (d) texture (1), or (2) NSN-8915-00-127-9303

3. Condiments and Bouillon

a. Soup and gravy base, instant, beef flavored, 8-oz or 1-lb jar, Fed. Spec. EE-B-575, Type I, Class 1, Style A, NSN-8935-00-753-6423.

b. Chili powder, 1-lb glass bottle, Fed. Spec. EE-S-631, Spice Blend, Type I, NSN-8950-00-753-2962.

c. Garlic salt, 1-lb container, MIL-S-43855, Type II, NSN-8950-00-539-9542.

d. Monosodium Glutamate, 4- or 4½-oz container, Fed. Spec. EE-M-591, NSN-8950-00-111-6574.

e. Paprika, ground, 1-lb metal can, Fed. Spec. EE-S-631, NSN-8950-00-535-2979.

f. Pepper, red, ground, 1- or 2-oz metal can or glass bottle, Fed. Spec. EE-S-631, NSN-8950-00-170-9565 (cayenne).

g. Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

4. Starch

Starch. Col Flo 67, Special Procurement.

#35 OPERATIONAL GUIDE FOR BEEF POT PIE

Portion 8 oz stew
Size: 2 oz topping

Ingredient	Issue Unit	Formulation			
		Half Batch 350 Portions		One Batch 700 Portions	
		Quantity	lb oz	Quantity	lb oz
<u>Stew</u>					
Beef, stew, diced, raw (note 1)	lb		100 0		200 0
Flour	oz		0 9		0 18 (1 lb 2 oz)
Starch, Col Flo 67	oz		0 18 (1 lb 2 oz)		0 34 (2 lb 2 oz)
Pepper, blk, grd	g	65		120	
Sugar	oz		0 9		0 18 (1 lb 2 oz)
Salt	oz		0 16 (1 lb)		0 30 (1 lb 14 oz)
Onions, fresh, chopped	lb		11 0 (8 lb 12 oz)		20 0 (16 lb)
Tomato juice (note 3)	No. cyl cn	10		20	
Mixed vegetables, frozen	lb		35 0		0 70
Potatoes, fresh, diced (note 4)	lb		20 0 (16 lb)		40 0 (32 lb)
Beef base	lb	7	2 0	14	4 0
Water	gal (1b)		(57 lb)		(115 lb)
Total Stew Volume			23 gal	45 gal	
<u>Topping</u>					
Bisquick(R)* (note 5)	40 oz bx	10	(25 lb)	19	(47 lb 8 oz)
Eggs, fresh	doz	5		9	
Milk, NFD	oz		0 115 (7 lb 3 oz)		0 220 (13 lb 12 oz)
Margarine	lb		5 0		9 0
Water (note 7)	gal (1b)	2-1/4	(18 lb)	4	(34 lb)

*Bisquick is a trade name of General Mills, Inc. Citation of trade names does not constitute an official endorsement or approval of such products.

#35 OPERATIONAL GUIDE FOR BEEF POT PIE

Preparation

1. Stew Preparation

- a. Braise meat in kettle (45 minutes for a half batch of meat). Do not drain.
- b. Add onions, salt, pepper, sugar, and beef base and cook for about 30 minutes. Peel and dice potatoes into 3/4-in. cubes.
- c. Add tomato juice and part of formula water to ease mixing.
- d. Add potatoes; cook 25 minutes.
- e. Add vegetables; cook 5 minutes.
- f. Add flour and Col Flo (mixed w/part of formula water). Heat to 185°F (85°C) and cook for 5 minutes.
- g. Adjust volume to 23 gal for a half batch and 45 gal for a full batch with hot water (160°F (71°C)).

2. Topping Preparation

- a. Preheat ovens to 400°F (204°C).
- b. Melt butter in oven and set aside for step 2e.
- c. Add Bisquick and milk to mixing bowl and mix with wire whip attachment.
- d. Put mixer on low and add eggs; mix well.
- e. Add melted butter.
- f. Add water. Batter should be thin enough to ladle portions easily.
- g. Increase speed and mix until smooth.

3. Foil Preparation

- a. Portion 8 oz of beef stew with a 6-oz ladle into foil at a filling temperature of at least 160°F (71°C). (Note 6)
- b. Add 2 oz of topping using a 2-oz ladle. Total weight before cooking shall not be more than 11 oz.
- c. Place foils on cookie sheets and bake in oven until topping is golden brown.
- d. Cover, label, and freeze.

#35 OPERATIONAL GUIDE FOR BEEF POT PIE

Operational and Ingredient Room Notes

1. Diced stew beef has a typical cooked weight yield of 50%. A half batch of meat of 100 lb should yield 50 lb of cooked meat.
2. Fresh whole onions should yield 80% of original weight when peeled, trimmed and diced. See formulation page for chopped weight listed next to issue weight.
3. Tomato juice is usually procured in No. 3 cyclinder cans containing 48 oz (3 lb) of juice. If alternate containers are used, figure the number from the weight listed on the formulation page.
4. Potatoes yield about 80% of original weight, when peeled and diced. The diced weight is listed next to the issue weight on the formulation sheet and should be used if peeled potatoes are obtained.
5. Bisquick is issued in either 40- or 60-ounce boxes. The formulation sheet lists the number of 40-oz boxes. If 60-oz boxes are used, issue 6 boxes and use 18 lb (2 $\frac{1}{4}$ gal) of water for $\frac{1}{2}$ batch and 12 boxes and 4 gal of water for a full batch.
6. A full 8-oz ladle will weigh more than 8-oz. An overfilled 6-oz ladle will be closer to desired weight.
7. Batter will gradually thicken; add water to retain original thickness.

#35 OPERATIONAL GUIDE FOR BEEF POT PIE

Ingredient Source Guide

1. Meat

Beef, diced, fresh or frozen (for stewing), uncooked, US Grade good or higher. USDA IMPS item no. 135A, NSN-8905-00-177-5017.

2. Dairy Products, Fats & Oils

a. Eggs, shell, fresh or shell protected fresh, medium or larger, procurement Grade I, 30 dozen box, Fed. Spec. C-E-271, condition 1 or 2, NSN-8910-00-043-3198.

b. Milk, nonfat, dry, conventional, low heat, 5-lb can, Fed. Spec. C-M-350, Type I, Style C (general purpose use), NSN-8910-00-982-2779.

c. Margarine, all vegetable fats and oils, vitamin A added, colored, 1-lb print or 4 prints of 1/4 lb each in wrapper, Fed. Spec. EE-M-45, Type I, Class 1, NSN-8945-00-616-0078.

3. Vegetables

a. Onions, dry, any variety except Sweet Spanish, US No. 1 Grade, 2-in. diameter for 70% or more, Fed. Spec. HHH-V-1744/40, NSN-8915-00-616-0200.

b. Potatoes, white, fresh, not more than moderately skinned, long or round, US No. 1 Grade, Size A, 2 in minimum diameter, 16-oz maximum each, 50-lb container, 100-lb bag, Fed. Spec. HHH-V-1744/30, NSN-8915-00-226-4349 or NSN-8915-00-616-0220.

c. Tomato juice, canned, single strength, US Grade A, No. 3 cylinder size can, Fed. Spec. JJJ-V-1746/8, Type I, NSN-8915-00-255-0523.

d. Vegetables, mixed, frozen, 20% to 30% green or wax beans, 20% to 30% carrots, 20% to 30% corn, 10% to 20% green peas, optional 8% to 20% lima beans, US Grade A or B, 2- to 5-lb package, Fed. Spec. HHH-V-1745/21, Type I, NSN-8915-00-935-6620.

4. Bakery

a. Bisquick, Special Procurement, 40-oz or 60-oz box.

b. Flour, wheat, general purpose or bread flour (hard), enriched, 10-lb bag, Fed. Spec. N-F-481, Type I or III, Class B, Style 2. NSN-8920-00-140-7748 or NSN-8920-00-165-6863.

c. Starch, Col Flo 67, Special Procurement.

#35 OPERATIONAL GUIDE FOR BEEF POT PIE

Ingredient Source Guide (cont'd)

5. Soup and Bouillon

Soup and gravy base, instant, beef flavored, 8-oz or 1-lb jar, Fed. Spec. EE-B-575, Type I, Class 1, Style A, NSN-8935-00-753-6423.

6. Sugar

Sugar, refined, granulated, cane or beet, 10-lb, Fed. Spec. JJJ-S-791, Type I, Class (a), NSN-8925-00-127-3073.

7. Condiments

a. Pepper, black, ground, 1-lb metal can, Fed. Spec. EE-S-631, Type II, NSN-8950-00-127-8067.

b. Salt, table, iodized fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

#37 OPERATIONAL GUIDE FOR SPAGHETTI AND MEAT SAUCE

Portion 5 oz noodles
Size: 6 oz sauce

Ingredients		Issue Unit	Formulation				Size: 6 oz sauce	
			1 Batch Noodles 1/3 Batch Sauce 350 Portions	2/3 Batch Sauce 700 Portions	Full Batch Sauce 1050 Portions	Quantity lb	Quantity lb	oz
Spaghetti (note 1)		lb	40	0				
Salt		oz	0	17 (1 lb 1 oz)				
Salad Oil		oz	0	14				
Sauce								
Beef, ground, (note 2)		lb	60	0				
Garlic pwd		g	45		85	120	0	185
Pepper, white, grd		g	45		85			130
Oregano, grd		g	35		70			130
Onion pwd		g	30		60			110
Basil, grd		g	15		35			85
Allspice, grd		g	20		40			55
Bayleaves		g	10		20			65
Cheese, grated, Parmesan (note 3)		3 oz cn	4	(13 oz)	8		(1 lb 9 oz)	30
Sugar		oz	0					12
Salt		oz	0	13		0	25 (1 lb 9 oz)	
Starch, Col Flo 67		oz	0	13		0	25 (1 lb 9 oz)	0
Tomato paste (note 4)		No. 2 1/4 cn	4	(8 lb)	8	0	13	0
Tomatoes, cn. conc. crushed (note 5)		No. 10 cn	8	(53 lb 10 oz)	16		(15 lb 12 oz) (105 lb 8 oz)	13 24
Water		gal (lb)	7	(58 lb)	13		(107 lb)	20
								(165 lb)

Total sauce volume

19 gal

37 gal

57 gal

#37 OPERATIONAL GUIDE FOR SPAGHETTI AND MEAT SAUCE

Preparation

1. Sauce Preparation

- a. Brown ground beef in steam kettle until redness disappears. Drain off fat and discard.
- b. Add spices and cheese. Mix thoroughly.
- c. Make a starch slurry with formula water. Add to kettle (note 5).
- d. Add tomato paste and crushed tomatoes to kettle (note 5).
- e. Adjust volume to 19 gal for 350 portions, 37 gal for 700 portions, and 57 gal for 1050 portions.
- f. Mix well and simmer covered for about 30 minutes. Raise temperature to 185°F (85°C) before filling.

2. Spaghetti Preparation

- a. Add water, salt, and salad oil to steam kettle. Bring to a full boil.
- b. Put spaghetti in water; stir and cook for 8 to 12 minutes until firm, but tender. Time depends on brand; check operational notes.
- c. Pour off hot water immediately and run cold water over spaghetti. Fill kettle with cold water, then drain thoroughly. Use perforated kettle lid.

3. Foil Preparation

- a. Portion 5 oz of spaghetti into each foil.
- b. Use a 6-oz ladle for the sauce. Ladle sauce over spaghetti. Filling temperature shall not be less than 160°F (71°C).
- c. Check final weight of foil. Weight shall not be more than 12 oz (note 6).
- d. Cover, label, and freeze.

#37 OPERATIONAL GUIDE FOR SPAGHETTI AND MEAT SAUCE

Operational and Ingredient Room Notes

1. Spaghetti weight increases by about 2.7 times the raw weight when cooked. Forty pounds of spaghetti should yield 110 lb of cooked spaghetti. Time difference in cooking varies with the brand procured. In general, military issue is cooked less (8 minutes) and commercial brands more (12 minutes).
2. Ground beef when cooked, yields about 65% of original weight. Sixty-six pounds of raw meat yields 40 lb of cooked, 120 lb yields 80 lb, and 185 lb yields 120 lb.
3. Grated parmesan cheese is procured in 3-oz cans. If these are not available, use the weight listed on the formulation sheet to figure the number of alternate cans.
4. Tomato paste is procured in 30-oz, 2½-size cans. If these are not available, use the weight listed on the formulation sheet to figure the number of alternate cans.
5. Canned crushed tomatoes are procured in 6 lb 9 oz, No. 10 cans. If these are not available, use the weight listed on the formulation sheet to figure the number of alternate cans. If non-concentrated crushed tomatoes are obtained, double the number of ounces of Col Flo. (If crushed tomatoes are not available, use tomato sauce or semi-condensed juice.)
6. A full 6-oz ladle (not heaping) of sauce weighs between 6.75 and 7 oz. Total weight of the foil should be not more than 12 oz.

#37 OPERATIONAL GUIDE FOR SPAGHETTI WITH MEAT SAUCE

Ingredient Source Guide

1. Meat

a. Beef, ground, local commissary, order 20-25% fat product and 3/16" (4.7 mm) final grind.

2. Dairy

a. Cheese, grated, parmesan or parmesan and romano, Italian style 3-oz or 1-lb shaker-top container, Fed. Spec. C-C-285, Type I or III, Class 1 or 2 NSN-8910-616-0160 or NSN-8910-00-782-3765.

3. Vegetables

a. Tomato paste, liquid from mature tomatoes or residual tomato material from canning heavy, medium, or light concentrate, coarse or fine texture, US Grade A, No. 2½ size can, Fed. Spec. JJJ-V-1746/22, Type I or II, concentration (b), (c), or (d), texture (1) or (2), NSN-8915-00-127-9303.

b. Tomatoes, concentrated crushed, No. 10 cans, Special Procurement.

4. Bakery and Cereal Products

Starch, Col Flo 67, Special Procurement.

5. Condiments

a. Allspice, ground 1- to 2-oz or 1-lb metal can or glass bottle. Fed. Spec. EE-S-631, Type II, NSN-8950-00-170-9562 or NSN-8950-00-519-5643.

b. Basil, sweet ground, 1 to 2-oz metal can or glass bottle, Fed. Spec. EE-S-631, Type II, NSN-8950-00-404-6066.

c. Bayleaves, whole, 1- to 2-oz metal can, Fed. Spec. EE-S-631, Type I, NSN-8950-00-170-9561.

d. Garlic powder, 3- to 4-oz container, Special Procurement.

e. Onion powder, 1-lb container, Special Procurement.

f. Oregano, ground 1- to 2-oz or 12- to 15-oz metal can or glass bottle, Fed. Spec. EE-S-631, Type II, NSN-8950-00-582-1402 or NSN-8950-00-062-8138.

g. Pepper, black, ground, 1-lb metal can, Fed. Spec. EE-S-631, Type II, NSN-8950-00-127-8067.

h. Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

6. Sugar, Confectionery

a. Sugar, refined, granulated, cane or beet, 10-lb bag, Fed. Spec. JJJ-S-791, Type I, Class (a) NSN-8925-00-127-3073.

#40 OPERATIONAL GUIDE FOR SALISBURY STEAK WITH BROWN GRAVY

 Portion 1 steak
 Size: 4 oz gravy

Ingredient	Formulation		
	Issue Unit	Quantity	Batch 350 Portions
Ground beef	lb	95	0
Milk, NFD	oz	0	21
Breadcrumbs	oz	0	110 (6 lb 14 oz)
Eggs	dz	3.5	
Pepper, black	g	30	
Salt	oz	0	21 (1 lb 5 oz)
Worcestershire Sauce (note 1)	oz	0	11
Onions (note 2)	lb	12	0 (9 lb 10 oz)
Water	gal (lb)	1	(7 lb)
<u>Gravy</u>			
Shortening	lb	5	0
Flour	oz	0	30 (1 lb 14 oz)
Starch, Col Flo 67	oz	0	45 (2 lb 13 oz)
Pepper, black	g	15	
Garlic Salt	g	15	
Kitchen Bouquet	oz	0	5
Soup & Gravy base, beef	lb	2	0
Water or stock (note 3)	gal (lb)	10	(80 lb)

Total gravy volume (note 4)

15 gal

#40 OPERATIONAL GUIDE FOR SALISBURY STEAK WITH BROWN GRAVY

Preparation

1. Meat Preparation

a. Place meat in mixing bowl, turn mixer on low. Use blade attachment. Add breadcrumbs, milk, onions, salt, pepper, eggs Worcestershire sauce, and up to 1 gal of water. Mix well.

b. Send mixture through salisbury machine using water to lubricate machine and meat. Raw steaks should weigh at least 5¼ oz.

c. Put 25 steaks on each sheet pan.

d. Place steaks in oven at 350°F (177°C) and cook to an internal temperature of 160°F (71°C).

e. If not packaged or cooked immediately, hold in 40°F (4°C) box.

2. Gravy Preparation

a. Melt shortening in steam kettle, add flour, mix well and cook for 5 minutes to make a roux.

b. Dissolve Col Flo in part of formula water (cold)

c. Add half of formula water while mixing.

d. Add Col Flo slurry, pepper, beef base, and Kitchen Bouquet. Mix well and heat until starch begins to thicken.

e. Add water until total volume reaches 13 gal of gravy per batch and heat to 185°F (85°C). Stir constantly.

3. Foil Preparation

a. Place one steak in each foil. Cooked steaks should weigh around 4-3/4 ounces.

b. Ladle 4 oz of gravy at a filling temperature of 160°F (71°C).

c. Cover, label, and freeze.

d. Total foil weight should be 8.50-9.25 oz.

#40 OPERATIONAL GUIDE FOR SALISBURY STEAK with BROWN GRAVY

Operational and Ingredient Room Notes

1. Worcestershire sauce is usually procured in 5-oz bottles. If these are not available, use the weight on the formulation sheet to figure alternates. For 350 portions, two 5-oz bottles are sufficient.
2. Onion weight is 12 lb for unpeeled, whole onions. Peeled and chopped onions, should weigh 9.6 lb. Use 9.6 lb if onions procured are peeled, trimmed, and chopped.
3. Stock from cooking steaks can be used in brown gravy to replace part of water. If stock is fatty, use only 1 gal per batch.
4. Gravy volume per batch guide:

<u>Batch</u>	<u>Portion</u>	<u>Gallon</u>
1	350	15
2	700	27
3	1050	38
4	1400	54

#40 OPERATIONAL GUIDE FOR SALISBURY STEAK WITH BROWN GRAVY

Ingredient Source Guide

1. Meat

Beef, ground, local commissary, order 20-25% fat product and 3/16" (4.7 mm) final grind.

2. Dairy

a. Eggs, shell, fresh or shell protected fresh, medium or larger, procurement Grade I, 30-dozen box, Fed. Spec. C-E-271, Condition 1 or 2. NSN-8910-00-043-3198.

b. Milk, nonfat, dry, conventional, low heat, 5-lb can, Fed. Spec. C-M-350, Type I, Style C (general purpose use), NSN-8910-00-982-2779.

3. Vegetables

Onions, dry, any variety except Sweet Spanish, US No. 1 Grade, 2-in. minimum diameter for 70% or more, Fed. Spec. HHH-V-1744/40, NSN-8915-00-616-0200.

4. Bakery

a. Breadcrumbs, breading, 10-oz can, 5-lb or 50-lb bag, MIL-F-3501, Type III, NSN-8920-00-464-2224 or NSN-8920-00-141-0136.

b. Flour, wheat, general purpose or bread flour (hard), bleached, enriched, 10-lb bag, Fed. Spec. N-F-481, Type I or III, Class B, Style 2, NSN-8920-00-140-7748 or NSN-8920-00-165-6863.

5. Starch

Starch, Col Flo 67, Special Procurement.

6. Soup and Bouillon

Soup and gravy base, instant, beef flavored, 8-oz or 1-lb jar, Fed. Spec. EE-B-575, Type I, Class 1, Style A, NSN-8935-00-753-6423.

7. Food Oil and Fats

Shortening compound, general-purpose type, regular, all vegetable oil, 3-lb or 5½-lb can, Fed. Spec. EE-S-321, Type II, Class 2(b), NSN-8945-00-080-9379 or NSN-8945-01-066-8210.

#40 OPERATIONAL GUIDE FOR SALISBURY STEAK WITH BROWN GRAVY

Ingredient Source Guide (cont'd)

8. Condiments

a. Pepper, black, ground, 1-lb metal can, Fed. Spec. EE-S-631, Type II, NSN-8950-00-127-8067.

b. Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

c. Kitchen Bouquet, 1-gal jug. Special Procurement.

d. Worcestershire sauce, 5-oz bottle, Fed. Spec. EE-W-600, as modified by bottle size, NSN-8950-01-033-4199.

#41 OPERATIONAL GUIDE FOR BBQ CHICKEN

Portion 1 breast
Size 1 thigh
4 oz sauce

Ingredient	Issue Unit	Formulation	
		Quantity	Batch 400 Portions
Chicken, breasts thighs (note 1)	pc	400	lb oz
	pc	400	
Shortening (noncost issue)	lb		1 0
<u>Sauce</u>			
Worcestershire sauce (note 2)	oz		0 55 (3 lb 7 oz)
Catsup (note 3)	No. 10 cn	11	(76 lb 2 oz)
Mustard (note 4)	lb		5 0 (2 jrs, 3 cns)
Brown Sugar	lb		10 0
Salt	oz		0 36 (2 lb 4 oz)
Pepper, black, grd	g	20	
Cayenne, pepper	g	20	
Margarine	lb		4 0
Vinegar, white	oz		0 114 (7 lb 2 oz)
Onions, fresh, chopped (note 5)	lb		12 0 (9 lb 10 oz)
Water	gal (lb)	1.5	(12 lb)
Total sauce volume (note 6)		15.5 gal	

#41 OPERATIONAL GUIDE FOR BBQ CHICKEN

Preparation

1. Preparation of Chicken

- a. Wash chicken parts in steam kettle; drain.
- b. Place chicken on greased sheet pans (60 thighs or 40 breasts per tray).
- c. Place in preheated oven 375°F (190°C) until internal temperature reaches 175°F (79°C). Check temperature of at least three pieces per tray with the end of thermometer next to the bone.
- d. Coordinate chicken preparation with sauce production so chicken is not held before step 3. If chicken must be held, cover and keep at 40°F (4°C).

2. Preparation of Sauce

- a. Peel and chop onions.
- b. Mix sauce ingredients together in steam kettle. Measure volume.
- c. Heat sauce to boiling, reduce heat, cover and simmer until ingredients are well blended.
- d. Adjust volume before serving to volume measured in 2b.
- e. Heat to at least 185°F (85°C).

3. Preparation of Foils

- a. Place one breast and one thigh in each foil.
- b. Ladle 4 oz of sauce over chicken at a sauce filling temperature of 160°F (71°C).
- c. Cover, label, and freeze.

#41 OPERATIONAL GUIDE FOR BBQ CHICKEN

Operational and Ingredient Room Notes

1. Four hundred breasts and 400 thighs are required for batch production. To determine number of pounds required, consult reference card on chicken brands in ingredient room.
2. Worcestershire sauce is usually procured in 5-oz bottles. If these are not available, use the weight listed on the formulation sheet.
3. Catsup is usually procured in 7-lb 2-oz, No. 10 cans. If these are not available use the weight listed on the formulation page to figure alternate containers.
4. Mustard is either procured in 2½-size cans at 1.75 lb or in 2-lb jars. Use three 2½-size cans or two 2-lb jars for a 400-portion batch.
5. Fresh unpeeled onions yield about 80% when peeled, trimmed, and chopped. Twelve pounds should yield not less than 9 lb 10 oz of chopped onions.
6. Sauce volume per batch:

<u>Batch</u>	<u>Portions</u>	<u>Gallons</u>
1	400	15.5
2	800	28
3	1200	41
4	1600	55

7. If sauce thickens excessively, add hot water to keep original thickness.

#41 OPERATIONAL GUIDE FOR BBQ CHICKEN

Ingredient Source Guide

1. Meat

Chicken, breast or thigh, frozen, broiler or fryer, ready to cook, US Grade A, 15-lb maximum, intermediate box, Fed. Spec. PP-C-248, Type II or IV, Class I, Style 5, NSN-8905-00-582-1383 and NSN-8905-00-582-1394

2. Dairy and Food Fats

a. Margarine, all vegetable fats and oils, vitamin A added, colored, one-pound print or four prints of 1/4 lb each in wrapper, Fed. Spec. EE-M-45, Type I, Class 1, NSN-8945-00-616-0078.

b. Butter, (surplus donated), salted, Grade B or better, 1-lb print or 4 prints of 1/4 lb each (not authorized for commissary resale), NSN-8910-00-782-3193.

c. Shortening compound, general purpose type, regular, all vegetable oil, 3-lb or 5½-lb can, Fed. Spec. EE-S-321, Type II, Class 1(b), NSN-8945-00-080-9379 or NSN-8945-00-066-8210.

3. Vegetables

Onions, dry, any variety except Sweet Spanish, US No. 1 Grade 2, 2-in. minimum diameter for 70% or more, Fed. Spec. HHH-V-1744/40, NSN-8915-00-616-0200.

4. Sugar

Sugar, brown, light or medium, 1-lb bag or box, or 2-lb polyethylene bag, Fed. Spec. JJJ-S-791, Type II, Class (a) or (b), NSN-8925-00-127-7325 or NSN-8925-00-566-7506.

5. Condiments

a. Catsup, tomato, US Grade A, No. 10-size can, Fed. Spec. JJJ-V-1746/25, Type I or II, flavor Style 1, NSN-8950-00-127-9789.

b. Mustard, prepared, light 2-lb jar or no. 2½-size can, Fed. Spec. EE-M-821, Type I, NSN-8950-00-127-8024 or 8950-00-543-7698.

c. Pepper, black, ground, 1-lb metal can, Fed. Spec. EE-S-631, Type II, NSN-8950-00-127-8067.

#41 OPERATIONAL GUIDE FOR BBQ CHICKEN

Ingredient Source guide (cont'd)

d. Pepper, red, ground, 1- to 2-oz metal can or glass bottle, Fed. Spec. EE-S-631, NSN-8950-00-170-9565.

e. Salt, table, iodized, fine granulated or evaporated, 5-lb bag. Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

f. Vinegar, cider or distilled, 50-grain strength, 32-oz bottle, Fed. Spec. Z-V-401, Type I or II, NSN-8950-00-221-0297.

g. Worcestershire sauce, 5-oz bottle, Fed. Spec. EE-W-600, modified by bottle size, NSN-8950-01-033-4199.

#42 OPERATIONAL GUIDE FOR MEATLOAF AND GRAVY

Portion 5 oz cooked meat
Size: 4 oz gravy

Ingredient	Issue Unit	Formulation	
		Batch - One Mixer 250 Portions - 22/5-lb loaves	Quantity
<u>Meatloaf</u>			lb oz
Beef, ground	lb	90	0
Eggs, fresh, med-large	dz	3	
Salt	oz	0	15
Onions, fresh, chopped (note 1)	lb	9	0 (7 lb 4 oz)
Peppers, green, fresh, chopped (note 2)	lb	6	8 (5 lb 8 oz)
Bread crumbs	oz	0	70 (4 lb 6 oz)
Pepper, black, grd	g	35	
Celery salt	g	35	
<u>Gravy</u>			
Shortening	lb	3	8
Flour	oz	0	22 (1 lb 6 oz)
Starch, Col Flo 67	oz	0	34 (2 lb 2 oz)
Pepper, black, grd	g	10	
Kitchen Bouquet	oz	0	3
Beef base	lb	1	0
Water (note 3)	gal (lb)	7.5	(62 lb)

Total gravy volume (note 4)

8.5 gal

#42 OPERATIONAL GUIDE FOR MEATLOAF AND GRAVY

Preparation

1. Ingredient Preparation

- a. Peel and trim onions. Chop in dicer.
- b. Wash and trim green peppers. Chop in dicer.

2. Meatloaf Preparation

- a. Place meat in mixer. Use the blade attachment.
- b. Turn mixer on low speed. Add eggs to mixing bowl.
- c. Add remaining meatloaf ingredients and mix until well blended.
- d. Divide meatloaf mixture into 5 lb lots.
- e. Form into 6-in x 12-in x 6-in loaf pans. Use water to decrease sticking and pack firmly to avoid air pockets.
- f. Each batch yields 22 loaves.
- g. Place six loaves in each large ration pan; add about 1 lb of water to prevent sticking.
- h. Bake at 350°F (177°C) to an internal temperature of 160°F (71°C).

3. Gravy Preparation

- a. Melt shortening in steam kettle, add flour, mix well and cook for five minutes.
- b. Dissolve starch in part of formula water (cold). For one batch use 2 gal.
- c. Add pepper, beef base, and Kitchen Bouquet. Mix well and heat.
- d. Add half of formula water while mixing. Slowly add Col Flo slurry.
- e. Add water until volume in kettle reaches 8.5 gal of gravy per batch and heat to 185°F (85°C). Stir continuously.

#42 OPERATIONAL GUIDE FOR MEATLOAF AND GRAVY

Preparation (cont'd)

4. Foil Preparation

- a. Slice cooked meatloaf into 5-oz portions. Each meatloaf yields 11 to 12 servings.
- b. Place a slice of meatloaf in each foil and ladle 4 oz of gravy at 160°F (71°C) over each slice.
- c. Cover, label, and freeze.
- d. Total foil weight should be between 9-9.5 oz.

#42 OPERATIONAL GUIDE FOR MEATLOAF AND GRAVY

Operational and Ingredient Room Notes

1. Nine pounds of raw unpeeled onions yields about 7 lb 4 oz of peeled, trimmed and chopped onions. If frozen, chopped onions are procured, use 7 lb 4 oz to figure the number of packages.
2. Six pounds 8 oz of raw whole peppers yields 5 lb 8 oz of trimmed, diced peppers. If frozen, chopped peppers are procured, use 5 lb 8 oz to figure the number of packages.
3. Stock obtained from cooked meatloaf may be used to replace part of water in gravy. If stock is fatty, limit this replacement to $\frac{1}{2}$ gal per batch.
4. Gravy volume per batch:

<u>Batch</u>	<u>Portions</u>	<u>Gallons</u>
1	250	9
2	500	19
3	750	27
4	1000	36
5	1250	44
6	1500	53

#42 OPERATIONAL GUIDE FOR MEATLOAF AND GRAVY

Ingredient Source Guide

1. Meat

Beef, ground, local commissary, order 20-25% fat product and 3/16" (4.7 mm) final grind.

2. Dairy

Eggs, shell, fresh or shell protected fresh, medium or large, procurement Grade I, 30-dozen box, Fed. Spec. C-E-271, Condition 1 or 2, NSN-8910-00-043-3198.

3. Vegetables

Onions, dry, any variety except Sweet Spanish, US No. 1 Grade, 2-in. minimum diameter for 70% or more, Fed. Spec. HHH-V-1744/40, NSN-8915-00-616-0200.

b. Peppers, sweet, fresh, green, California Wonder variety, bell or bullnose type, US No. 1 Grade, 2½-in. minimum diameter, Fed. Spec. HHH-V-1744/28, NSN-8915-00-127-8006.

4. Bread and Flour

a. Breadcrumbs, breading, 10-oz can, 5-lb package or 50-lb bag, MIL-F-3501, Type III, NSN-8920-00-464-2224 or 8920-00-141-0136.

b. Flour, wheat, general purpose or bread flour (hard), enriched, 10-lb bag, Fed. Spec. N-F-481, Type I or III, Class B, Style 2, NSN-8920-00-140-7748 or NSN-8920-00-165-6863.

c. Starch, Col Flo 67. Special Procurement.

5. Soups and Bouillon

a. Soup and gravy base, instant, beef-flavored, 8-oz or 1-lb jar, Fed. EE-B-575, Type I, Class 1, Style A, NSN-8935-00-753-6423.

b. Kitchen Bouquet, 1-gal jug. Special Procurement.

6. Food Oils and Fats

Shortening compound, general-purpose type, regular, all vegetable oil, 5½-lb can or 3-lb can, Fed. Spec. EE-S-321, Type II, Class 1(b), NSN-8945-01-066-8210 or NSN-8945-00-080-9379.

#42 OPERATIONAL GUIDE FOR MEATLOAF AND GRAVY

Ingredient Source guide (cont'd)

7. Condiments

a. Celery salt, 3- to 4-oz container or 1-lb container, MIL-S-43855, Type I, NSN-8950-00-127-8044 or NSN-8950-00-535-2872.

b. Pepper, black, ground, 1-lb metal can, Fed. Spec. EE-S-631, Type II, NSN-8950-00-127-8067.

#44 OPERATIONAL GUIDE FOR STEAMED RICE

Portion 4 oz rice
Size: 1 oz water

Formulation				
Ingredient	Issue Unit	One Batch-One Steamer Load 18 Tray = 600 Portions		Temporary Batch 30 Trays = 1000 Portions
		Quantity	lb oz	Quantity lb oz
Rice, converted	lb	55	0 (3 lb/tray)	90 0
Salt	oz	0	18 (1 lb 2 oz)	0 30 (1 lb 14 oz)
Margarine/Butter	lb	9	0	15 0
Water for cooking	gal	11	(5 lb/tray)	19

Water for foils (hot 160°F (71°C)) gal 5 gal 8 gal

#44 OPERATIONAL GUIDE FOR STEAMED RICE

Preparation

1. Rice Preparation

a. Place 3 lb of dry, converted rice in each steamer tray. Avoid weighing each time by weighing rice into a gallon container the first time and marking the height.

b. Pour 5 lb of water over rice in each tray. Measure volume of 5 lb of water in gallon container and mark height.

c. Sprinkle one ounce of salt evenly over rice and water.

d. Add $\frac{1}{2}$ lb of butter or margarine in two or three pieces to rice mix.

e. Steam under pressure until water is absorbed by rice.

2. Foil Preparation

a. Place 4 oz of cooked rice in each foil (4-oz scoop).

b. Pour 1 oz of hot water (160°F (71°C)) over rice portion (1-oz scoop).

c. Cover, label, and freeze.

d. Total weight of foil shall not exceed 5 oz.

#44 OPERATIONAL GUIDE FOR STEAMED RICE

Ingredient Source Guide

1. Dairy and Food Oils and Fats

a. Margarine, all vegetable fats and oils, vitamin A added, colored, 1-lb print or 4 prints of 1/4 lb each in wrapper, Fed. Spec. EE-M-45, Type I, Class 1, NSN-8945-00-616-0078.

b. Butter (surplus donated), salted, Grade B or better, 1-lb print or 4 prints of 1/4 lb each (not authorized for Commissary resale), NSN-8910-00-782-3193.

2. Bakery and Cereal Products

a. Rice, converted, Special Procurement.

b. Rice, parboiled, long grain, enriched, US No. 1 Grade or US No. 2 Grade, (except that not more than 0.5% by weight red rice and damaged kernels will be permitted), (special grades-parboiled, light or parboiled), 10-lb bag, Fed. Spec. N-R-35, Class I, NSN-8920-00-530-2185.

3. Condiments

Salt, table, iodized, granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

#45 OPERATIONAL GUIDE FOR MACARONI AND CHEESE

Portion
Size: 5½ oz

Ingredients		Formulation											
		One Batch Macaroni 1/4 Batch Sauce 575 Portions			1/2 Batch 1150 Portions			3/4 Batch Sauce 1725 Portions			Full Batch Sauce 2300 Portions		
Issue Unit	Quantity	lb	oz	Quantity	lb	oz	Quantity	lb	oz	Quantity	lb	oz	Quantity
Macaroni, dry (Note 1)	lb	40	0										
Sauce Butter or Margarine	lb	2	0		4	0		6	0		8	0	
Flour	oz	0	13		0	26 (1 lb 10 oz)		0	38 (2 lb 6 oz)		0	51 (3 lb 3 oz)	
Salt	oz	0	9		0	18 (1 lb 2 oz)		0	26 (1 lb 10 oz)		0	34 (2 lb 2 oz)	
Pepper, white, grd	g	25		50			71			95			
Milk, NFD	oz	0	76 (4 lb 12 oz)		0	148 (9 lb 4 oz)		0	217 (13 lb 9 oz)		0	289 (18 lb 1 oz)	
CheezTang, (R)* Dehy Cheddar, orange (Note 2)	lb	6	0		11	0		16	0		21	0	
CheezTang, Dehy Cheddar, white	lb	10	0		20	0		29	0		38	0	
Starch, Col Flo 67	oz	0	13		0	26 (1 lb 10 oz)		0	38 (2 lb 6 oz)		0	51 (3 lb 3 oz)	
Water	gal	10		20			30			40			
Total Volume of Sauce (before cooking) (Note 3)		14 gal		25 gal			38 gal			51 gal			

*CheezTang is a registered trade name of Kraft Foods. Citation at trade names does not constitute official endorsement or approval of such products.

#45 OPERATIONAL GUIDE FOR MACARONI AND CHEESE

Preparation

1. Macaroni Preparation

- a. Add 40 lb of macaroni slowly to boiling water and stir to avoid sticking.
- b. Boil for not more than 5 minutes.
- c. Cool immediately by pouring off hot water then running cold water over macaroni. Fill kettle with cold water then drain through perforated lid.
- d. Chill macaroni in 40° (4°C) box until step 3.

2. Sauce Preparation (Note 4)

- a. Melt butter or margarine in kettle. Blend in flour and cook for 5 minutes to make a roux.
- b. Reconstitute milk with warm water, use part of formula water.
- c. Add milk, salt, and pepper to kettle and stir well.
- d. Add powdered cheese to kettle while stirring. Turn on heat and stir until sauce is smooth.
- e. Prepare a starch slurry with part of formulation water. Add to kettle and heat with stirring to 185°F (85°C).
- f. Add water to achieve the final sauce volume on formulation sheet. Heat to 185°F (85°C).

NOTE: SAUCE WILL APPEAR THIN; HOWEVER IT WILL THICKEN WHEN REHEATED WITH MACARONI

3. Combining sauce and macaroni

- a. For each serving bowl of macaroni add 7 gal of sauce. One batch of macaroni yields 2 serving bowls (50 lb each). Mix sauce into macaroni and transfer to packaging line.

4. Assembly of foils

- a. Place 5.5 oz of macaroni and cheese sauce mixture into each foil.
- b. Cover, label, and freeze.

#45 OPERATIONAL GUIDE FOR MACARONI AND CHEESE

Operational and Ingredient Room Notes

1. Macaroni for a frozen reheated product must be initially undercooked. Yield should be between a 2.3 to 2.5-fold increase, which means that 40 lb of dry macaroni will yield between 92 and 100 lb of cooked macaroni. Overcooking will drastically increase the fold count and decrease final product quality. Cook macaroni and remove from water promptly. Cool in 40°F (4°C) box before mixing with hot sauce.

2. If powdered cheese is not available, fresh cheddar cheese may be substituted. Use amounts of fresh cheese and starch listed below.

<u>Portions</u>	<u>Shredded Fresh Cheese</u>	<u>Col Flo 67</u>
550	27 lb	26 oz
1100	51 lb	52 oz
1650	75 lb	76 oz
2200	98 lb	102 oz

Total volume of sauce remains the same.

3. After sauce is cooked, the volume will be less than the original. For example, for 1650 portions sauce will start at 38 gal and decrease to about 36 gal. A full ladle (2 oz) should weight no more than 2¼ oz. The total weight of the foil shall not exceed 5.75 oz.

4. Trio^{(R)*} cheese sauce mix can be substituted for the sauce formula. Follow the following procedure:

a. Macaroni preparation

(1) Follow steps a, b and c of preparation page.

(2) After macaroni is thoroughly drained, mix in 2 lb of margarine, 26 g of white pepper, 16 g of MSG, and 4 oz of salt.

(3) Chill macaroni in 40°F (4°C) box until step (3) of preparation.

b. Sauce preparation (Trio mix)

(1) Place 11 gal of boiling (not less than 200°F (93°C) water into mixing bowl.

(2) Mix on low speed and gradually add 10 2-lb bags of Trio cheese sauce mix.

(3) Mix on medium speed and gradually increase volume of sauce to 14 gal.

*Trio is a registered trade name of the Carnation Corporation. Citation of trade names does not constitute an official endorsement or approval of such products.

#45 OPERATIONAL GUIDE FOR MACARONI AND CHEESE

Ingredient Source Guide

1. Dairy and Food Oils and Fats

a. Margarine, all vegetable fats and oils, vitamin A added, colored, 1 lb print or 4 prints at $\frac{1}{4}$ lb each in wrapper, Fed. Spec. EE-M-45, Type I, Class 1, NSN-8945-00-616-0078.

b. Butter (surplus donated), salted, Grade B or better, 1-lb print or 4 prints at $\frac{1}{4}$ lb each (not authorized for commissary resale), NSN-8910-00-782-3193.

c. Milk, nonfat, dry, conventional, low heat, 5-lb can, Fed. Spec. C-M-350, Type I, Style C (general purpose use), NSN-8910-00-982-2779.

d. Cheese, CheezTang, orange and white, Special Procurement, Kraft, Denver Food Service, Tel. No. (303)399-2224.

e. TrioCheese Sauce Mix, Special Procurement, Carnation Food Service, Nobel Suppliers, Denver, CO.

2. Bakery

a. Flour, wheat, general purpose, or bread flour (hard), enriched, 10-lb bag, Fed. Spec. N-F-481, Type I or III, Class B, Style 2, NSN-8920-00-140-7748 or NSN-8920-00-165-6863.

b. Macaroni, elbow form, regular cooking, enriched, 1-lb box, Fed. Spec. N-M-51, Group I, Type A, Class 2, Style a, Form ii, NSN-8920-00-782-2979.

3. Condiments

a. Pepper, white, ground, 3- to 4-oz metal can, Fed. Spec. EE-S-631, Type II, NSN-8950-00-245-2302.

b. Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

Starch

Starch, Col Flo 67, Special Procurement.

#46 OPERATIONAL GUIDE FOR MASHED POTATOES

Portion
Size: 5½ oz

<u>Formulation</u>			Batch = One Mixer 400 Portions	
Ingredient	Issue Unit	Quantity	lb	oz
Potatoes, canned, pwd (note 1)	No. 10 cn	3.5		(21 lb 7oz)
Milk, NFD	oz		0	51 (3 lb 3 oz)
Margarine/Butter	lb		4	0
Salt	oz		0	8
Water, hot (note 2)	gal	14		(18 (3/4-full gal) (113 lb)

#46 OPERATIONAL GUIDE FOR MASHED POTATOES

Preparation

1. Prepreparation

- a. Fill steam kettle with water and heat until boiling for 10 minutes.
- b. Open cans of mashed potatoes and remove instruction paper.

2. Product Preparation

- a. Add $3\frac{1}{2}$ cans of potatoes into mixing bowl. Attach wire whip.
- b. Add NFD milk, margarine and salt to potatoes.
- c. Gradually add water while mixing ingredients. The best method is to fill the gallon containers $\frac{3}{4}$ full each time. Fourteen gallons of water is required for each batch. In $\frac{3}{4}$ gal, this would be 18 fills (Note 2).

3. Foil Preparation (see Note 3)

- a. Portion $5\frac{1}{2}$ oz of mashed potatoes into each foil (4-oz scoop).
- b. Filling temperature shall be not less than 160°F (71°C) (Note 4).
- c. Cover, label, and freeze.

#46 OPERATIONAL GUIDE FOR MASHED POTATOES

Operational and Ingredient Room Notes

1. A No. 10 can of mashed potato granules weighs 6 lb 2 oz. In the formulation for the batch, $3\frac{1}{2}$ cans will weigh 21 lb 7 oz. Use this weight if the potatoes are not procured in No. 10 cans.
2. Potato consistency may vary with the source of procurement. Use at least eighteen $\frac{3}{4}$ gal fills of water; up to an additional $\frac{1}{2}$ gal of water may be needed to ensure easy serving.
3. Rubber spatulas should be used to remove all the finished product from the mixing bowls. Incomplete cleaning of the bowls will result in reduced yield.
4. This serving temperature will be difficult to maintain; however, to ensure safety, maintain a hot water temperature of at least 190°F (88°C).

#46 OPERATIONAL GUIDE FOR MASHED POTATOES

Ingredient Source Guide

1. Dairy and Food Oils and Fats

a. Margarine, all vegetable fats and oils, vitamin A added, colored, 1 lb print or 4 prints of 1/4 lb each in wrapper, Fed. Spec. EE-M-45, Type 1, Class 1, NSN-8945-00-616-0078.

b. Butter (surplus donated), salted, Grade B or better, 1-lb print or 4 prints at 1/4 lb each (not authorized for commissary resale), NSN-8910-00-782-3193.

c. Milk nonfat, dry, conventional, low heat, 5-lb can, Fed. Spec. C-M-350, Type I, Style C (general purpose use), NSN-8910-00-982-2779.

2. Vegetables

Potatoes, white, instant, granules without desiccant, #10 size can, Fed. Spec. JJJ-P-630, Type II, Style A, NSN-8915-00-164-6876.

3. Condiments

Salt, table, iodized, granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

#48 OPERATIONAL GUIDE FOR GLAZED SWEET POTATOES

Portion 1 or 2 sweet potatoes
Size: 2 oz syrup

Ingredient	Issue Unit	<u>Formulation</u>	
		Quantity	Batch 300 Portions
Sweet Potatoes (note 1)	2½ cn	75	lb oz
<u>Glaze</u>			
Margarine/Butter	lb	3	0
Brown sugar	lb	12	0
Salt	oz	0	6
Starch, Co. Flo 67	oz	0	15
Water	gal	4	(48 lb)

Total glaze volume (note 2)

6 gal

#48 OPERATIONAL GUIDE FOR GLAZED SWEET POTATOES

Preparation

1. Syrup Preparation

a. If potatoes are issued in syrup, drain syrup and heat to 185°F (85°C) in tilt fryer. Adjust volume to 6 gal per batch with hot water (160°F (71°C)).

b. If potatoes are issued without syrup, prepare as follows:

(1) Melt margarine or butter in tilt fryer. Mix in brown sugar and salt.

(2) Mix Col Flo with part of formula water (about 1 gal per batch).

(3) Adjust volume to six gallons per batch and heat to 185°F (85°C).

2. Foil Preparation

a. Place one large or two medium sweet potatoes in a foil.

b. Add 2 oz of syrup at a filling temperature of not less than 160°F (71°C).

c. The weight of the potatoes should be between 4.5 and 5 oz. Total foil weight should not exceed 7 oz with syrup.

#48 OPERATIONAL GUIDE FOR GLAZED SWEET POTATOES

Operational and Ingredient Room Notes

1. Sweet potatoes are usually procured in No. 2½ size cans with a drained weight of 1.19 lb (75 cans per batch). Other cans available are the No. 3 squat size can at 0.94 lb drained weight (95 cans per batch), and the No. 3 cylinder can at 2.5 lb drained weight (30 cans per batch).

2. Glaze volume per batch guide:

<u>Batch</u>	<u>Portions</u>	<u>Gallons</u>
1	300	6
2	600	11
3	900	16
4	1200	21
5	1500	27

#48 OPERATIONAL GUIDE FOR GLAZED SWEET POTATOES

Ingredient Source Guide

1. Vegetables

Potatoes, sweet, whole or whole and pieces, heavy syrup or vacuum pack, US Grade A, No. 3 squat size can, No. 2½ size can, or No. 3 vacuum size can. Fed. Spec. JJJ-V-1746/15, Style I or II, Type (a) (b), NSN-8915-00-616-0221, NSN-8915-00-127-8892, or NSN-8915-00-634-2441.

2. Dairy, Food Oils and Fats

a. Margarine, all vegetable fats and oils vitamin A added, colored, 1-lb print or 4 prints of 1/4 lb each in wrapper, Fed. Spec. EE-M-45, Type 1, Class I, NSN-8945-00-616-0078.

b. Butter (surplus donated) salted, Grade B or better, 1-lb print or 4 prints of 1/4 lb each (not authorized for Commissary resale), NSN-8910-00-782-3193.

3. Sugar and Confectionery

Sugar, brown, light or medium, 1-lb or 2-lb bag or box, Fed. Spec. JJ-S-791, Type II, Class (a) or (b), NSN-8925-00-127-7325 or NSN-8925-00-566-7506.

4. Condiments

Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

5. Starch

Starch, Col Flo 67, modified starch, Special Procurement.

#49 OPERATIONAL GUIDE FOR AU GRATIN POTATOES

Portion
Size: 5.5 oz sauce and potatoes

Formulation						
Ingredient	Issue Unit	One Batch Potatoes		2/3 Batch Sauce		Full Batch Sauce
		1/3 Batch Sauce	2/3 Batch Sauce	1100 Portions	1650 Portions	1650 Portions
		lb	oz	Quantity	lb	oz
Potatoes, dehyd. sliced (Note 1)	lb (bags)	25	0 (5 bags)			
Soup & Gravy base, Chix	lb	1	0			
Sauce (Notes 2, 3)	lb	7	0	15	0	0
Margarine or butter	oz	0	16 (1 lb)	0	31 (1 lb 5 oz)	46 (2 lb 14 oz)
Flour	oz	0	14	0	27 (1 lb 11 oz)	41 (2 lb 9 oz)
Salt	g	30		55		
Pepper, white, grd.	g	30		55		
Nutmeg, grd.	g	55		110		
Garlic, pwd.	oz	0	89 (5 lb 9 oz)	0	175 (10 lb 15 oz)	261 (16 lb 5 oz)
Milk, NFD	lb	2	8	5	0	8
CheezTang, orange	lb	20	0	40	0	0
CheezTang, white	oz	0	18 (1 lb 2 oz)	0	37 (2 lb 5 oz)	55 (3 lb 7 oz)
Starch, Col Flo 67	gal	11	(90 lb)	21	(176 lb)	(260 lb)
Water						
Total final sauce volume		17 gal		32 gal		50 gal

#49 OPERATIONAL GUIDE FOR AU GRATIN POTATOES

Preparation

1. Potato Preparation (one batch)

a. Add 25 lb (5 5-lb bags) of dry sliced potatoes to boiling water and stir to avoid sticking. Add 1 lb of chicken soup and gravy base.

2. Cook for only 2 to 3 minutes. DO NOT OVERCOOK.

c. Pour flavored hot water off potatoes quickly and drain well. One batch fills two serving bowls. One or two pounds of cold water may be added for easy serving.

2. Sauce Preparation (Note 2, 3)

a. Melt butter or margarine in a steam kettle. Blend in flour and cook for 5 minutes to make a roux.

b. Reconstitute milk in warm water, using part of formula water.

c. Add milk, salt, pepper, garlic, and nutmeg to kettle and stir well.

d. Add powdered cheese to kettle while stirring. Turn on heat and stir until sauce is smooth.

e. Prepare a starch slurry with part of formula water. Add slurry to kettle and heat with stirring to 185°F (85°C).

f. Add water to volume on formulation sheet for final sauce volume for the batch.

NOTE: SAUCE WILL APPEAR THIN; HOWEVER, IT WILL THICKEN WHEN REHEATED.

3. Assembly of Foils

a. Add 2.5 oz of cooked potatoes to each foil, using slotted spoons.

b. Ladle 3.5 oz of sauce over potatoes at a serving temperature of 160°F (71°C). (Use a 4-oz ladle)

c. Check final weight. It should be between 6-6½ oz.

d. Cover, label, and freeze.

#49 OPERATIONAL GUIDE FOR AU GRATIN POTATOES

Operational and Ingredient Room Notes

1. Sliced dehydrated potatoes, when cooked, increase by weight almost 3.5 times. Twenty-five pounds of potatoes should yield about 86 pounds of cooked potatoes. Overcooking (more than 3 minutes) should be strictly avoided because it will result in soggy potatoes that fall apart when filled and also in the final reheated product.
2. If powdered cheese is not available, fresh cheddar cheese (shredded) may be substituted. Eliminate margarine from the formula and increase the starch and the cheese weights as indicated below. When using fresh cheese, care must be taken to melt cheese completely and to achieve a final temperature of 160°F (71°C) for several minutes.

<u>Portions</u>	<u>Fresh Cheese</u>	<u>Starch (Col Flo)</u>
550	38 lb	36 oz (2 lb 4 oz)
1100	75 lb	74 oz (4 lb 10 oz)
1650	112 lb	110 oz (7 lb)

Total sauce volume remains the same.

3. Trio cheese sauce mix may also be substituted for formula sauce. Follow the following procedure:

- a. Potato preparation (one batch)

- (1) Follow steps a, b, and c of preparation page, except do not add cold water.

- (2) Melt 2 lb of margarine, 25 g of white pepper, 16 g of MSG, and 4 oz of salt, and pour half over each bowl of potatoes.

- b. Sauce preparation (Trio mix)

- (1) Place 11 gal of boiling (not less than 200°F, 93°C) water into mixing bowl.

- (2) Mix on low speed and gradually add 12 2-lb bags of Trio cheese sauce mix.

- (3) Mix on medium speed and gradually increase volume to 14 gal.

#49 OPERATIONAL GUIDE FOR AU GRATIN POTATOES

Ingredient Source Guide

1. Dairy and Food Oils and Fats

a. Butter (surplus donated), salted, Grade B or better, 1-lb print or 4 prints of 1/4 lb each, NSN-8910-00-782-3193.

b. Cheese, CheezTang, orange and white, Special Procurement, Kraft, Denver Food Service Tel. No. (303)399-2224.

c. Margarine, all vegetable fats and oils, vitamin A added, colored, 1-lb print or 4 prints of 1/4 lb each in wrapper, Fed. Spec. EE-M-45, Type I, Class 1, NSN-8945-00-616-0078.

d. Milk, nonfat, dry, conventional, low heat, 5-lb can, Fed. Spec. C-M-350, Type I, Style C, general purpose, NSN-8910-00-982-2779.

e. Trio Cheese Sauce Mix, Special Procurement, Carnation Food Service, Denver, CO.

2. Fruits and Vegetables

Potatoes, white, dehydrated, uncooked, slices, w/o dessicant, 8% moisture content, 5-lb polylaminated or Kraft bag, Fed. Spec. JJJ-P-630, Type III, NSN-8915-00-139-7426.

3. Flour

a. Flour, wheat, general purpose or bread flour (hard), enriched, 10-lb bag, Fed. Spec. N-F-481, Type I, III, Class B, Style 2, NSN-8920-00-140-7748 or NSN-8920-00-165-6863.

4. Starch

Starch, Col Flo 67, modified starch. Special Procurement.

5. Condiments

a. Garlic, Powder. Special Procurement.

b. Nutmeg, ground, 1- to 2-oz metal can or glass bottle, or 1-lb metal can, Fed. Spec. EE-S-631, Type II, NSN-8950-00-127-8047 or NSN-8950-00-538-1570.

c. Pepper, white ground, 3- to 4-oz metal can. Fed. Spec. EE-S-631, NSN-8950-00-245-2302, Type II.

d. Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

#53 OPERATIONAL GUIDE FOR MIXED VEGETABLES WITH BUTTER SAUCE

Portion 3.5 oz vegetables
Size: 1.5 oz gravy

Formulation		Size: 1.5 oz gravy
Ingredient	Issue Unit	Batch - One Steamer, 18 trays, 3 Boxes/Tray 600 servings
		Quantity
Mixed vegetables, frozen (cases)	lb (boxes, cases)	lb oz 135 0 (54 boxes, 4.5)
Butter Sauce (note 1)		
Margarine or butter	lb	13 0
Starch, Col Flo 67	oz	0 35 (2 lb 3 oz)
Salt	oz	0 14
Sugar, granulated	oz	0 14
Water	gal (lb)	6 (49 lb)

Total volume of butter sauce
(note 2)

8 gal/batch

#53 OPERATIONAL GUIDE FOR MIXED VEGETABLES WITH BUTTER SAUCE

Preparation

1. Vegetable Preparation

- a. Tap boxes of vegetables lightly to break up solid blocks.
2. Open frozen mixed vegetable boxes with a knife and put the contents of three boxes (7.5 lb) into each perforated steamer tray.
- c. Place 18 trays of vegetables in a steamer.
- d. Cook until product reaches 155°F (68°C).

2. Sauce Preparation

- a. Melt butter or margarine in a steam kettle.
- b. Add salt and sugar.
- c. Dissolve Col Flo thoroughly in part of the formula water.
- d. Add remaining water and dissolved Col Flo to butter mixture and heat with stirring until the sauce reaches 185°F (85°C).
- e. The final volume of the sauce equals 8 gal per batch (note 2).

3. Foil Preparation

- a. Place 3.5 oz of mixed vegetables and 1.5 oz of butter sauce in each foil. Use 4-oz scoop size for mixed vegetables and 2 oz for butter sauce. Filling temperature of the sauce shall be 160°F (71°C).
- b. Total foil weight should not exceed 5.25 oz.
- c. Cover, label, and freeze.

#53, 54, 57, 58 OPERATIONAL GUIDE FOR VEGETABLES WITH BUTTER SAUCE

Operational and Ingredient Room Notes

1. If the margarine or butter is particularly light in color, yellow food coloring (egg shade) may be added to improve appearance.
2. If the butter sauce separates during holding, additional Col Flo is needed. Add 2 oz at a time per batch until sauce does not separate.

<u>Batch</u>	<u>Portions</u>	<u>Gallons</u>
1	600	8
2	1200	17
3	1800	25
4	2400	34
5	3000	42
6	3600	50

#53 OPERATIONAL GUIDE FOR MIXED VEGETABLES WITH BUTTER SAUCE

Ingredient Source Guide

1. Vegetables

Vegetables, mixed, frozen, 20% to 30% green or waxed beans, 20% to 30% carrots, 20% to 30% corn, 10% to 20% green peas, optional 8% to 20% lima beans, US Grade A or B, 2- to 5-lb package, Fed. Spec. HHH-V-1745/21, Type I, NSN-8915-00-935-6620.

2. Dairy and Food Oils and Fats

a. Butter (surplus donated), salted, Grade B or better, 1-lb print or 4 prints of 1/4 lb each (not authorized for commissary resale), NSN-8910-00-782-3193.

b. Margarine, all vegetable fats and oils, vitamin A added, colored, 1-lb print or 4 prints of 1/4 lb each in wrapper, Fed. Spec. EE-M-45, Type I, Class 1, NSN-8945-00-616-0078.

3/ Starch

Starch, Col Flo 67, Special Procurement.

4. Condiments

Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

5. Sugar and Confectionery

Sugar, refined, granulated, cane or beet, 10-lb bag, Fed. Spec. JJJ-S-791, Type I, Class (a), NSN-8925-00-127-3073.

#54 OPERATIONAL GUIDE FOR PEAS WITH BUTTER SAUCE

Portion 3.5 oz peas
Size: 1.5 oz sauce

Ingredient	Issue Unit	Formulation	
		Batch - One Steamer, 18 trays, 3 Boxes/Tray	600 servings
Peas, frozen	lb (boxes, cases)	135	0 (54 boxes 4.5 cases)
Buttersauce (note 1)			
Margarine or Butter	lb	13	0
Starch, Col Flo 67	oz	0	35 (2 lb 3 oz)
Salt	oz	0	14
Sugar, granulated	oz	0	14
Water	gal (lb)	6	(49 lb)

Total volume sauce (note 2)

8 gal/batch

#54 OPERATIONAL GUIDE FOR PEAS WITH BUTTER SAUCE

Preparation

1. Vegetable Preparation

- a. Tap boxes of peas lightly to break up solid blocks.
- b. Open frozen pea boxes with a knife and put the contents of the three boxes (7.5 lb) into each perforated steamer tray.
- c. Place 18 trays of vegetables in a steamer.
- d. Cook until product reaches 155°F (68°C).

2. Sauce Preparation

- a. Melt butter or margarine in a steam kettle.
- b. Add salt and sugar.
- c. Dissolve Col Flo thoroughly in part of the formula water.
- d. Add remaining water and dissolved Col Flo to butter mixture and heat with stirring until the sauce reaches 185°F (85°C).
- e. Final sauce volume shall be 8 gal per batch (note 2).

3. Foil Preparation

- a. Place 3.5 oz of peas and 1.5 oz of butter sauce in each foil. Use scoop sizes 4 oz for peas and 2 oz for butter sauce. Filling temperature of sauce shall be 160°F (71°C).
- b. Total foil weight should not exceed 5.25 oz.
- c. Cover, label, and freeze.

#53, 54, 57, 58 OPERATIONAL GUIDE FOR VEGETABLES WITH BUTTER SAUCE

Operational and Ingredient Room Notes

1. If the margarine or butter is particularly light in color, yellow food coloring (egg shade) may be added to improve appearance.
2. If the butter sauce separates during holding, additional Col Flo is needed. Add 2 oz at a time per batch until sauce does not separate.

<u>Batch</u>	<u>Portions</u>	<u>Gallons</u>
1	600	8
2	1200	17
3	1800	25
4	2400	34
5	3000	42
6	3600	50

#54 OPERATIONAL GUIDE FOR PEAS WITH BUTTER SAUCE

Ingredient Source Guide

1. Vegetables

Peas, frozen, US Grade A or B, 2- to 5-lb package, Fed. Spec. HHH-V-1745/14, NSN-8915-00-127-8021.

2. Dairy and Food Oils and Fats

a. Butter (surplus donated), salted, Grade B or better, 1-lb print or 4 prints of 1/4 lb each (not authorized for commissary resale), NSN-8910-00-782-3193.

b. Margarine, all vegetable fats and oils, vitamin A added, colored, 1-lb print or 4 prints of 1/4 lb each in wrapper, Fed. Spec. EE-M-45, Type I, Class 1, NSN-8945-00-616-0078.

3. Starch

Starch, Col Flo 67, Special Procurement.

4. Condiments

Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

5. Sugar and Confectionery

Sugar, refined, granulated, cane or beet, 10-lb bag, Fed. Spec. JJJ-S-791, Type 1, Class (a) NSN-8925-00-127-3073.

#55 OPERATIONAL GUIDE FOR BAKED BEANS

Portion 5½ oz
Size: (4-oz ladles)

Formulation					
Ingredient	Issue Unit	Half Batch 600 Portions		Full Batch 1200 Portions	
		Quantity	lb oz	Quantity	lb oz
Beans and pork (note 1)	No. 10 can	30	(206 lb 4 oz)	60	(412 lb 8 oz)
Brown sugar	lb		6 0	12	0
Mustard, grd	oz		0 6	0	12
Vinegar	oz		0 24 (1 lb 8 oz)	0	48 (3 lb)
Bacon bits (note 2)	3½ oz jar	3	(10 oz)	6	(1 lb 4 oz)
Molasses (note 3)	12 oz jar	3	(2 lb 4 oz)	6	(4 lb 8 oz)
Total volume	gal	23 gal		45 gal	

#55 OPERATIONAL GUIDE FOR BAKED BEANS

Preparation

1. Product Preparation

- a. Add all ingredients to steam kettle.
- b. Stir while heating to mix and dissolve ingredients and prevent scorching.
- c. Heat to 160°F (71°C).
- d. Scrape kettles and serving bowls clean with rubber spatulas before filling foils to ensure proper yields.

2. Foil Preparation

- a. Portion 5½ oz of baked beans in each foil. With a 4-oz ladle, check weight of foils regularly to ensure correct fill weight.
- b. Serving temperature shall be at least 160°F (71°C).
- c. Cover, label, and freeze.

#55 OPERATIONAL GUIDE FOR BAKED BEANS

Operational and Ingredient Room Notes

1. A No. 10 can of pork and beans weighs 6 lb 14 oz. One-half batch requires 30 cans or 206 lb 40 oz of beans. If No. 10 cans are not available, use the weight to figure the alternate number of cans.
2. Bacon bits are procured in 3 $\frac{1}{2}$ -oz jars; if this size jar is not available, use 10 oz for half batch and 1 lb, 4 oz for a full batch.
3. Twelve-ounce jars of molasses are usually procured. If this size is not available, use 2 lb 4 oz for a half batch and 4 lb 8 oz for a full batch.

#55 OPERATIONAL GUIDE FOR BAKED BEANS

Ingredient Source Guide

1. Meat and Vegetables

a. Beans, white, canned, with pork in tomato sauce, No. 10 can, Fed. Spec. JJJ-B-101, Type I, Class 1, Style (a), NSN-8915-00-184-5601, or special procurement.

b. Bacon bits, Special Procurement, Local Purchase.

2. Sugar and Confectionery

a. Molasses, liquid, US Grade A or B, No. 2½-size can or 12-oz jar, Fed. Spec. JJJ-M-576, NSN-8925-00-125-9454.

b. Sugar, brown, light or medium, 1-lb box or 2-lb polyethylene bag, Fed. Spec. JJJ-S-791, Type II, Class (a) or (b), NSN-8925-00-127-7325 or NSN-8925-00-566-7506.

3. Condiments

a. Mustard, flour, 3- to 4-oz metal can or glass bottle or 1-lb metal can, Fed. Spec. EE-S-631, Type III (for use in recipes specifying mustard, dry or ground), NSN-8950-00-170-9567 or NSN-8950-00-519-5661.

b. Vinegar, cider or distilled, 50-grain strength, 32-oz bottle, Fed. Spec. Z-V-401, Type I or II, NSN-8950-00-221-0297.

#57 OPERATIONAL GUIDE FOR GREEN BEANS WITH BUTTER SAUCE

Portion 3.5 oz peas
Size: 1.5 oz sauce

Ingredient	Issue Unit	Formulation		
		lb (boxes, cases)	Quantity	Batch - One Steamer, 18 trays, 3 boxes/tray 600 servings 1 box
Green Beans, frozen			lb oz	
			135 0	(54 boxes, 4.5 cases)
<u>Butter Sauce (note 1)</u>				
Margarine/Butter	lb		13 0	
Starch, Col Flo 67	oz		0 35	(2 lb 3 oz)
Salt	oz		0 14	
Sugar, granulated	oz		0 14	
Water	gal (lb)		6	(49 lb)

Total volume of sauce (note 2)

8 gal/batch

#57 OPERATIONAL GUIDE FOR GREEN BEANS WITH BUTTER SAUCE

Preparation

1. Vegetable Preparation

- a. Tap boxes of green beans lightly to break up solid blocks.
- b. Open frozen green bean boxes with knife and put the contents of three boxes (7.5 lb) into each perforated steamer tray.
- c. Place 18 trays of green beans in a steamer.
- d. Cook until product reaches 155°F (68°C).

2. Sauce Preparation

- a. Melt butter or margarine in a steam kettle.
- b. Add salt and sugar.
- c. Dissolve Col Flo thoroughly in part of the formula water.
- d. Add remaining water and dissolved Col Flo to butter mixture and heat with stirring until the sauce reaches 185°F (85°C).
- e. The final volume of sauce shall be 8 gal per batch (note 2).

3. Foil Preparation

- a. Place 3.5 oz of green beans and 1.5 oz of butter sauce in each foil. Use a 4-oz scoop for green beans and a 2-oz scoop for butter sauce. Filling temperature shall be 160°F (71°C).
- b. Total foil weight shall not exceed 5.25 oz.
- c. Cover, label, and freeze.

#53, 54, 57, 58 OPERATIONAL GUIDE FOR VEGETABLES

Operational and Ingredient Room Notes

1. If the margarine or butter is particularly light in color, yellow food coloring (egg shade) may be added to improve appearance.
2. If the butter sauce separates during holding, additional Col Fol is needed. Add 2 oz/batch at a time until sauce does not separate.

<u>Batch</u>	<u>Portions</u>	<u>Gallons</u>
1	600	8
2	1200	17
3	1800	25
4	2400	34
5	3000	42
6	3600	50

#57 OPERATIONAL GUIDE FOR GREEN BEANS WITH BUTTER SAUCE

Ingredient Source Guide

1. Vegetables

a. Beans, green, frozen, round, cut, 1-in minimum cut lg, US Grade A or B, 2- to 5-lb package, Fed. Spec. HHH-V-1745/2, Type I, Style III, NSN-8915-00-128-1176.

2. Dairy and Food Oils and Fats

a. Butter (surplus donated), salted, Grade B or better, 1-lb print or 4 prints of 1/4 lb each (not authorized for commissary resale), NSN-8910-00-782-3193.

b. Margarine, all vegetable fats and oils, vitamin A added, colored, 1-lb print or 4 prints at 1/4 lb each in wrapper. Fed. Spec. EE-M-45, Type I, Class 1, NSN-8945-00-616-0078.

3. Starch

Starch, Col Flo 67, Special Procurement.

4. Condiments

Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

5. Sugar and Confectionery

Sugar, refined, granulated, cane or beet, 10-lb bag, Fed. Spec. JJJ-S-791, Type I, Class (a), NSN-8925-00-127-3073.

#58 OPERATIONAL GUIDE FOR CORN WITH BUTTER SAUCE

Portion: 3.5 oz corn
 Size: 1.5 oz sauce

FORMULATION		
Ingredient	Issue Unit	Batch - One Steamer, 18 trays 3 boxes/tray 600 portions
		Quantity lb oz
Corn, frozen (40 oz box)	lb (boxes, cases)	135 0 (54 boxes, 4.5 cases)
Butter Sauce (note 1)		
Margarine/Butter	lb	13 0
Starch, Col Flo 67	oz	0 35 (2 lb 3 oz)
Salt	oz	0 14
Sugar, granulated	oz	0 14
Water	gal (lb)	6 (49 lb)

Total volume sauce (note 2)

8 gal/batch

#58 OPERATIONAL GUIDE FOR BUTTERED CORN

Preparation

1. Corn Preparation

- a. Tap boxes of corn lightly to break up solid blocks.
- b. Open frozen corn boxes with a knife and put the contents of three boxes (7.5 lb) into each perforated steamer tray.
- c. Place 18 trays of corn in a steamer.
- d. Cook until corn reaches 155°F (68°C).

2. Sauce Preparation

- a. Melt butter or margarine in a steam kettle.
- b. Add salt and sugar.
- c. Dissolve Col Flo thoroughly in part of the formula water.
- d. Add remaining water and dissolved Col Flo to butter mixture and heat with stirring until the sauce reaches 185°C (85°C).
- e. The final volume of the sauce shall be 8 gal per batch (note 2).

3. Foil Preparation

- a. Place 3.5 oz of corn and 1.5 oz of butter sauce in each foil. Use a 4-oz scoop for corn and a 2-oz scoop for butter sauce. Filling temperature of sauce shall be 160°F (71°C).
- b. Total foil weight should not be more than 5.25 oz.
- c. Cover, label, and freeze.

#53, 54, 57, 58 OPERATIONAL GUIDE FOR VEGETABLES

Operational and Ingredient Room Notes

1. If the margarine or butter is particularly light in color, yellow food coloring (egg shade) may be added to improve appearance.
2. If the butter sauce separates during holding, additional Col Flo is needed. Add 2 oz at a time per batch until sauce does not separate.

<u>Batch</u>	<u>Portions</u>	<u>Gallons</u>
1	600	8
2	1200	17
3	1800	25
4	2400	34
5	3000	42
6	3600	50

#58 OPERATIONAL GUIDE FOR BUTTERED CORN

Ingredient Source Guide

1. Vegetable

a. Corn, frozen, whole kernel (or whole grain), golden, US Grade A or B, 2-5 lb package, Style I, Color (a), Fed. Spec. HHH-V-1745/8, NSN-8915-00-127-8018.

2. Dairy and Food Oils and Fats

a. Butter (surplus donated), salted, Grade B or better, 1-lb print, or 4 prints of 1/4 lb each (not authorized for commissary resale), NSN-8910-00-782-3193.

b. Margarine, all vegetable fats and oils, vitamin A added, colored, 1-lb print or 4 prints of 1/4 lb each in wrapper, Fed. Spec. EE-M-45, Type I, Class 1, NSN-8945-00-616-0078.

3. Starch

Starch, Col Flo 67, Special Procurement.

4. Sugar and Confectionery

Sugar, refined, granulated, cane or beet, 10-lb bag, Fed. Spec. JJJ-S-791, Type I, Class (a), NSN-8925-00-127-3073.

5. Condiments

Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

#70 OPERATIONAL GUIDE FOR PLAIN CAKE

Portion: 2½ oz of batter
Size:

<u>Formulation</u>				
Ingredient	Issue Unit	Quantity	Batch 500 Portions	
<u>Cake 1</u>			lb oz	
White cake mix	lb		45 0	
Flour	oz		0 40 (2 lbs 8 oz)	
Vanilla, imitation	oz		0 4	
Water	lb		27 0	
<u>Cake 2</u>				
White cake mix	cn	10		
Vanilla, imitation	oz		0 4	
Prepackaged soda (note 1)	pkg	7.5		
Water	lb		25 8	

#70 OPERATIONAL GUIDE FOR PLAIN CAKE

Preparation

1. Batter Preparation for Cake 1

a. If plain cake is procured in 50-lb bags, add 45 lb of cake mix and 40 oz of flour to mixing bowl. Blend with blade whip to break up lumps.

b. Follow steps 2c - 2f to finish batter preparation.

2. Batter Preparation for Cake 2

a. Add 10 cans of white cake mix to mixer and blend using a slotted blade to break up lumps.

b. Add prepackaged baking powder and blend for at least 2 minutes to mix evenly. (See Note 1).

c. Add 1½ gal of water at 70° to 80°F (21-27°C) and mix at lowest speed for 1 minute.

d. Stop mixer, scrape sides and mix for 2 minutes at medium speed.

e. Blend remaining water at 70° to 80°F (21-27°C) by burying it into batter with spatula. Mix at low speed for 2 minutes.

f. Scrape down sides of mixer, add vanilla, then mix for 4 minutes on medium speed.

3. Cake Dispenser Operation

a. If making more than one batch of cake, the use of the cake dispenser is recommended. Consult dispenser manual for instructions.

b. Pour or portion batter in hopper. Do not scrape the bottom of the mixing bowl. Scraping the sides is acceptable if no lumps are seen.

4. Foil Preparation

a. Portion 2¼ oz of batter in each foil.

b. Bake at 375°F (191°C) in a preheated oven until cake springs back after touching (20 min) (check ovens).

#70 OPERATIONAL GUIDE FOR PLAIN CAKE

Operational and Ingredient Room Notes

The prepackaged soda instructions recommend about 1/2 package of soda per can for a 6,000-foot altitude; however, it has been found that 3/4 package is better for white cake mix. This is especially true if the mix is older than 9 months. Use 7.5 packages of soda for 10 cans (50 lb) of mix.

#70 OPERATIONAL GUIDE FOR PLAIN CAKE

Ingredient Source Guide

1. Bakery

a. Cake mix, white, No. 10 size can, Fed. Spec. N-B-0035 (Army-GL), Type II, Class 1, Style A, NSN-8920-00-823-7227.

b. Cake mix, white, 50-lb bag, Fed. Spec. N-B-0035 (Army-GL), Type I, Class 1, Style A, NSN-8920-00-062-0396.

2. Flour

Flour, wheat, bread flour (hard), or general purpose, bleached, enriched 10-lb bag, Fed. Spec. N-F-481, Type I, II, Class B, Style 2, NSN-8920-00-165-6863 or NSN-8920-00-140-7748.

3. Condiments

Flavoring, imitation vanilla, 8-oz or 32-oz bottle, Fed. Spec. EE-E-911, Type B, Style 4, NSN-8950-00-127-8941 or NSN-8950-00-782-6702.

#72 OPERATIONAL GUIDE FOR CHOCOLATE CAKE WITH CHOCOLATE FROSTING

 Portion: 2 oz batter
 Size: 1 tsp frosting

Ingredients	Formulation						
	Issue Unit	One Batch Cake			Full Batch Frosting		
		Half Batch Frosting	600 Portions	1200 Portions	1200 Portions	1200 Portions	
		Quantity	lb	oz	Quantity	lb	oz
<u>Cake 1</u>							
Devil's Food Mix	lb		50	0 (1 bag)			
Flour	oz		0	48 (3 lb)			
Water, 70-80°F (21-27°C)	lb		28	0			
<u>Cake 2</u>							
Devil's Food Mix	cn	11					
Prepackaged soda (note 1)	pkg	5.5					
Water, 70-80°F (21-27°C)	lb		28	0			
<u>Chocolate Frosting</u>							
Butter/Margarine	lb		6	0	12	0	
Powdered Sugar	lb		26	0	48	0	
Salt	oz		0	1	0	2	
Milk, NFD	oz		0	10	0	20 (1 lb 4 oz)	
Vanilla, imitation	oz		0	4	0	8	
Cocoa	lb		2	0	4	0	
Water, hot 120°F (49°C) (note 2)	lb		4	0 (1/2 gal)	8	0 (1 gal)	

#72 OPERATIONAL GUIDE FOR CHOCOLATE CAKE WITH CHOCOLATE FROSTING

Preparation

1. Batter Preparation - Cake 1

a. If Devil's Food Cake Mix is procured in 50-lb bags, add one bag of mix and 48 oz (3 lb) of flour to mixing bowl. Blend with blade whip to break up lumps.

b. Follow steps 2c to 2f to finish batter preparation.

2. Batter Preparation - Cake 2

a. Add 11 cans of chocolate cake mix to mixer and blend, using slotted blade to break up lumps.

b. Add prepackaged baking powder (see note 1) and blend for at least 2 minutes to mix evenly.

c. Add 1½ gal (14 lb) of water at 70° to 80°F (21-27°C) and mix at lowest speed for one minute.

d. Stop mixer, scrape sides, and mix for two minutes at medium speed.

e. Blend remaining water at 70° to 80°F by (21-27°C) burying it into batter with spatula. Mix at low speed for 2 minutes.

f. Scrape down sides of mixer. Mix 4 minutes on medium speed.

3. Cake Dispensing Operation

a. If making more than one batch of cake, the use of the cake dispenser is recommended. Consult dispenser manual for instructions.

b. Pour or portion batter in hopper. Do not scrape the bottom of the mixing bowl. Scraping the sides is acceptable if no lumps are seen.

4. Icing Preparation

a. Cream butter and powdered sugar in mixing bowl, using a blade attachment, until smooth.

b. Slowly add salt, nonfat dry milk, cocoa, and vanilla and mix until well blended.

c. Slowly add water until proper consistency is reached. Additional water may be used; however, all the water shown on the formulation sheet must be used.

#72 OPERATIONAL GUIDE FOR CHOCOLATE CAKE WITH CHOCOLATE FROSTING

Preparation (cont'd)

5. Foil Preparation

- a. Portion 2 oz of batter in each foil.
- b. Bake at 375°F (191°C) in a preheated oven until cake springs back after touching (20 min).
- c. Frost cake after cooling with one teaspoon of icing per cake.

#72 OPERATIONAL GUIDE FOR CHOCOLATE CAKE WITH CHOCOLATE FROSTING

Operational and Ingredient Room Notes

1. The prepackaged soda from canned cake mix recommends $\frac{1}{2}$ package per can for a 6,000 foot altitude. Generally, this amount is adequate for chocolate cake. However, if the product is over 9 months old, it may be necessary to increase the soda. Use 7.5 packages per batch if cake does not rise to more than $\frac{1}{2}$ the height of the container.
2. Icing will thicken on standing. Add small amounts of warm water to keep original thickness.

#72 OPERATIONAL GUIDE FOR CHOCOLATE CAKE WITH CHOCOLATE FROSTING

Ingredient Source Guide

1. Bakery

a. Cake mix, devil's food, No. 10 size can, Fed. Spec. N-B-0035 (Army-GL), Type II, Class 1, Style C, NSN-8920-00-823-7221.

b. Cake mix, devil's food, 50-lb bag, Fed. Spec. N-B-0035 (Army-GL), Type I, Class 1, Style C, NSN-8920-00-062-0393.

2. Dairy and Food Oils and Fats

a. Butter (surplus donated), salted, Grade B or better, 1-lb print or 4 prints of 1/4 lb each (not authorized for commissary resale), NSN-8910-00-782-3193.

b. Margarine, all vegetable fats and oils, vitamin A added, colored, 1-lb print or 4 prints of 1/4 lb each in wrapper, Fed. Spec. EE-M-045, Type I, Class 1, NSN-8945-00-616-0078.

c. Milk, nonfat, dry, conventional, low heat, 5-lb can, Fed. Spec. C-M-350, Type I, Style C (general purpose), NSN-8910-00-982-2779.

3. Sugar

Sugar, refined, white, powdered, confectioner's cane or beet, 1- or 2-lb box or bag, Fed. Spec. JJJ-S-791, Type I, Class (d), NSN-8925-00-060-7495 (7496).

4. Cocoa

Cocoa, natural, 22% minimum cocoa fat content, 1-lb can, Fed. Spec. JJJ-C-501, Type 1, Style A, NSN-8955-00-223-5806.

5. Flour

Wheat, general purpose or bread flour (hard), enriched, 10-lb bag, Fed. Spec. N-F-481, Type I or III, Class B, Style 2, NSN-8920-00-165-6863 or NSN-8920-00-140-7748.

6. Condiments

a. Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

b. Flavoring, imitation vanilla, 8-oz or 32-oz bottle, Fed. Spec. EE-E-911, Type B, Style 4, NSN-8950-00-127-8941 or NSN-8950-00-782-6702.

#73 OPERATIONAL GUIDE FOR YELLOW CAKE WITH VANILLA FROSTING

Portion: 2½ oz batter
 Size: 1 tsp frosting

Formulation					
Ingredient	Issue Unit	One Batch Cake Half Batch Frosting 500 Portions		Quantity	Full Batch Frosting 1000 Portions
		lb	oz		lb oz
<u>Cake 1</u>					
Yellow cake mix	lb	45	0		
Flour	oz	0	40 (2 lb 8 oz)		
Water (70-80°F) (21-27°C)	lb	27	0		
<u>Cake 2</u>					
Yellow cake mix	cn	10			
Prepackaged soda (note 1)	pkg	5			
Water, warm (70-80°F) (21-27°C)	lb	25	8		
<u>Frosting, Vanilla</u>					
Butter/Margarine	lb	5	0	11	0
Powdered Sugar	lb	20	0	40	0
Salt	oz	0	1	0	2
Milk, NFD	oz	0	9	0	18 (1 lb 2 oz)
Vanilla, imitation	oz	0	4	0	8
Water, hot (120°F) (49°C) (note 2)	lb	2	0	4	0

#73 OPERATIONAL GUIDE FOR YELLOW CAKE WITH VANILLA FROSTING

Preparation

1. Batter Preparation - Cake 1

a. If yellow cake is procured in 50-lb bags, add 45 lb of cake mix and 40 oz of flour to mixing bowl. Blend, using a blade whip to break up lumps.

b. Follow steps 2c - 2f to finish batter preparation.

2. Batter Preparation - Cake 2

a. Add 10 cans of yellow cake mix to mixer and blend, using a slotted blade to break up lumps.

b. Add prepackaged baking powder (see note 1) and blend for at least 2 minutes to mix evenly.

c. Add 1½ gal of water at 70° to 80°F (21-27°C) and mix at lowest speed for one minute.

d. Stop mixer, scrape sides, and mix for 2 minutes at medium speed.

e. Blend remaining water at 70° to 80°F (21-27°C) by burying it into batter with spatula. Mix at low speed for 2 minutes.

f. Scrape down sides of mixer, then mix for 4 minutes on medium speed.

3. Cake Dispensing Operation

a. If making more than one batch of cake, the use of the cake dispenser is recommended. Consult dispenser manual for instructions.

b. Pour or portion batter in hopper. Do not scrape the bottom of the mixing bowl. Scraping the sides is acceptable if no lumps are seen.

4. Icing Preparation

a. Cream butter and powdered sugar in mixing bowl, using a blade attachment, until smooth.

b. Slowly add salt, nonfat dry milk, and vanilla and mix until well blended.

c. Slowly add water until proper consistency is reached. Additional water may be used; however, all the water shown on the formulation sheet must be used.

#73 OPERATIONAL GUIDE FOR YELLOW CAKE WITH VANILLA FROSTING

Preparation (cont'd)

5. Foil Preparation

- a. Portion $2\frac{1}{4}$ oz of batter in each foil.
- b. Bake at 375°F (191°C) in a preheated oven until cake springs back after touching (20 min).
- c. Frost after cooling with 1 teaspoon of icing per cake.

#73 OPERATIONAL GUIDE FOR YELLOW CAKE WITH VANILLA FROSTING

Operational and Ingredient Room Notes

1. The prepackaged soda from canned cake mix recommends $\frac{1}{2}$ package per can for a 6,000 foot altitude. Generally, this amount is adequate for yellow cake. However, if the age of the product is over 9 months it may be necessary to increase the soda. Use 7.5 packages per batch if cake does not rise to more than half the height of the container.
2. Icing will thicken on standing. Add small amounts of warm water to keep original thickness.

#73 OPERATIONAL GUIDE FOR YELLOW CAKE AND VANILLA FROSTING

Ingredient Source Guide

1. Bakery

a. Cake mix, yellow, No. 10 size can, Fed. Spec. N-B-0035 (Army-G1), Type II, Class 1, Style B, NSN-8920-00-823-7229.

b. Cake mix, yellow, 50-lb bag, Fed. Spec. N-B-0035 (Army-G1), Type I, Style B, NSN-8920-00-062-0388.

2. Dairy and Food Fats and Oils

a. Butter (surplus donated), salted, Grade B or better, 1-lb print or 4 prints of 1/4 lb each (not authorized for commissary resale), NSN-8910-00-782-3193.

b. Margarine, all vegetable fats and oils, vitamin A added, colored, 1-lb print or 4 prints of 1/4 lb each in wrapper, Fed. Spec. EE-M-45, Type I, Class 1, NSN-8945-00-616-0078.

c. Milk, nonfat, dry, conventional, low heat, 5-lb can, Fed. Spec. C-M-350, Type I, Style C (general purpose), NSN-8910-00-982-2779.

3. Sugar

Sugar, refined, white, powdered confectioner's cane or beet, 1- or 2-lb box or bag, Fed. Spec. JJJ-S-791, Type I, Class (d), NSN-8929-00-060-7495 or NSN-8929-00-060-7496.

4. Flour

Wheat, bread flour (hard), bleached, enriched, 10-lb bag, Fed. Spec. N-F-481, Type I, Class B, Style 2, NSN-8920-00-165-6863, or flour, wheat, general purpose, bleached, enriched, 10-lb bag, Fed. Spec. N-F-481, Type III, Class B, Style 2, NSN-8920-00-140-7748.

5. Condiments

a. Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. S-S-31, NSN-8950-00-262-8886.

b. Flavoring, imitation vanilla, 8-oz or 32-oz bottle, Fed. Spec. EE-E-911, Type B, Style 4, NSN-8950-00-127-8941 or NSN-8950-00-782-6702.

#74 OPERATIONAL GUIDE FOR APPLE PIE

 Portion: 5 oz filling
 Size: 1 tbsp topping

Formulation					
Ingredients	Issue Unit	Half Batch 500 Portions		Full Batch 1000 Portions	
		Quantity	lb oz	Quantity	lb oz
<u>Filling</u>					
Apples, sliced (note 1)	#10 cn	15	(97 lb 8 oz)	30	(195 lb 0 oz)
Sugar	oz		0 400 (25 lb)		0 800 (50 lb)
Salt	oz		0 5		0 10
Cinnamon	oz		0 6		0 12
Nutmeg	g	5		10	
Starch, Col Flo 67	oz		0 60 (3 lb 12 oz)		0 120 (7 lb 8 oz)
Lemon Juice	oz		0 15		0 30 (1 lb 14 oz)
Cloves	g	25		50	
Water	gal (lb)	3	(25 lb)	6	(49 lb)
Total volume, filling (before cooking)		18 gal		35 gal	
<u>Topping</u>					
Flour	oz		0 154 (9 lb 10 oz)		0 296 (18 lb 8 oz)
Margarine	lb		6 0		11 0
Sugar, white gran	oz		0 154 (9 lb 10 oz)		0 296 (18 lb 8 oz)
Salt	oz		0 1		0 2
Eggs	doz	1.5		3	
Vanilla, imitation	oz		0 1		0 2
Cinnamon	oz		0 3		0 5

#74 OPERATIONAL GUIDE FOR APPLE PIE

Preparation

1. Filling Preparation

- a. Use half of formula water to dissolve sugar in steam kettle. Heat to help dissolve.
- b. Mix starch (Col Flo) with remaining water and add to kettle.
- c. Add remaining filling ingredients, except apples, to steam kettle with dissolved sugar.
- d. Heat to 185°F (85°C) while mixing.
- e. Add apples and heat to 160°F (71°C).

2. Topping Preparation

- a. Cream white sugar and margarine, using paddle attachment on mixer.
- b. Add eggs and vanilla and mix well.
- c. Add flour, salt, and cinnamon; mix until dough is well blended.
- d. Spread 5 lb of dough on each sheet pan to about $\frac{1}{2}$ -in thickness.
- e. Cook topping in 350°F (177°C) conventional oven until light brown and firm, approximately 30 minutes.
- f. Cool topping 10 minutes before crumbling through meat grinder attachment on mixer.

3. Foil Preparation

- a. Add 5 oz of apple filling to each foil at a filling temperature of at least 160°F (71°C).
- b. Sprinkle 1 tablespoon of topping over the filling (see note 2).
- c. Cover, label, and freeze.
- d. Total foil weight shall not exceed 6 oz.

#74 OPERATIONAL GUIDE FOR APPLE PIE

Operational and Ingredient Room Notes

1. Sliced apples are usually procured in No. 10 cans with 6 lb 8 oz of product. If apples are not available in this size can, use the weight listed on formulation sheet to figure number of alternate size cans.
2. One tablespoon of topping weighs approximately 17 grams.

#74 OPERATIONAL GUIDE FOR APPLE PIE

Ingredient Source Guide

1. Fruits and Vegetables

a. Apples, canned, sliced, US Grade A or C, No. 10 size can, Fed. Spec. Z-F-1742/1, NSN-8915-00-126-4060.

b. Juice, lemon, reconstituted, 1440, 13 fl. oz Fed. Spec. Z-J-1843, NSN-8915-00-480-5847.

2. Sugar, Confectionary

a. Sugar, refined, granulated, cane or beet, 10-lb bag, Fed. Spec. JJJ-S-791, Type I, Class (a) NSN-8925-00-127-3073.

b. Sugar, brown, light or medium, 1- or 2-lb bag or box, Fed. Spec. JJJ-S-791, Type II, Class (a) or (b), NSN-8925-00-127-7325 or NSN-8925-00-566-7506.

3. Dairy Foods

a. Butter (surplus donated), salted, Grade B or better, 1-lb print or 4 prints of 1/4 lb each (not authorized for commissary resale), NSN-8910-00-782-3193.

b. Milk, nonfat, dry, conventional low heat, 5-lb can Fed. Spec. C-M-350, Type I, Style C (general purpose use), NSN-8910-00-982-2779.

4. Bakery and Cereal Products

a. Starch, Col Flo 67, Special Procurement.

b. Flour, wheat, general purpose, bread flour (hard), enriched, 10-lb bag, Fed. Spec. N-F-481, Type I, III, Class B, Style 2, NSN-8920-00-140-7748 or NSN-8920-00-165-6863.

5. Food Oils and Fats

Margarine, all vegetable fats and oils, vitamin A added, colored, 1-lb print or 4 prints 1/4 lb each in wrapper, Fed. Spec. EE-M-45, Type I, Class 1, NSN-8945-00-616-0078.

6. Condiments

a. Cinnamon, ground, 1-lb metal can, Fed. Spec. EE-S-631, Type IIA, IIB, IIC, NSN-8950-00-127-8049.

b. Cloves, ground, 1- to 2-oz metal can or glass bottle, Fed. Spec. EE-S-631, Type II, NSN-8950-00-170-9571.

#74 OPERATIONAL GUIDE FOR APPLE PIE

Ingredient Source Guide (cont'd)

c. Nutmeg, ground, 1- to 2-oz metal can or glass bottle, FED. Spec. EE-S-631, Type II, NSN-8950-00-127-8047.

d. Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

#76 OPERATIONAL GUIDE FOR PEACH PIE

Portion: 5 oz filling
 Size: 1 Tbsp topping

Ingredient	Issue Unit	Formulation					
		1/3 Batch 400 Servings		2/3 Batch 800 Servings			
		Quantity	lb oz	Quantity	lb oz	Quantity	
<u>Filling</u>							
Peaches, cling (note 1)	No. 10 can	15	(100 lb)	30	(200 lb)	45	
Starch, Col Flo 67	oz	0	61 (3 lb 13 oz)	0	119 (7 lb 7 oz)		
Sugar, granulated	oz	0	364 (22 lb 12 oz)	0	712 (44 lb 8 oz)		
Salt	oz	0	11	0	22 (1 lb 6 oz)		
Water	gal (lb)	1	(8.5 lb)	2	(16 lb)	3	
Total Volume of Filling		14 gal		28 gal			
Flour	oz	0	128 (8 lb)	1	240 (15 lb)		
Margarine	lb	5	0	9	0		
Sugar	oz	0	128 (8 lb)	0	240 (15 lb)		
Salt	oz	0	1	0	1		
Eggs	doz	1		2		3	
Vanilla, imitation	oz	0	1	0	2		
Cinnamon	oz	0	2	0	4		

#76 OPERATIONAL GUIDE FOR PEACH PIE

Preparation

1. Product Preparation

- a. Mix Col Flo with half of water in formula to make a slurry.
- b. Mix remaining water and slurry with sugar and salt in steam kettle and heat until sugar melts 185°F- (85°C).
- c. Add peaches and stir carefully to coat with sugar solution.
- d. Heat to 160°F (71°C).

2. Topping Preparation

- a. Cream sugar and margarine using paddle attachment on mixer.
- b. Add eggs and vanilla and mix well.
- c. Add flour, salt, and cinnamon; mix until dough is well blended.
- d. Spread 5 lb of dough on each sheet pan to about ½-in thickness.
- e. Cook topping in 350°F (177°C) conventional oven until light brown and firm, approximately 30 minutes.
- f. Cool topping 10 minutes before crumbling through meat grinder attachment on mixer.

3 Foil Preparation

- a. Place 5 oz of filling at 160°F (71°C) in each foil.
- b. Sprinkle 1 tablespoon of topping on filling (see note 2).
- c. Cover, label, and freeze.
- d. Total foil weight shall not exceed 6 oz.

#76 OPERATION GUIDE FOR PEACH PIE

Operational and Ingredient Room Notes

1. Peaches in light syrup are usually procured in No. 10 cans of 6 lb 10 oz. The light syrup variety is preferred. If peaches packed in heavy syrup are obtained, use half the weight of sugar in the formulation and additional water to achieve the required total filling volume.
2. One tablespoon of topping weighs approximately 17 g.

#76 OPERATIONAL GUIDE FOR PEACH PIE

Ingredient Source Guide

1. Dairy and Food Fats

a. Butter (surplus donated), salted, Grade B or better, 1-lb print or 4 prints of 1/4 lb each (not authorized for commissary resale), NSN-8910-00-782-3193.

b. Margarine, all vegetable fats and oils, vitamin A added, colored, 1-lb print or 4 prints of 1/4 lb each in wrapper, Fed. Spec. EE-M-45, Type I, Class 1, NSN-8945-00-616-0078.

c. Milk, nonfat, dry, conventional low heat, 5-lb can, Fed. Spec. C-M-350, Type I, Style C (general purpose use), NSN-8910-00-982-2779.

2. Fruits and Vegetables

a. Peaches, canned, quarters or slices, yellow clingstone or freestone, light syrup pack, US Grade A or B, No. 10 size can, Fed. Spec. Z-F-1742/21, Type I or II, regular pack, Style 2 or 3, NSN-8915-00-577-4203.

3. Flour

a. Flour, wheat, general purpose or bread flour (hard), enriched, 10-lb bag, Fed. Spec. N-F-481, Type I or III, Class B, Style 2, NSN-8920-00-140-7748 or NSN-8920-00-165-6863.

4. Sugar

a. Sugar, brown, light or medium, 1-lb bag or box or 2-lb bag, Fed. Spec. JJJ-S-791, Type II, Class (a) or (b), NSN-8925-00-127-7325 or NSN-8925-00-566-7506.

b. Sugar, refined, granulated, cane or beet, 10-lb bag. Fed. Spec. JJ-S-791, Type I, Class (a), NSN-8925-00-127-3073.

5. Starch

a. Starch, Col Flo 67, Special Procurement.

6. Condiments

Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

#90 OPERATIONAL GUIDE FOR SWISS STEAK WITH TOMATO SAUCE

 Portion: 1 steak
 Size: 4 oz sauce

Ingredients	Issue Unit	Formulation		Quantity	Full Batch	
		Half Batch	350 Portions		700 Portions	700 Portions
		lb	oz		lb	oz
Cube Steak (note 1)	lb	140	0		280	0
Flour	oz	0	168 (10 lb 8 oz)		0	336 (21 lb)
Pepper, black, grd	g	30		60		
Salt	oz	0	7		0	14
<u>Sauce</u>						
Onions, fresh (chopped) (note 2)	lb	10	0 (8 lb)		20	0 (16 lb)
Peppers, green (chopped)	lb	8	0 (6 lb 6 oz)		16	0 (12 lb 13 oz)
Garlic Salt	g	20		30		
Pepper, black, grd	g	20		40		
Salt	oz	0	16 (1 lb)		0	32 (2 lb)
Tomatoes, whole, canned (note 3)	No. 10 cn	7	(42 lb)	13		(83 lb)
Worcestershire sauce (note 4)	5 oz btl	3	(1 lb)	6		(2 lb)
Beef Base	lb	2	0		3	0
Water	gal (1b)	4	(30 lb)	7		(57 lb)
Total sauce volume		14 gal		26		

#90 OPERATIONAL GUIDE FOR SWISS STEAK WITH TOMATO SAUCE

Preparation

1. Steak Preparation

- a. Combine flour, salt, and pepper in a suitable size pan.
- b. Dredge steak in seasoned flour and shake off excess.

2. Sauce Preparation

- a. Finely chop onions and green peppers.
- b. Crush whole tomatoes.
- c. Combine all ingredients in a steam kettle.
- d. Adjust volume to 14 gal for 350 servings, 26 gal for 700 servings.
- e. Bring to a boil; reduce heat and simmer for 15 minutes.

3. Cooking

- a. Pour enough sauce in ration pan to cover bottom.
- b. Place one layer of steak on top of sauce.
- c. Place enough sauce in pan to cover steak.
- d. Repeat procedure until pan has three layers of steak.
- e. Place pans in preheated 350°F (177°C) oven.
- f. Cook until internal temperature reaches 165°F (74°C).

4. Foil Preparation

- a. Place one steak in each foil.
- b. Ladle 4 oz of gravy over steak at filling temperature of 160°F (71°C).
- c. Cover, label, and freeze.
- d. Total foil weight should be 8-9 oz.

#90 OPERATIONAL GUIDE FOR SWISS STEAK WITH TOMATO SAUCE

Operational and Ingredient Room Notes

1. Order steaks by count as close to required weight as possible. Raw steaks should weigh at least 6 oz, but not more than 6-3/4 oz.
2. Whole fresh onions and peppers give a 80% yield when trimmed and chopped. For a half batch, 8 lb of chopped onions and 6 lb 6 oz of chopped peppers are the expected yields. Chopped weight is listed next to issue weight on the formulation sheet.
3. Whole tomatoes in No. 10 cans weighing 6 lb 9 oz each are usually obtained for this formula. Alternate can sizes can be figured from actual weight needed next to number of cans on formulation sheet. Concentrated crushed tomatoes can be substituted for whole tomatoes. Use 4 cans for 350 portions and 8 cans for 700 portions. Add water to achieve listed final volume.
4. Worcestershire sauce is usually procured in 5-oz bottles. Next to the number of bottles on the formulation sheet is the actual required weight of Worcestershire Sauce, if an alternate bottle size is procured.

#90 OPERATIONAL GUIDE FOR SWISS STEAK WITH TOMATO SAUCE

Ingredient Source guide

1. Meat

Cube steak, fresh, unfrozen. Local purchase.

2. Vegetables

Onions, dry, any variety except Sweet Spanish, US No. 1 Grade, 2-in. minimum diameter for 70% or more, Fed. Spec. HHH-V-1744/40, NSN-8915-00-616-0200.

b. Peppers, sweet, fresh, green, California Wonder variety, bell or bullnose type, US No. 1 Grade, 2-1/2 in. minimum diameter, Fed. Spec. HHH-V-1744/28, NSN-8915-00-127-8006.

c. Tomatoes, canned, whole, almost whole, large pieces or combination thereof, US Grade A or B, No. 10 size can, Fed. Spec. JJJ-V-1746/20, Type I, NSN-8915-00-582-4060.

3. Flour

Flour, wheat, general purpose, or bread flour (hard), enriched, 10-lb bag, Fed. Spec. N-F-481, Type I or III, Class B, Style 2, NSN-8920-00-140-7748 or NSN-8920-00-165-6863.

4. Soups and Bouillons

Soup and gravy base, instant, beef flavored, 8-oz or 1-lb jar, Fed. Spec. EE-B-575, Type I, Class 1, Style A, NSN-8935-00-753-6423.

5. Condiments

a. Garlic salt, 3- to 4-oz, or 1-lb container, MIL-S-43855, Type II, NSN-8950-00-252-7667 or NSN-8950-00-539-9542.

b. Pepper, black, ground, 1-lb metal can. Fed. Spec. EE-S-631, Type II, NSN-8950-00-127-8067.

c. Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

d. Worcestershire sauce, 5-oz bottle, Fed. Spec. EE-W-600, as modified by bottle size, NSN-8950-01-033-4199.

#91 OPERATIONAL GUIDE FOR SPANISH BEEF AND MACARONI

Portion:

Size: 8 ounces

Ingredient	Issue Unit	Formulation				Quantity	Full Batch		8 ounces
		Half Batch		700 Portions					
		Quantity	lb	oz		lb	oz		
Beef, raw, ground (note 1)	lb		85	0		170	0		
Macaroni, elbow, dry (note 2)	lb		15	0		32	8		
<u>Sauce</u>									
Peppers, green, fresh (chopped) (note 3)	lb		4	0	(3 lb 0 oz)	7	8	(6 lb 0 oz)	
Onion, dehyd., chopped	oz		0	38	(2 lb 6 oz)	0	73	(4 lb 9 oz)	
Tomatoes, canned, crushed (note 4)	No. 10 cn	7			(42 lb 14 oz)	13		(83 lb 3 oz)	
Corn, whole kernel, frozen (note 5)	lb		17	8	(7 boxes)	35	0	(14 boxes)	
Cheese, OrangeCheezTang (note 6)	lb		7	0		13	0		
Olives, ripe, pitted (sliced or chopped (note 7))	No. 10 cn	2			(5 lb 9 oz)	3		(10 lb 13 oz)	
Mushrooms, canned, sliced (note 8)	8 oz cn	10			(5 lb 3 oz)	20		(10 lb 1 oz)	
Salt	oz			12		0	24	(1 lb 8 oz)	
Pepper, grd, black	g	25				45			
Onion, pwd (note 9)	g	215			(7.5 oz)	425		(15 oz)	
Garlic, dehyd. gran. (note 10)	g	80				150			
Water	gal	2			(16 lb)	3		(24 lb)	

#91 OPERATIONAL GUIDE FOR SPANISH BEEF AND MACARONI

Preparation

1. Preparation of Macaroni

Put macaroni into rapidly boiling water. Cook until slightly undercooked and very firm (6 to 7 minutes). Drain immediately and wash with cold water to stop cooking and remove excess starch. Hold in 40°F (4°C) box for step 3a.

2. Preparation of Sauce

a. Rehydrate onions in excess warm water for 15 minutes. Drain well.

b. Wash, trim, and chop green peppers. If olives are not sliced, slice or chop them.

c. Place beef into steam kettle. Cook only until redness disappears. Drain excess liquid and discard.

d. Add onions and green peppers to beef. Heat to 160°F (71°C).

e. Add remaining sauce ingredients to beef. If using dehydrated cheese, add 2 gal of water to half batch and 3 gal to a full batch. If fresh cheese is used, add only half the water.

SCRAPE ALL INTERMEDIATE CONTAINERS FREE OF INGREDIENTS.

f. Heat to 185°F (85°C) while mixing.

g. Measure volume and adjust to the level required for batch size with hot water (160°F (71°C)). Stir well.

3. Product Preparation

a. When preparing a full batch, divide macaroni and sauce into four equal amounts. Layer hot sauce 185°F (85°C) and macaroni in large filling bowls. Mix gently and completely. (The proportion is one weight of macaroni to three weights of sauce.)

4. Foil Preparation

a. Place 8 oz of product into each foil.

b. Product must be 160°F (71°C) for filling.

c. Cover, label, and freeze.

d. A full 8-oz scoop will weigh more than 8 oz. Use a 6-oz scoop for better portion control. Weigh foils after filling to ensure consistent portioning and proper yields.

#91 OPERATIONAL GUIDE FOR SPANISH BEEF AND MACARONI

Operational and Ingredient Room Notes

1. The yield of cooked ground beef is between 65-70 percent for raw beef containing 20-25% fat. For 170 lb of raw ground beef the yield should be between 110-119 lb.
2. The yield of cooked macaroni is based on a 2.5-maximum-fold increase from uncooked. Overcooking is to be strictly avoided, because it will decrease final product quality and greatly increase the yield. For a full batch, cooked macaroni should not weigh more than 82 lb.
3. Peppers are issued raw, whole, and untrimmed. After trimming and chopping, 7.5 lb of peppers should yield 6 lb. If frozen chopped peppers are obtained, use 6 lb.
4. Number 10 cans of crushed concentrated tomatoes have 6 lb 9 oz of product. If No. 10 cans are not available, use the poundage listed (83 lb 3 oz for 700 portion) to figure the number of alternate size cans. If crushed concentrated tomatoes are not available, use tomato sauce or semicondensed juice.
5. Canned corn, except cream style, may be substituted for frozen corn. In this case drained weight must be used for ordering.
6. Fresh shredded cheese may be substituted for dehydrated cheese or Cheez Tang. For 7 lb of dry cheese use 11 lb of fresh cheese (350 portions); for 13 lb of dry cheese use 22 lb of fresh cheese (700 portions).
7. Number 10 cans of sliced olives have a drained weight of 3.44 lb. If No. 10 cans are not available, use the weight listed on the formulation sheet to figure number of alternate size cans.
8. Mushrooms are procured in 8-oz cans. To figure alternate cans if 8-oz cans are not available use the weight listed on formulation sheet.
9. Do Not substitute onion salt for onion powder.
10. Do Not substitute garlic salt for dehydrated granulated garlic. Garlic powder may be substituted for granular garlic.

#91 OPERATIONAL GUIDE FOR SPANISH BEEF AND MACARONI

Ingredient Source Guide

1. Meat

Beef, ground, local commissary, order 20-25 percent fat, 3/16-in (4.7 mm) grind.

2. Dairy

a. Cheese, CheezTang, orange, Special Procurement, Kraft. Denver Food Service telephone 303-399-2224.

b. Cheese, cheddar, natural fresh, medium cured or aged, flat or twins, daisies or triplets, blocks or loaves, rind or rindless type, Grade A or AA, Fed. Spec. C-C-271, Class 1, 2, or 3, Style (b), (c), (f), Size (3), (5), (6), NSN-8910-00-125-8440.

3. Vegetables

a. Corn, frozen, golden, whole kernel (or whole grain), US Grade A or B, 2- to 5-lb package, Fed. Spec. HHH-V-1745/8, Style I, Color (a), NSN-8915-00-127-8018.

b. Mushroom, canned, sliced, stems and pieces, US Grade A or B, 8-oz or No. 10 size can. Fed. Spec. JJJ-V-1746/9, Type II, Style E, NSN-8915-00-935-6629.

c. Onions, dehydrated, white chopped w/o desiccant, No. 10 size can. Fed. Spec. JJ-O-1866, Type I, Style 1, NSN-8915-00-128-1179.

d. Peppers, sweet, fresh, green California Wonder variety, bell or bullnose type, US No. 1 Grade, 2½-in minimum diameter, Fed. Spec. HHH-V-1744/28, NSN-8915-00-127-8006.

e. Tomatoes, canned, concentrated, crushed, Special Procurement.

4. Bakery and Cereal Products

Macaroni, elbow form, regular cooking, enriched, variable size box or bag, Fed. Spec. N-M-51, Group I, Type A, Class 2, Style A, Form 2, NSN-8920-00-782-2979.

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Ingredient Source Guide (cont'd)

5. Condiments

a. Garlic, dehydrated granular, Special Procurement; or garlic powder, Special Procurement.

b. Olives, ripe, sliced, US Grade A or B, No. 10 size or No. 300 size can, Fed. Spec. Y-O-451, Type II, Style (e), NSN-8950-00-450-0016.

c. Onion powder, 2½-size can, Special Procurement.

d. Peppers, black, ground, 1-lb metal can, Fed. Spec. EE-S-631, Type II, NSN-8950-00-127-8067.

e. Salt, table, iodized, fine granulated or evaporated, 5-lb bag, Fed. Spec. SS-S-31, NSN-8950-00-262-8886.

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