FM 10-23-2

TACTICS, TECHNIQUES, AND PROCEDURES FOR GARRISON FOOD PREPARATION AND CLASS I OPERATIONS MANAGEMENT

HEADQUARTERS, DEPARTMENT OF THE ARMY

FIELD MANUAL
NO 10-23-2 (TTP)

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TACTICS, TECHNIQUES, AND PROCEDURES FOR GARRISON FOOD PREPARATION AND CLASS I OPERATIONS MANAGEMENT

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PREFACE

PURPOSE

This FM provides doctrine through tactics, techniques, and procedures for the operation and management of garrison dining facilities and Class I operations. It provides guidance for commanders, Class I officers, food advisors, troop issue subsistence officers, food service officers, food service supervisors, food service sergeants, subsistence supply handlers, cooks, and bakers. Guidance from other manuals has been incorporated to provide comprehensive information in one document. This document represents the final consolidation of portions of the following manuals: FM 10-22, FM 10-24, FM 10-25, FM 10-26, and TM 10-415. FM 10-23, December 1991, also consolidated portions of these manuals. These manuals are hereby superseded and will no longer be maintained.

ORGANIZATION AND COVERAGE

This manual is divided into five parts. Part One discusses responsibilities, budgets, manpower, contracts, and management. Part Two deals with training, energy management, safety, sanitation, menus, nutrition, and equipment replacement. Part Three provides guidance for troop issue activities, storage, transportation, and handling of Class I supplies. Part Four deals with dining facility accounts, headcount procedures, and production within dining facilities. Part Five covers food preparation and serving in garrison facilities.

USER INFORMATION

The proponent of this publication is HQ TRADOC. Submit recommended changes on DA Form 2028. Key each comment to the specific page and paragraph to which the comment applies. Provide your rationale for each comment. Forward the completed form to--

Commander
US Army Quartermaster Center and School
ATTN: ATSM-SPT-I
Fort Lee, Virginia 23801-5036

Unless this publication states otherwise, masculine nouns and pronouns do not refer exclusively to men.

PART ONE

RESPONSIBILITIES, BUDGETS, MANPOWER, CONTRACTS, AND MANAGEMENT

CHAPTER 1

RESPONSIBILITIES

GENERAL

The Army Food Service Program covers the people, processes, and resources involved in feeding soldiers worldwide. Everything is included from research and development of a food item through the cooking and serving processes. Commanders and food service and Class I personnel do their part by making the most efficient use of their personnel, equipment, facilities, and supplies. Each person must know his job and work as part of a team.

OBJECTIVE

The basic objective of the Army Food Service Program is to provide authorized diners quality meals in an environment that is comparable to first-class commercial cafeterias, such as any of the national chain restaurants that provide full meal service. Troop Issue Subsistence Activities and food service operations must be properly organized, utilized, and managed to meet this objective. Key individuals must be aware of their responsibilities and how they relate to a successful food service program.

COMMANDERS

AR 30-1 and AR 30-18 provide specific responsibilities of commanders at each level. Unit and organization commanders are responsible for the operation of dining facilities.

Active Army Unit Commanders

Commanders of units with a military-operated dining facility must ensure that--

- Sufficient personnel are assigned and trained to accomplish the mission.
- Subsistence is ordered, received, and accounted for in accordance with regulatory requirements.
- Subsistence items are not used in support of social activities (for example, retirements, awards ceremonies, graduations, religious activities. and changes of command).
- Subsistence supplies are safeguarded per AR 30-1, Appendix I.
- Dining facility operations conform to established standards in food preparation, service, atmosphere, safety and occupational health rules, and sanitation.
- Equipment and facilities are adequate and include equipment maintenance and replacement programs.
- Meal hours support the unit's training schedule.
- Soldiers are trained in how to control their diets for fitness, and information on nutrition is readily accessible.
- Separate seating or personal services are not provided for officers, basic allowance for subsistence, or civilian personnel other than established smoking and no-smoking areas.
- Requests for meals supporting soldiers away from the dining facility are completed per AR 30-1, Chapter 7. Figure 1-1 (page 1-2) shows a request for meals using individual signatures. Figure 1-2 (page 1-3) shows a request for meals using one-line entry procedures.

ATSM-CES-OA (30-1d) 9 JULY 1992

MEMORANDUM THRU Food Service Officer

FOR Food Service Sergeant

SUBJECT: Meal Request, Using Signatures, Per AR 30-1, para 7-12

1. Nature of requirement: Rifle Range.
2. Meals required:
   a. Date required: Day 13, Month July, Year 1992.
   b. For the meal(s) requiring support, select the appropriate type of ration(s) required, (A = A-Ration, MRE = Meal, Ready-to-Eat, or BL = Box Lunch), for Breakfast A Lunch MRE or Dinner _____.
3. Breakout of meals by category:
   a. Number of meal card holders-(SIK): 35.
   b. Number of field meal card holders-(FAO): 0.
   c. Number of cash personnel: 6.
   d. Total number of meals requested: 41.
4. Pickup information:
   a. Time and date of pickup: Time 0530 Date 920713.
   b. Rank and name of individual designated to pick up meals: Rank SFC Name Edward J Marsh.

Charles H. Berry
CHARLES H. BERRY
CPT, QM
COMMANDING

NOTE:

The above information is required when meals are requested from the dining facility. "When there is a difference of 10 percent or five meals (whichever is greater), of the meals requested on this form and the actual headcount, as reflected on the unit headcount documents, a report of survey will be accomplished by the commander having operational control of the dining facility," per AR 30-1, para 7-12f. Headcount and cash collection forms will be turned in to the FSS upon return.

Figure 1-1. Sample meal request using individual signatures

ATSM-CES-OA (30-1d) 23 APRIL 1993

MEMORANDUM THRU Food Service Officer

FOR Food Service Sergeant

SUBJECT: Meal Request, 50 Personnel or Less, Using Alternate Procedures (one-line entry), Per AR 30-1, para 7-12

1. Nature of requirement: Rifle Range.

2. Meals required:

   a. Date required: Day 30, Month April, Year 1993.

   b. For the meal(s) requiring support, select the appropriate type of ration(s) required, (A = A-Ration, MRE = Meal, Ready-to-Eat, or BL = Box Lunch), for Breakfast A Lunch MRE or Dinner ____.

3. Breakout of meals requested:

   a. Number of meal card holders-(SIK): 7.

   b. Number of field meal card holders-(FAO): Ø.

   c. Number of cash personnel: 3.

   d. Total number of meals requested: 1Ø.

4. Pickup information:

   a. Rank and name of individual designated to pick up meals:

      Rank SFC Name Edward V Harsh.

   b. Time and date of pickup: Time 0530 Date 930430.

Charles H Berry
CHARLES H. BERRY
CPT, QM
COMMANDING

Encl
Personnel Roster

NOTE: A separate meal request will be submitted for each day.

Figure 1-2. Sample meal request using one-line entry procedures

	NAME	RANK	MEAL CARD NO	SVC COMONENT	CASH
1.	Robert Carr	SSG		US ARMY	$ 2.85
2.	Roland Miles	SGT		US ARMY	2.85
3.	Joe Cline	PFC		US ARMY	2.85
4.	Peter Shaw	PFC	K-127807	US ARMY	
5.	Louis Dane	PFC	K-127944	US ARMY	
6.	Felix Santana	PFC	K-127883	US ARMY	
7.	Sam Walls	PFC	K-127901	US ARMY	
8.	Bill Moder	PFC	K-127936	US ARMY	
9.	Toby Ostrowski	PFC	K-127888	US ARMY	
10.	Glen Carson	PFC	K-127953	US ARMY	
11.					
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Figure 1-2. Sample meal request using one-line entry procedures (continued)

· Requests for dining facility support (meals) for short-duration field training (not to exceed five days) are completed per AR 30-21, Chapter 1. Figure 1-3 (page 1-5) shows a request for meals to support field training.

· A Food Service Officer and alternates are appointed to perform those duties required in AR 30-1.

ATSM-CES-OA (30-1d) 23 AUGUST 1992

MEMORANDUM THRU Food Service Officer

FOR Food Service Sergeant

SUBJECT: Garrison Supported Field Feeding Request, Per AR 30-21, para 1-6

1. Nature of requirement: ARTEP.

2. Number of personnel requiring rations:

   Meal card holders (SIK) 115 Field meal cards (FAO) 12 Total 127

3. Meals required:

   a. Date(s) required: 01 / SEP / 92 thru 03 / SEP / 92 (5 day maximum).

   b. Beginning meal Lunch Ending meal Lunch.

   c. Enter the appropriate type of ration(s) required,
   (A = A-Ration, MRE = Meal, Ready-to-Eat, T = Tray Ration or other
   _____):

Day	Breakfast	Lunch	Dinner
1		MRE	A
2	A	MRE	T
3	T	MRE	
4			
5			

4. Pickup information (Times):

   a. Breakfast 0530 Lunch 0530 Dinner 1700.

   b. Rank and name of individual designated to pick up meals,

   Rank SFC Name Edward J Harsh

5. This memorandum requires certification from the supporting PAC that BAS recoupment and/or payroll deduction (Officers) has been/will be submitted for personnel participating in this field training. This form does not delete the requirements that the DA Form 5913-R (Strength and Feeder Report) be submitted to the dining facility.

James Kennedy
JAMES KENNEDY
MSG, USA
PAC

Charles H. Berry
CHARLES H. BERRY
CPT, QM
COMMANDING

Figure 1-3. Sample request for meals to support field training

Reserve Component Commanders

In addition to the responsibilities above, RC commanders must ensure that--

- Subsistence ingredients are procured from commercial sources only when prior authority has been granted in writing by the USPFO for ARNG or by the MUSARC for USAR units.
- Commercially prepared (catered) meals are procured only when food service personnel and equipment are not authorized or available and support cannot be obtained from another RC or active military unit with food service capability through an Interservice Support Agreement.

Monitoring

The following are suggested ways a commander may monitor his supporting dining facility operation:

- Conduct unannounced visits to the dining facility to observe actual operations.
- Solicit diner comments (verbally or by using a suggestion box).
- Maintain constant coordination with the food advisor on matters concerning food service operations.

FOOD SERVICE OFFICER

The FSO is responsible for the accomplishment of the unit's food service mission. The FSO is appointed in writing by the commander. To ensure uniformity in the food service program, the FSO should be appointed for a minimum of one year. Also, the commander should ensure that the appointed FSO and alternates receive training and orientation courses provided by the FA. The FSO actually monitors the operation to ensure that--

- An OJT program is carried out.
- Safety and sanitation regulations are followed.
- Equipment is correctly operated and maintained, and a replacement plan is prepared.
- An energy conservation program is carried out.
- Supplies and food are correctly used, conserved, and stored.
- The facility is properly maintained.
- Headcount and serving procedures are followed.
- Unit strength figures are provided by supported units.
- All dining facility forms are completed correctly.
- The dining facility account is operated within the acceptable tolerance.
- The quarterly review of physical security is conducted per AR 30-1, Appendix I. Figure 1-4 (pages 1-7 and 1-8) is a sample format for conduct of the review.
- The monthly disposition of subsistence review is performed per AR 30-1, Appendix I. Figure 1-5 (page 1-9) is a sample format for conduct of the review.
- The quarterly review of requisition procedures is performed per AR 30-1, Appendix I. Figure 1-6 (page 1-10) is a sample format for conduct of the review.
- The quarterly review of receiving procedures is performed per AR 30-1, Appendix I. Figure 1-7 (page 1-11) is a sample format for conduct of the review.

FOOD ADVISOR

The FA may be a commissioned officer, a warrant officer, a noncommissioned officer, or a civilian, depending on the level of the operation. The FA assists the commander in meeting the goals of the food service program. Some of the specific duties of the FA at different operational levels are shown in Table 1-1 (page 1-12).

TROOP ISSUE SUBSISTENCE OFFICER

The TISO manages, supervises, and coordinates actions to ensure a constant supply of subsistence to all authorized customers. The TISO is appointed by the installation commander to supervise all aspects and functions of the TISA using the procedures specified in AR 30-18. The TISO is responsible for the requisition, receipt, storage, inspection, inventory, and issue of subsistence and for maintaining records for administrative,

audit, and historical purposes. The TISO is responsible also for safeguarding subsistence per AR 30-18, Chapter 9. The TISO also serves as a voting member of the Installation Menu Board and as a member of the Installation Subsistence Review Committee.

ATSM-CES-OA (30-1c) 12 October 1992

MEMORANDUM FOR COMMANDER

SUBJECT: Review of Physical Security, (QUARTERLY) Per AR 30-1, Appendix I

1. Per AR 30-1, Appendix I, I-4 an internal review of physical security was conducted at 8TH USAFAD dining facility on Day 9 Month OCT Year 1992.

2. The review was conducted as follows:

3. Subsistence accountability.

a. Do subsistence warehouses and rooms of the dining facility or other buildings used to secure nonrefrigerated food stuff, including field rations for contingency purposes, meet the security requirements, as stated on AR 190-18? YES ✓ NO _____
Comments on any deficiencies/negative replies: _____

b. Are refrigeration units with locking devices being secured? If this is not possible, does the room or the building in which the refrigeration unit is located meet the physical protection standards prescribed in storage structure security? YES ✓ NO _____
Comments on any deficiencies/negative replies: _____

c. Are subsistence storage facilities (warehouses and rooms, and refrigeration units) being secured at all times when entrances or exits are not under surveillance of personnel permanently assigned to the facility, (such as warehouse personnel or cooks)?
YES ✓ NO _____
Comments on any deficiencies/negative replies: _____

d. Are government key-operated, tumbler-type padlocks being used for security except in instances in which a commercially installed locking device exists?
YES ✓ NO _____
Comments on any deficiencies/negative replies: _____

e. Are the keys and padlocks used to protect food stuff and subsistence storage facilities stringently controlled? YES ✓ NO _____
Comments on any deficiencies/negative replies: _____

Figure 1-4. Sample format for the quarterly review of physical security

ATSM-CES-OA (30-1c)

SUBJECT: Continuation of a Review of Physical Security (QUARTERLY)

f. Are personal packages into or out of the subsistence storage areas prohibited? YES ✓ NO ____
Comments on any deficiencies/negative replies: ____

g. Is access to ration storage area(s) limited to those individuals conducting official business? YES ✓ NO ____
Comments on any deficiencies/negative replies: ____

h. Are operational rations on packed vehicles being stored in locked, enclosed vans, trailers, or armored vehicles or under the surveillance of a responsible unit member or guard? YES ____ NO ____
Comments on any deficiencies/negative replies: Not observed during this review.

i. Before disposal, are shipping containers, cases, etc., being inspected to ensure they are empty; are cardboard boxes being flattened? YES ____ NO ✓
Comments on any deficiencies/negative replies: Several boxes placed in trash without being crushed.

j. Are personnel lockers located in a designated area away from loose or broken containers of foodstuff? YES ✓ NO ____
Comments on any deficiencies/negative replies: ____

4. Are work buildings and rooms in which furniture and dining facility equipment are located, being secured when no responsible member assigned to the particular activity is present? YES ✓ NO ____
Comments on any deficiencies/negative replies: ____

Charles H. Berry
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CPT, QM
Food Service Officer

Figure 1-4. Sample format for the quarterly review of physical security (continued)

ATSM-CES-OA (30-1c) 9 July 1992

MEMORANDUM FOR COMMANDER

SUBJECT: Subsistence Accountability

1. Per AR 30-1, Appendix I, I-5, the monthly Disposition of Subsistence, (DA Form 3034-R) was completed (Encls 1 and 2) at the 125TH TRANS dining facility on Day 09 Month July Year 92.

2. The following four high dollar value items were checked:
   a. Ground Beef
   b. Chicken Patties
   c. Veal Portions
   d. Sausage Patties

3. The following items were within the 5 percent tolerance:
   a. Ground Beef
   b. Chicken Patties
   c. _____
   d. _____

4. The following items were not within the 5 percent tolerance:
   a. Veal Portions
   b. Sausage Patties
   c. _____
   d. _____

5. The monthly subsistence accountability check shows that subsistence accountability was/ was not within the established 5 percent tolerance for the high-dollar items reviewed.

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CPT, QM
Food Service Officer

2 Encls
1. DA Form 3034-2-R
2. DA Form 3034-2-R

CF:
Food Service Sergeant (w Encls 1 & 2)

Figure 1-5. Sample format for conduct of the monthly disposition of subsistence review

ATSM-CES-OA (30-1c) 23 APRIL 93

MEMORANDUM FOR COMMANDER

SUBJECT: Review of Requisition Procedures, (QUARTERLY) per AR 30-1 Appendix I

1. Per Ar 30-1, Appendix I, I-4, an internal review of requisition procedures was conducted at 8TH USAFAD dining facility on Day 23 Month April Year 93.

2. The review was conducted as follows:

3. Requisition procedures.

a. Are requests for rations determined or guided by the Master Menu, SB 10-260? YES ✓ NO ___ If the Master Menu is not used, what menu is used as a basis for the requests? Comments on any deficiencies/negative replies: ___.

b. Are mandatory menu changes, as directed by the menu board, incorporated when requesting rations? YES ✓ NO ___ Comments on any deficiencies/negative replies: ___.

c. Are requisitions completed by authorized personnel as indicated on DD Form 577 (Signature card), if applicable? YES ✓ NO ___ Comments on any deficiencies/negative replies: ___.

d. Are ration requests submitted on schedule and on documents prescribed by the TISA? YES ___ NO ✓ Comments on any deficiencies/negative replies: Several ration requests were submitted late.

e. Are requisition documents completed in ink and legible? YES ✓ NO ___ Comments on any deficiencies/negative replies: ___.

f. Are factors such as the day of the week and the time of the month (payday, holiday) considered when ration requests are completed? YES ✓ NO ___ Comments on any deficiencies/negative replies: ___.

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Food Service Officer

CF:
CDR, Unit
Food Service Sergeant, Unit

Figure 1-6. Sample format for conduct of the quarterly review of requisition procedures

ATSM-CES-OA (30-1c) 23 AUGUST 1992

MEMORANDUM FOR COMMANDER

SUBJECT: Review of Receiving Procedures, (Quarterly) Per AR 30-1, Appendix I

1. Per AR 30-1, Appendix I, I-3, an unannounced review of receiving procedures was conducted at the receiving point of 8TH USAFAD dining facility, on Day 22 Month August Year 92.

2. The review was conducted as follows:

a. Are scales available, in satisfactory operating condition and are used for receiving items that are charged and issued by weight (price per pound)? YES ____ NO ✓ Comment on any deficiencies/ negative reply: Scale broken, work order submitted, # 125193

b. Are items inspected for condition (quality) upon receipt? YES ✓ NO ____ Comment on any deficiencies/negative reply: ____

c. Are accurate comparisons of items issued versus items actually received being accomplished upon receipt? YES ✓ NO ____ Comment on any deficiencies/negative reply: ____

d. Are discrepancies, based on the accurate comparison, corrected on issue documents by receiving personnel? YES ✓ NO ____ Comment on any deficiencies/negative reply: ____

e. Do all receiving documents have a receipt signature? YES ✓ NO ____ Comment on any deficiencies/negative reply: ____

f. Are direct vendor delivery items inspected to ascertain that--

(1) Quantities actually received are those listed on the delivery ticket? YES ✓ NO ____ Comment on any deficiencies/negative reply: ____

(2) Items delivered are within the correct date or "use by" code? YES ✓ NO ____ Comment on any deficiencies/negative reply: ____

(3) Delivery tickets are receipted and signed only by designated receiving personnel? YES ✓ NO ____ Comment on any deficiencies/negative reply: ____

g. Are all issue or receiving documents being initialed by the reviewing officer? YES ✓ NO ____ Comment on any deficiencies/negative reply: ____

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CPT, QM
Food Service Officer

Figure 1-7. Sample format for the quarterly review of receiving procedures

Table 1-1. Duties of the food advisors

DUTIES	OPERATIONAL LEVEL				
	MACOM	CORPS	INSTALLATION	DIVISION	BRIGADE
Coordinate with surgeon on--					
• Sanitation		X	X	X	
• Sanitation certification training			X	X	X
• Nutrition education			X	X	X
• Dining facility nutrition initiatives.			X	X	X
Help units participating in testing of new food items or feeding systems.	X	X	X	X	X
Coordinate field feeding of tactical units.			X	X	X
Assist in solving food service problems related to--					
• Marshaling areas, isolated detachments, rear areas, and dining facilities for transient personnel.			X	X	
• Allied troops, prisoners of war, displaced persons, disaster victims, and indigenous personnel.	X	X	X		
• Expedient use of local resources to supplement rations and equipment.	X	X			
Help in developing food service contract documents.			X	X	X
Institute and monitor OJT or other training programs for food service personnel.		X	X	X	X
Advise education services officer on apprenticeships and professional development programs in food service.			X	X	
Help dining facility personnel by--					
• Developing and determining requirements for expendable items and supplies.			X	X	X
• Developing equipment replacement programs.	X	X	X	X	X
• Advising dining facility and supply activities on the requisitioning of equipment.			X	X	X
• Preparing reports on equipment deficiencies.	X	X	X	X	X
Help plan food service budget.	X	X	X	X	X
Coordinate activities of subordinate food advisors.		X	X	X	

Table 1-1. Duties of the food advisors (continued)

DUTIES	OPERATIONAL LEVEL				
	MACOM	CORPS	INSTALLATION	DIVISION	BRIGADE
Consolidate reports from food service supply activities.	X	X	X	X	X
Allocate funds to units for expendable items and supplies.	X	X	X	X	X
Participate in menu board activities as follows:					
• Serve as chairperson of the oversea master menu board.	X	X	X	X	
• Serve as chairperson of the installation menu board.			X		
• Appoint menu board secretary-recorder.	X	X	X	X	
• Serve as voting member.	X	X	X		
• Serve as nonvoting member.				X	X
Advise commander on matters concerning food service program.	X	X	X	X	X
Visit dining facilities and check accounting, food preparation, serving, sanitation.	X	X	X	X	X
Act as liaison between commander and others involved in the food program.	X	X	X	X	X
Develop supplements to regulations and bulletins.	X	X	X	X	
Interpret and spread food service information.	X	X	X	X	X
Maintain personnel data used for school attendance recommendations, duty assignments, and local training assignments.			X	X	X
Serve as contracting officer's representative on food service contracts.			X		
Perform quality assurance functions for food service contracts.			X	X	X
Advise the facility engineer on design and layout of all proposed new or renovated dining facilities on the installation.			X		

SUPPORT PERSONNEL

The following personnel are required to support a successful garrison food service program. Their responsibilities are described in this paragraph.

Veterinary Officer

The veterinary officer (or veterinary service personnel) inspects all perishable and semiperishable subsistence as requested. VSP inspect excess subsistence turned in by food service facilities, before it is accepted by the TISA. They also inspect damaged or deteriorated subsistence and may recommend that it be dropped from accountability or force issued. VSP inspect food storage and handling operations and point out unsanitary conditions. The Veterinary Officer serves as a nonvoting member of the menu board and informs the board of items that should be issued soon. The board then may decide to make these items a mandatory substitute for items on the menu. When time does not permit this, the TISO or appropriate Class I officer may decide to force issue these items.

Preventive Medicine Officer

The preventive medicine officer conducts medical inspections as prescribed in TB MED 530. He also assists in training supervisory personnel in sanitation.

Facilities Engineer

The installation facilities engineer is responsible for the construction and maintenance of buildings used for food service activities, for repair and maintenance of food service equipment and machinery, and for insect and rodent control. Also, he certifies space, utilities, and funds for installation of replacement equipment are available and his personnel install all replacement equipment. He advises on the design and the layout of buildings for all food facilities and reviews the designs of buildings used for storage. The facility engineer also provides training in the proper use of dining facility equipment.

Contracting Officer's Representative

The COR is responsible for the day-to-day administration of food service or TISA contracts. The contracting officer and staff legal officer or judge advocate must instruct and train the COR. The Contracting Officer will specify the COR's duties, responsibilities, authority, and limitations, in a letter of appointment.

Inspector General

The IG is the commander's watchdog. He investigates individual complaints and reviews any areas of special interest as identified by the commander.

Property Book Officer

The PBO maintains records of all unit property. He also assists in identifying equipment data for budgeting, procurement, turn-in, and maintenance records.

Director of Personnel and Community Activities, G1, or S1

This officer is responsible for assigning personnel to units and for requesting replacement personnel. He is also responsible for identifying personnel entitlements (BAS) and processing documents for payment of BAS or issue of meal cards to personnel authorized subsistence-in-kind. The DPCA, G1, or S1 also coordinates the preparation, production, and distribution of printed matter.

Director of Security, G2, or S2

This officer is responsible for intelligence, counterintelligence, and security. The DSEC, G2, or S2 provides requested security clearances for local national employees, may evaluate the security of dining facilities and food supply activities, and

controls changes to the combinations of food service facilities safes.

Director of Plans and Training, G3, or S3

This officer is responsible for operations and training. ***(NOTE:*** *At some installations, the Director of Plans, Training, and Security shares the responsibilities of the DSEC and the DPT.)*

Director of Logistics, G4, or S4

This officer is responsible for supply, maintenance, transportation, and services, to include food service. On some installations this officer may be known as the Director of Industrial Operations or Director of Installation Services. The FA works for or very closely with the DOL, G4, or S4 to keep him informed on the technical aspects of food service problems and issues.

Assistant Chief of Staff, G5 or Civil Affairs Officer (US Army) (S5)

This officer is responsible for the relationship between the Army force, the civilian government, and civilians in a theater of operations for garrison operations.

Director of Contracting

The DOC procures TISA subsistence supplies authorized for local purchase. He is responsible also for awarding and monitoring compliance with all food service contracts.

FOOD SERVICE SERGEANT

The FSS is in direct charge of and manages the overall operation of the dining facility. He must be knowledgeable in all areas of dining facility operations and in personnel management. The duties of a contract dining facility manager parallel those of the FSS, although the contract must specify what is required of the contractor. The term FSS as used in this manual applies also to a DA civilian or contract manager. Table 1-2 (page 1-16) contains duties of the FSS.

FIRST COOK (SHIFT LEADER)

The first cook is responsible for assigning and supervising job performance of cooks and military dining facility attendants. Normally, he is responsible for the complete kitchen operation, including accountability for rations, storage, sanitation, food preparation, serving, safety, security, and energy conservation. Also, he may have to ensure that proper headcount procedures are followed. When the FSS is absent, he is in charge of the overall dining facility operation. Specific duties are in AR 611-201.

COOK

The major duties of a cook are to prepare, cook, and serve meals. He must be able to prepare a variety of foods, both in small and large quantities, using the recipes in TM 10-412. He must know how to use dining facility equipment and utensils and how to perform maintenance on the equipment and utensils following basic safety and sanitation rules. This publication gives detailed information to assist him in becoming more familiar with specifics pertaining to assigned duties.

TISA OPERATING PERSONNEL

The personnel needed to operate a subsistence supply activity vary depending on the size, type, and location of the activity. Guidance on the number and type of personnel needed to staff a TISA is based on Manpower Staffing Standards in AR 570-5. When local civilian labor is used to staff activities in foreign countries, the appropriate G1 or S1 should be consulted. Prisoners of war may be used to staff supply points issuing subsistence if the supply point is not in a combat zone. Information on the treatment of prisoners of war is detailed in FM 27-10, and this treatment comes under the authority of the appropriate G2 or S2.

Table 1-2. Duties of the food service sergeant

AREA OF RESPONSIBILITY	DUTIES
Subsistence Requests	Estimates future meal attendance and prepares requests for food items.
Files	Maintains files according to AR 25-400-2.
Cash Collections	Accounts for all cash collections per AR 30-1. Turns in cash to the FSO or designated turn-in point.
Dining Facility Account	Maintains DA Form 3980-R.
Headcount Instructions	Maintains current headcount instructions per AR 30-1, Appendix E. Briefs headcounters prior to their performing duties. Ensures headcounters perform as instructed.
Operations	Works closely with food service personnel to improve standards of performance. Stays current on regulations by studying new publications.
Personnel	Determines how many personnel are needed to prepare, cook, present, and serve foods. Schedules shifts and assigns major duty areas. Makes recommendations concerning the promotion, assignment, and training of personnel. Ensures that all assigned personnel are inspected by supervisors for personal hygiene. Coordinates with the COR for matters concerning contracted dining facility attendants.
Security	Makes sure that the dining facility, food, equipment, and cash are secure.
Preparation, Cooking, and Serving	Develops SOPs for all kitchen, serving, and dining facility operations. Prepares the production schedule and all forms used in the operation of the dining facility. Inspects the serving line to ensure all items are available and pleasantly merchandised. Conducts studies of diner preference and acceptance of different types of food.
Sanitation	Supervises employee personal hygiene practices; ensures sanitary storage, preparation, transport, and serving of food. Maintains clean and sanitary food service facilities, equipment, and utensils.
Safety	Supervises personnel on safety practices and operations. Assures that personnel observe appropriate safety and occupational health rules.
Training	Develops, implements, and supervises all the OJT of assigned 94B personnel. Supervises the administration of unit food service personnel participating in the cook's apprenticeship program. Ensures that all food service personnel under his control are trained in the principles of food service sanitation as outlined in TB MED 530. Supports the unit training program by ensuring that all food service personnel receive training in common soldier skills and other required instruction.

CHAPTER 2

BUDGETS

GENERAL

Annual budgets must be established for TISA and food service operations. This chapter defines responsibilities and explains the requirements for the installation dining facility budget fund.

PLANNING FACTORS

The installation FA, with input from other command FAs, and the TISO provide input to the installation budget. Figure 2-1 (page 2-1) shows how the installation staff is organized for budget development. The three phases of the installation budget cycle are the formulation, development, and execution phases. Manpower requirements are developed separately from the installation budget, but they have a direct effect on the budget.

Formulation

The installation budget cycle begins each April when the commander receives budget and manpower guidance from the MACOM. This guidance defines the installation mission and tells what resources will be provided. After consulting with the staff, the Director of Resource Management tailors the budget and manpower guidance to the specific needs of the installation. Figure 2-2 (page 2-2) shows the formulation phase of the budget cycle.

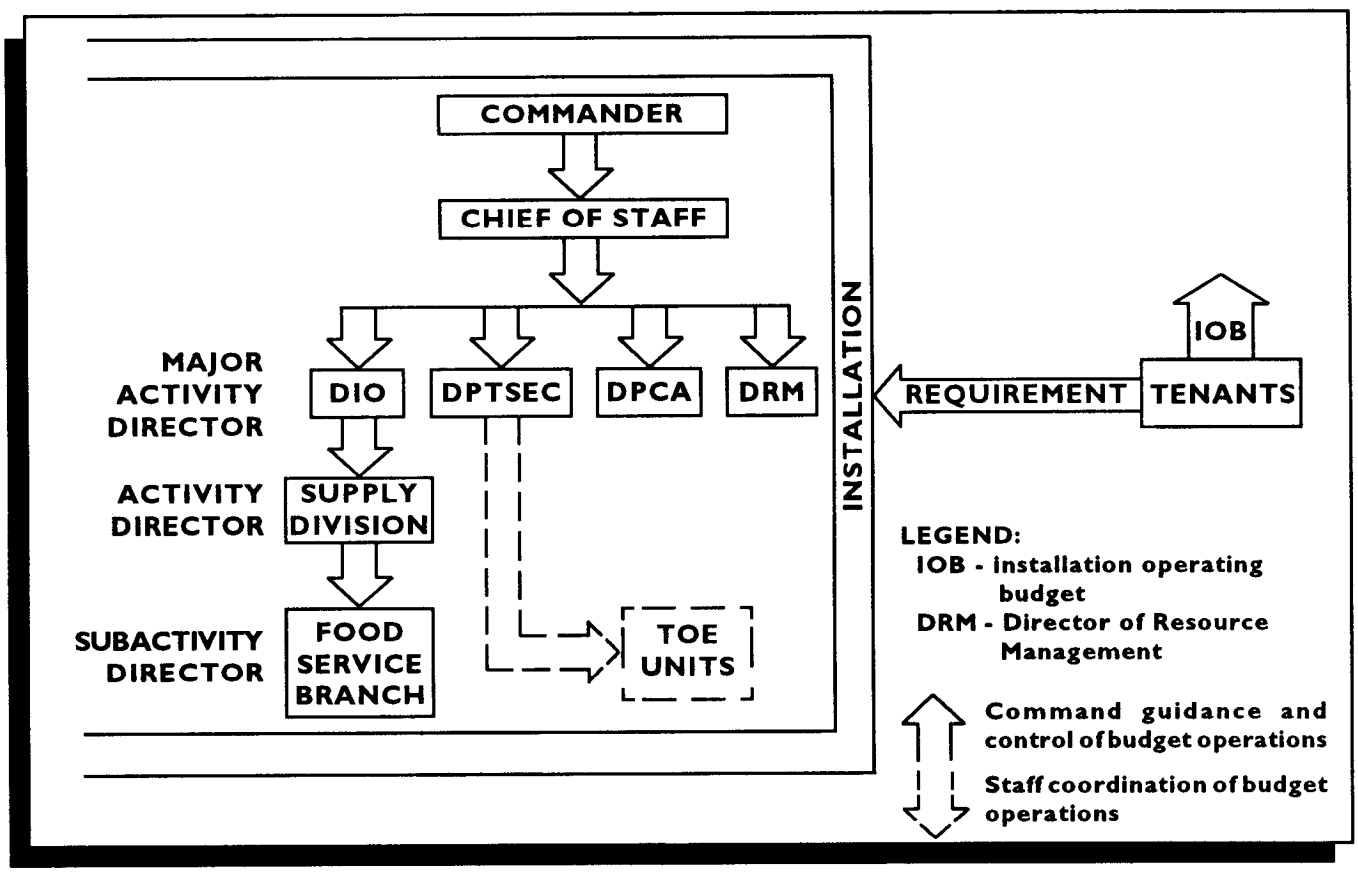


Figure 2-1. Staff organization for budget development

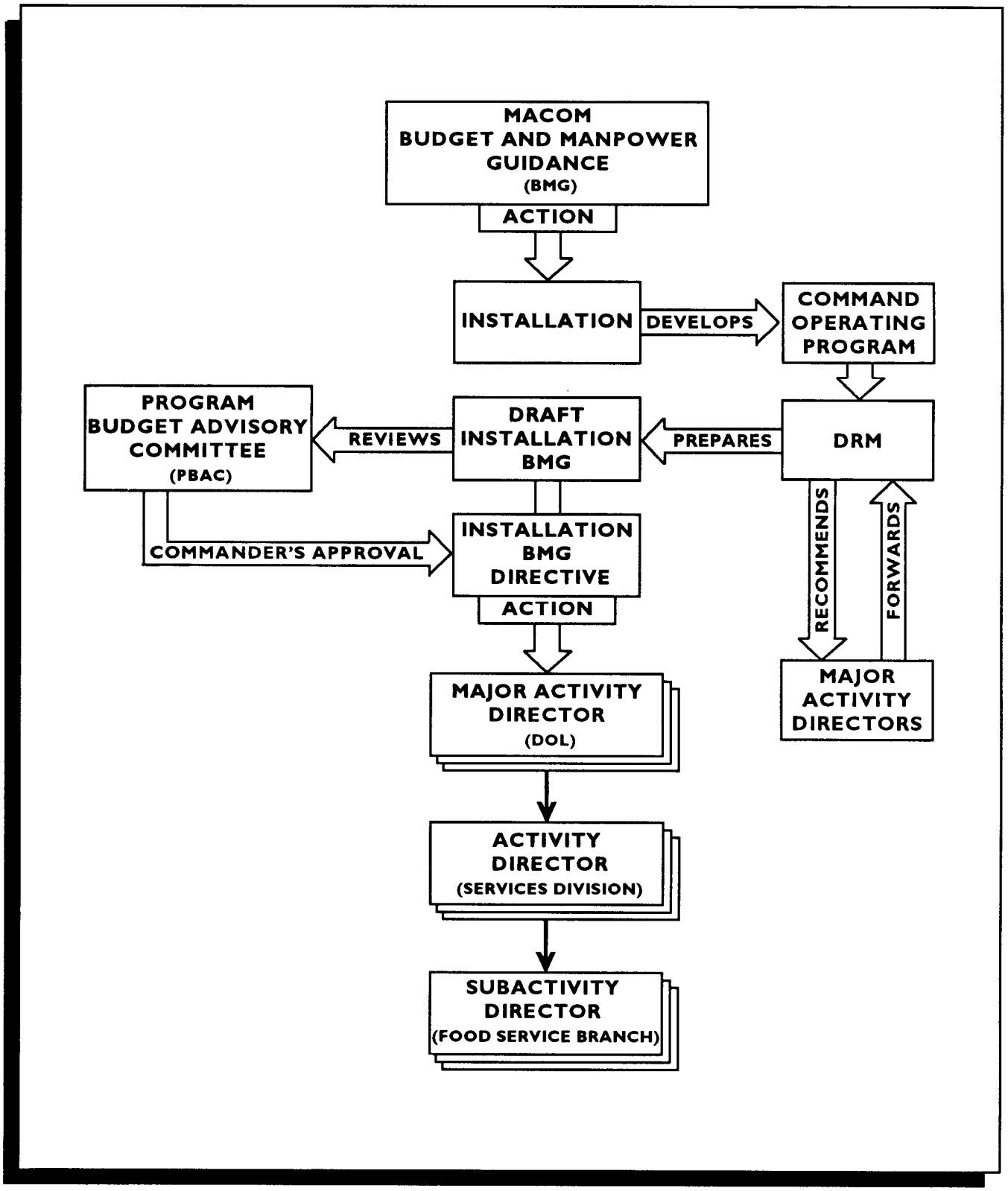


Figure 2-2. Formulation phase of the budget cycle

Development

Based on annual guidance from the chief of the services division, the FA and the TISO develop their portion of the installation budget. First, they compare projected ceilings with projected requirements. If fund requirements exceed projected ceilings, they must prioritize requirements. The chief of the services division may accept the shortfall, revise cost ceilings from the division, or request adjustment to cost ceilings from the DOL. If projected ceilings exceed requirements, the chief of the services division adjusts the ceilings for other activities within the division or advises the DOL. Figure 2-3 (page 2-4) shows the development phase of the budget cycle. The installation FA develops the food service budget using an activity schedule for each activity account code for which he is responsible. Activity account codes are in AR 37-100. Figure 2-4 (page 2-5) is an example of an activity detail schedule for the operation of dining facilities. Each schedule includes a series of elements of expense. See AR 37-100 for more information on elements of expense. The DRM can provide detailed guidance on how to figure costs, such as those for personnel and office supplies, which are common to all activities. The installation FA must use his judgment and the input from other FAs and facility managers to develop cost projections for food service activities. Projected fund requirements should be based partly on the budget from the previous year. If there was a significant deficit or surplus, the TISA or installation FA should adjust the current year's projections accordingly. The budget projection should then be adjusted for the current rate of inflation or deflation. The rates may be obtained from the DRM. Some considerations which will influence projected fund requirements and the food service budget are described below.

Equipment replacement. The TISO and FA should maintain copies of equipment replacement records for all nonexpendable garrison equipment on the installation. The forms, (DA Form 3988-R for dining facilities and DA Form 4170-R for TISAs) which are prepared by the TISO and each FSS, list programmed replacement dates for equipment from the appropriate TB in the 750-97 series or in the 43-0002 series or from the manufacturer's operation manual. However, programmed replacement dates may not be accurate. Since installation facility engineers are responsible for maintaining the equipment, they can advise when a piece of equipment is not economically reparable. The installation FA should include the cost of replacing that item in the budget. Garrison equipment is financed from either Other Procurement, Army funds or Operation and Maintenance, Army funds. Equipment that has been designated base-level commercial equipment is financed through OPA funds. Generally, equipment that costs more than $15,000 is classified as base-level commercial, but check SB 700-20 and the Army Master Data File to be sure. Such equipment is centrally funded, so requirements must be submitted to the MACOM separately from the installation budget. To find the publication that has more on this topic, look under BASE LEVEL COMMERCIAL EQUIPMENT FIELD GUIDANCE in the alphabetical cross-reference of DA Pamphlet 25-30.

Contract costs. The FA must identify projected contract costs for any phase of food service operations which are to be contracted. Total OMA costs for operation under a contract should include salary expenses that have been paid out of military personnel, Army funds; functions formerly performed by DA civilians; and costs for supplies if the contractor is to furnish items previously provided by the government.

Improvement. The two basic types of facilities improvement are new construction and modernization. Construction includes the building of new facilities and the renovation of existing facilities. The cost of minor construction (under $200,000) is paid out of OMA funds. The cost of major construction is paid out of military construction, Army funds. The Chief of Engineers prepares this part of the budget. Modernization includes the completion of new facilities and improvement of existing facilities. It involves the installation or replacement of chairs, tables, booths, floor and wall coverings, partitions, drapes, lights, sound

systems, and other such items. Costs for modernization are paid out of OMA funds, which the FA must include in the installation budget.

Training. Although training costs are minor in comparison with the other items discussed, they should not be overlooked. The installation FA and TISO should be sure to project the costs for per diem, travel, and tuition for personnel to attend resident courses. Also include the cost of bringing mobile training teams to the installation for on-site training and for attendance at food service or TISA conferences and work shops.

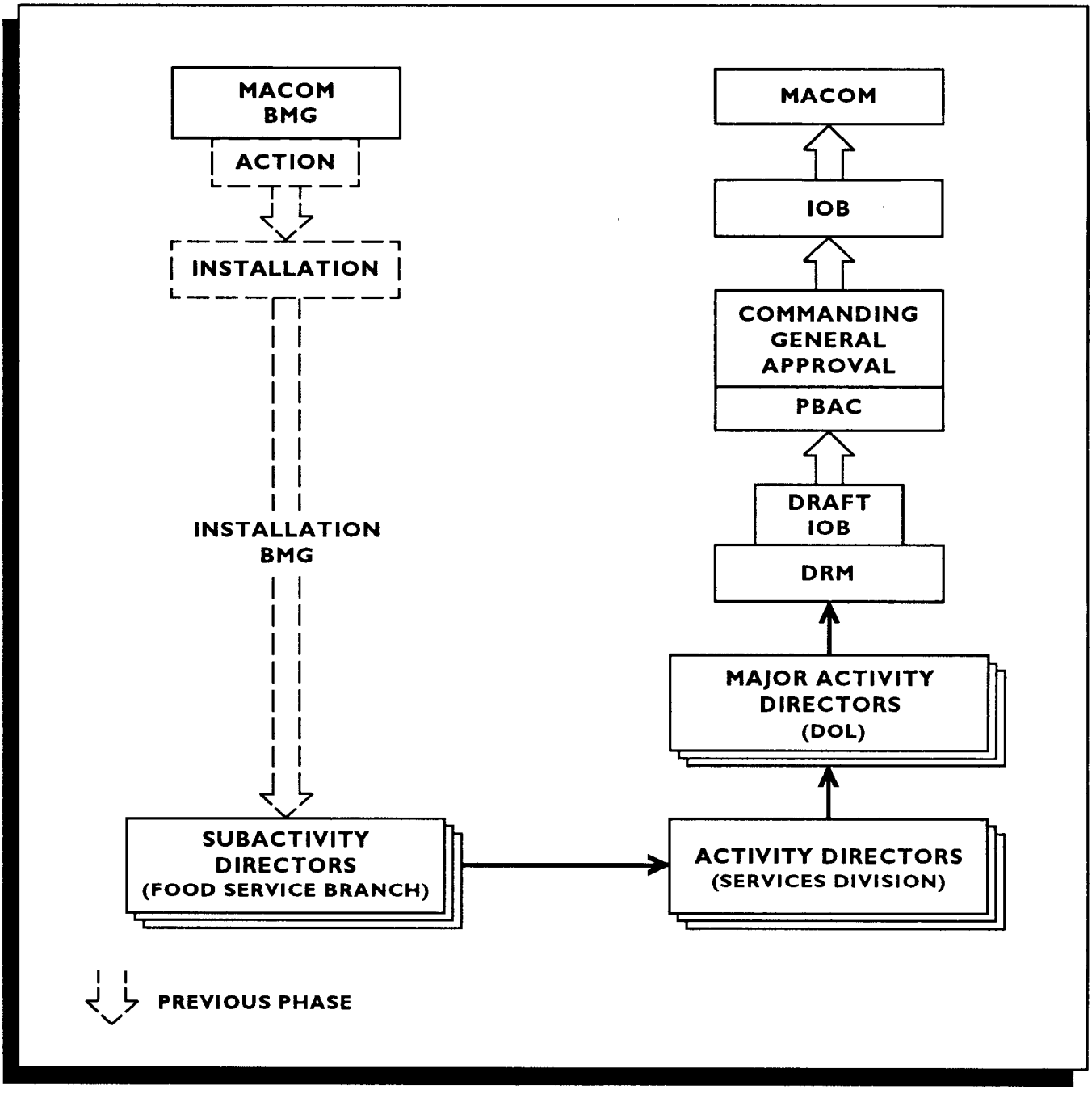


Figure 2-3. Development phase

ACTIVITY ACCOUNT CODE
.F3000

ACTIVITY DETAIL SCHEDULE **TITLE: OPERATION OF DINING FACILITIES**

DESCRIPTION	CURRENT YEAR	BUDGET YEAR FORECAST (CUMULATIVE) 1st Qtr	2d Qtr	3d Qtr	4th Qtr	UNFINANCED REQUIREMENTS
Civilian Personnel Compensation *(EOE 1100 series)*	$1,185,000	$300,000	$600,000	$900,000	$1,200,000	
Personnel Benefits *(EOE 1200 series)*	71,000	18,000	36,000	54,000	72,000	
Travel & Transportation of Personnel (TDY) *(EOE 2100 series)*	10,000	2,000	5,000	8,000	10,000	
Other Services *(EOE 2300 through 2500 series)*	290,000	80,000	149,000	213,000	297,500	
Consumable Supplies *(EOE 2600 series)*	80,000	20,750	40,250	64,750	90,500	
Equipment *(EOE 3100 series)*	50,000	100,000	110,000	135,000	180,000	
Total OMA Costs	$1,600,000	$520,750	$940,250	$1,374,750	$1,850,000	
Personnel Strength:						
Military End Strength	60	50	50	50	50	
Military Average Utilization	60	50	50	50	50	
Civilian End Strength	130	140	140	140	140	
Reimbursements:						
Funded	0	0	0	0	0	
Automatic	0	0	0	0	0	
Performance Factor (AR 37-100-FY) *(Number of meals served in units of 1,000)*	1,600	415	805	1,295	1,810	

LEGEND: *EOE - element of expense* *OMA - operation and maintenance, Army* *TDY - temporary duty*

Figure 2-4. Typical activity detail schedule

Execution

At the beginning of each fiscal year, the installation commander receives a funding authorization document from the MACOM. This document establishes authority to spend and obligate funds. After reviewing the funding authorization document with the installation staff officers, the DRM provides approved obligation and expense ceilings to the DOL and to other major activity directors. The installation FA and TISO receive their ceilings from the chief of services division. Figure 2-5 (page 2-6) shows the execution phase of the installation budget. DO NOT spend or obligate more money than you are authorized. Doing so is not only poor management--it is illegal.

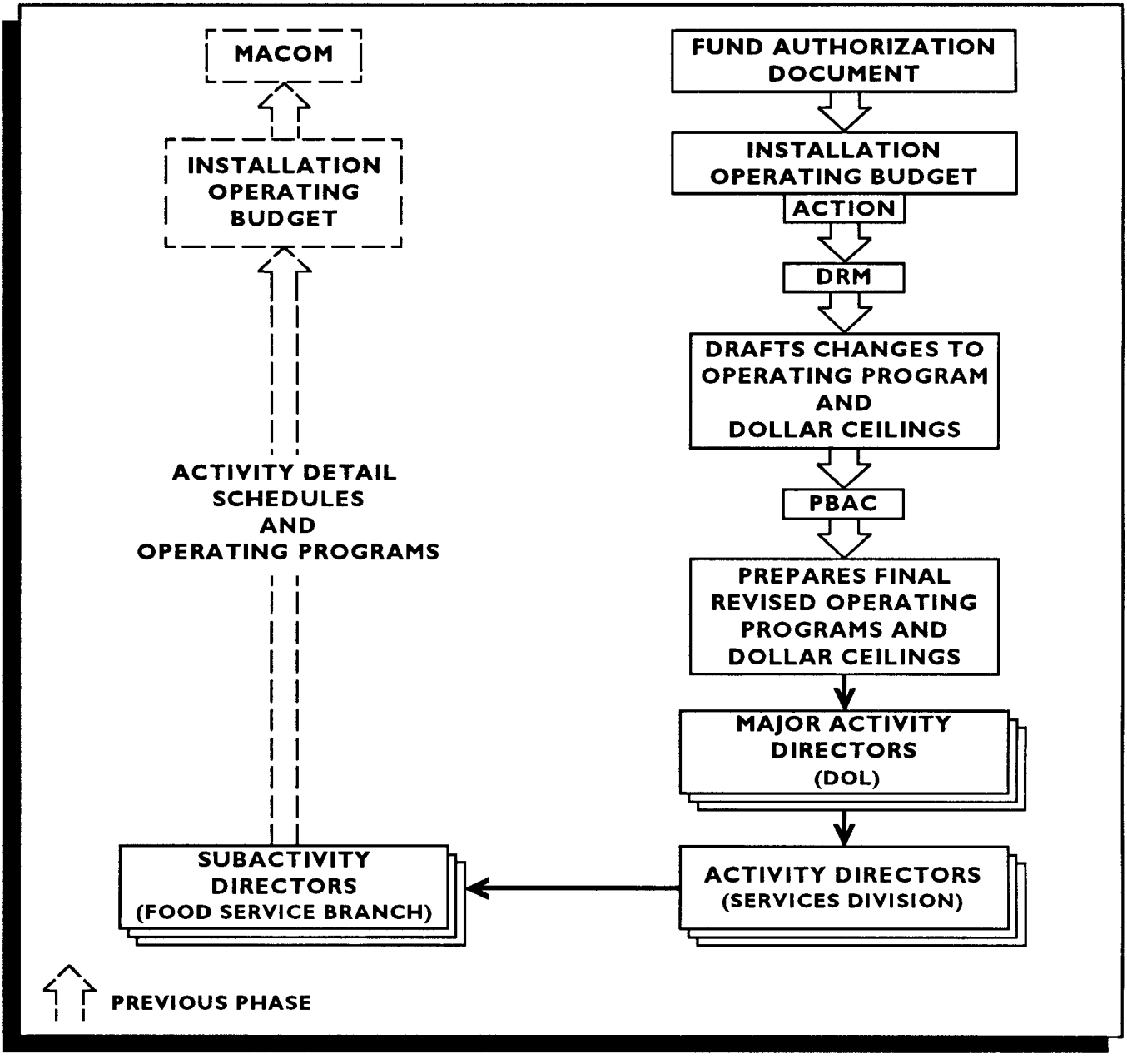


Figure 2-5. Execution phase

CHAPTER 3

MANPOWER

GENERAL

Manpower in a dining facility is broken down into two categories. These categories are food service personnel and dining facility attendants. The personnel needed to operate a subsistence supply activity vary depending on the size, type, and location of the activity. Managers need to be familiar with the procedures for determining manpower authorizations and where to go for assistance.

PERSONNEL

A food service organization or TISA may be operated by the Army or by a commercial firm under government contract. Guidance for determining the number of personnel required to operate a dining facility or a subsistence supply activity is described below.

Staffing Standards

Manpower staffing standards for food service or TISA provide work measurement standards. They are a management tool for identifying personnel requirements.

Staffing Guides

The staffing guide to operate a TOE or an MTOE dining facility is in AR 570-2.

Authorization Documents

There are five basic types of authorization documents. They are the TOE, MTOE, TDA, the augmentation TDA, and the mobilization TDA.

Staffing

After the level of manpower authorization has been set, the FA helps the appropriate staff officer ensure that the required manpower is provided. To do this, the FA works closely with the DPCA, the G1, or the S1; the civilian personnel officer or the G5; and the G4 or the S4. Depending on how the organization is staffed, food service or TISA personnel may be provided through military replacement, direct hire of civilians, or contract.

Military replacements. Military replacement requisitions are generated through the SIDPERS. This system is described in the DA pamphlets in the 600-8 series. The DPCA or G1 is the point of contact for military personnel problems.

Direct hire. Direct hire of civilians is done through the servicing CPO. FSSs request replacements by submitting SF 52. The FA may need to help him develop job specifications for food service people. Also, the FSS should be provided training in supervision and administrative procedures of a civilian work force.

Contract. If a contract is awarded for food service or TISA operations, it is up to the contractor to provide the personnel required to accomplish the mission. As a rule, the Army does not specify required staffing in a contract for food services. The work statement indicates what is to be done, and the contractor is responsible for performance. The appointed COR is the authorized government representative for contract problems. Per AR 735-5, the TISA accountable officer position cannot be contracted. This has been determined to be a government-in-nature position.

DINING FACILITY ATTENDANTS

If funds are available, DFA services will be contracted in all appropriated fund garrison dining facilities except galleys aboard Army vessels. Military and civilian staffing is described here.

Military Staffing

Except under the circumstances above, military personnel will not perform DFA duties on a regular basis without prior approval of HQDA (see AR 30-1). When military personnel perform DFA duties, they will not be supervised by a contractor. They will be supervised by government personnel. When military personnel are required to perform DFA duties, they will be selected from a duty roster. The normal allowance of DFAs is four per dining facility serving 100 people subsisted and one additional DFA for each 50 additional persons or major fraction thereof. This staffing guideline is based on using personnel who are unskilled in performing DFA duties and who require extensive supervision. This guideline is not to be used for estimating the staffing levels or performance cost of either direct hire or contract civilian personnel.

Civilian Staffing

When civilian DFAs are used, their duties will be covered in the local contract or individual job descriptions. Usually, they unload and store supplies, prepare fruits and vegetables for cooking, clean the building and equipment, operate dishwashers, and take out trash. They may also be required to serve meals and to perform headcount duties. In contract DFA operations, the COR may check with the FSS to make sure that the duties are performed to required standards. The FSS will not directly supervise contract employees, but he will coordinate work requirements with the DFA supervisor.

COOKS AND FOOD SERVICE PERSONNEL

In garrison, cooks may be military; civilian, or both. Military cooks have been taught the basics of how to cook and bake in advanced individual training, but they will rapidly lose their skills if they do not use them. More discussion on how to manage and schedule personnel is in Chapter 5. Normally, civilians are hired based on their background and training.

Cook Duties

The duties of cook personnel are the same in military- or civilian-operated dining facilities. Basically, they prepare, cook, and serve meals. They must be able to prepare a variety of small and large quantities of food. They must know how to use the dining facility equipment and utensils and how to follow the basic safety and sanitation rules. The first cook on each shift is in charge of the cooks, DFAs, and the kitchen operations, except where a function is contracted. Normally, the first cook will delegate some of the duties so that he is free to supervise food preparation, serving, and cleanup.

Baking

Even though it may be more convenient to order baked items from commercial vendors, all cooks should be trained to produce baked products. Make baking part of a continuous cross training program by including baked goods on the menu. Products should be made using TM 10-412 recipes versus use of commercial mixes. Formal training is available and outlined in Chapter 6 for military personnel. Cooks unable to take advantage of formal training can take correspondence courses which are also available to civilian contract personnel.

TISA ORGANIZATION AND PERSONNEL

The TISA is administered by a TISO. The TISO may also serve as chief of the control branch. A TISA may have both civilian and military personnel. Oversea areas are staffed according to local directives. A typical TISA organization (Figure 3-1, page 3-3) has a control branch, which is the administration center, and a storage/distribution branch which actually handles the receipt, storage, and issue of subsistence items.

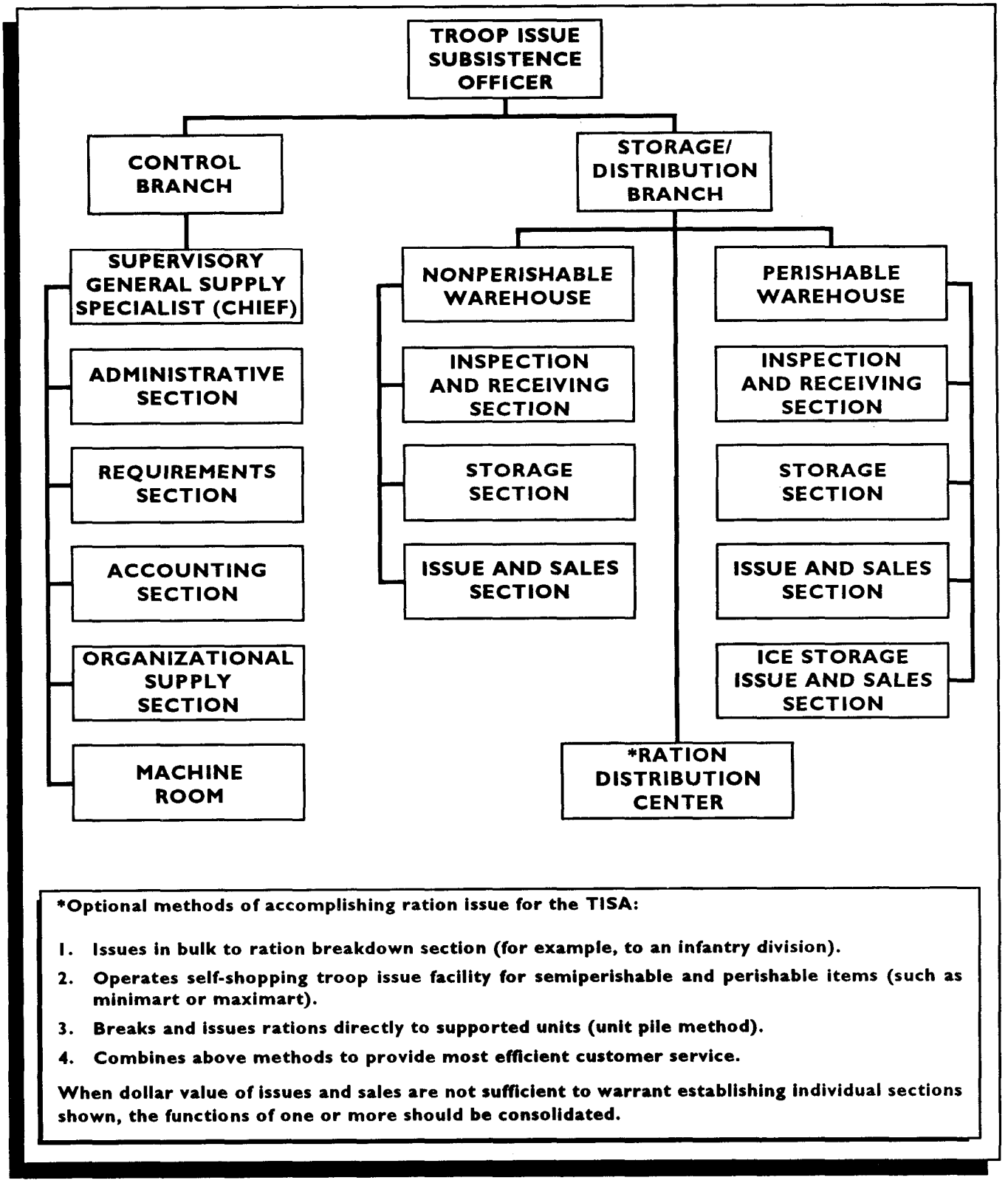


Figure 3-1. Typical functional arrangement for a TISA

MANPOWER REQUIREMENTS

TDAs are based on periodic manpower surveys conducted by major commands. The surveys are taken every two to five years. They are described in detail in AR 570-4 and DA Pamphlet 570-4. The FA and TISA provide input on their activities to the manpower survey. When a manpower survey is taken, the S4 of each battalion computes manpower requirements for food service personnel. The S4 uses DA Form 140-4. This form is commonly known as a Schedule X. Requirements are consolidated at each headquarters. The installation FA should consolidate requirements for all food service activities. Manpower survey teams review the Schedule X and recommend staffing levels to be incorporated in the next revision of the installation TDA. Since team members are not always familiar with the food service field, the FA must provide them with special requirements peculiar to the installation or command. For example, the yardstick manpower requirement for food service personnel includes average daily headcount, operating hours, size of facility, number of serving lines, type menus being offered, and field feeding requirements. Staffing requirements to perform these missions should be documented in the REMARKS block of the Schedule X. Remember, Manpower Staffing Standards are only a guide. Your facilities may require more or fewer people to get the job done.

CHAPTER 4

CONTRACTS

GENERAL

This chapter provides an overview of food service contracting. The Army has made measurable progress in improving the food service contracting process and quality of service to the soldier. This is attributed to several factors. These factors include command efforts, use of the DA prototype performance work statement and Quality Assurance Surveillance Plan for food service contracts, training, effective use of experience, and lessons learned. Policy, responsibilities, and administrative regulations are in AR 30-1, Chapter 13. Food service contracts performed in government-owned facilities consist of three types. They are full food service, dining facility attendant and management, and food production.

COMMAND CONCERNS

Many commanders feel that they have lost their flexibility, control, and decision-making power when their dining facilities are contracted. Although there may be contracting limitations, commanders are still responsible for the quality of subsistence received by their soldiers. The operation of the dining facility should not change with a food service contract. Contractors must adhere to the same guidelines as the military to include AR 30-1, SB 10-260, and TM 10-412. Food service personnel can assist commanders in carrying out their responsibilities, easing the transition from military to a contract operation, and providing quality assurance administration for the contract.

COMMANDER'S ACTIONS

Commanders need to be aware of contract provisions and procedures, contract flexibility of operation, and procedures for effecting changes. An SOP properly implemented at the installation and within each command will serve as a guide towards achieving a successful contract operation. Commanders do not exercise supervision or control over the operation of a contracted dining facility that feeds their soldiers. Commanders should report to the COR conditions in the facility which do not conform to the established contract standards for food preparation, service, or sanitation.

Make unannounced visits to the dining facility to observe the operation and solicit diner comments. Visits must be conducted in such a way that it does not hinder the contractor's operation.

Recommend methods to correct noted deficiencies. Informally discuss with the contractor the status of operations as they affect soldiers under his command. Provide recommendations to the COR or IFA as to how the contractor can improve the quality or quantity of the food served, the atmosphere, or the sanitation or cleanliness of the facility. Table 4-1 (page 4-2) is a list to help commanders with full food service contracts.

COMMERCIAL ACTIVITIES

The commercial activities program is a productivity improvement program. It is based on the OMB Circular A-76. The circular states three policy objectives. The first is achieve economy and enhance productivity. The second is retain governmental functions in-house. The third is rely on the commercial sector. Food service is classified as a commercial service obtainable through private business.

Contracting of both TOE and TDA dining facilities is subject to AR 5-20 if DA civilian employees are presently assigned and performing food service duties. When DA civilians are engaged in the tasks and duties of performing food service duties in a dining facility, a commercial activity study must be performed prior to contracting the service. The study itself includes the

development of a PWS, a QASP, and an in-house cost estimate. The study is conducted to determine whether the service can be more efficiently performed in-house or by a private contractor. In order for the function to to be contracted, the contract price, including an additional 10 percent of the in-house personnel related costs, must be lower than the government's bid.

Dining facility attendant service is authorized for all dining facility operations, with the exceptions of field operations, combat situations, and galleys aboard Army vessels. Such service must be contracted instead of using borrowed military labor.

Table 4-1. General guidelines for commanders

DO
• Observe contractor operations. • Follow procedures and time frames for getting changes implemented. • Coordinate through the COR to solve any problems that arise. • Report to the COR any discrepancies in contractor performance.
DON'T
• Ask the contractor for unauthorized or illegal service and support, such as cake, cookies, and coffee for orderly room or social functions. • Suggest better methods of performance. • Direct contractor personnel in the performance of their duties. • Ask for copies of any paperwork. • Make "trade-offs" with the contractor concerning government-performed tasks and contractor-performed tasks.

DIRECTIVE TO CONTRACT

The Vice Chief of Staff, Army directed that food preparation and management of all TDA dining facilities be contracted by March 1988. This action was a result of an Army reduction in food service personnel authorizations. Food preparation and management in TOE dining facilities are to be contracted only when specific criteria, as outlined in AR 30-1, have been met.

MANDATORY USE OF DA PROTOTYPE

A properly prepared PWS can mean the difference between a successful and an unsuccessful contract. The Army must maximize standardization in food service contracts to improve the quality of service to our soldiers, to control cost, and to improve the contracting process overall. The US Army Quartermaster Center and School maintains, publishes, and distributes the DA prototype PWS and QASP for food service contracts. The use of these prototypes is mandatory for developing and renewing new food service contract documents. Prototypes are available in hard copy and various software programs from--

Commander
USAQMC&S
ATTN: ATSM-CES-OR
Fort Lee, VA 23801-5041

Call:
AV 687-7118 or Commercial (804) 734-7118

INSTALLATION FOOD SERVICE ACTIONS

Installation food service personnel have specific responsibilities when contracting dining facility operations. They must tailor the DA prototype PWS and QASP to meet specific installation requirements.

Once the PWS has been finalized, food service personnel must prepare an independent cost estimate for the services to be contracted. Preparation of these documents should be a team effort in coordination with the installation contracting activity. Tailoring the PWS does not include

changing the prototype to suit a contracting activity. The prototype will be used by all Army installations for standardization of food service contracts.

Upon installation approval of these documents, the PWS and QASP must be certified by the MACOM food service activity as part of its review and approval process.

Following the award of a contract, the food service activity personnel will be responsible for performing quality assurance on the contract and for developing a contingency plan for use in the event of labor strikes, acts of God, or civil disturbance or if the contractor fails to perform.

Assistance in developing these documents may be obtained from --

USAQMC&S
ATTN: ATSM-CES-OR
Fort Lee, VA 23801-5041

COR DUTIES

A COR is an agent of the government designated by the Contracting Officer (KO) with specific authority and limitations to assist the KO in administering the contract. The KO has overall responsibility for contract execution and administration. He has broad authority over food service contracts, to include having authority to enter into, administer, or terminate contracts and to make related determinations and findings. Each COR designation is in writing, and clearly defines the scope and limitations of the COR's authority. The COR may not redelegate his authority. Each COR position is different, depending on the nature and extent of authority the COR is given in the letter of designation. Some general guidelines are provided in Table 4-2 (page 4-3). The COR duties are rather specific in nature and terminate upon conclusion of the contract or transfer of the individual. Quality Assurance Evaluators, who perform only inspection duties as a representative of the food service activity, are appointed by the COR. Therefore, they do not need a COR letter of designation to perform their duties. Individuals appointed as CORs or QAEs must work together in keeping the KO informed of the contractor's performance.

Table 4-2. General guidelines for CORs

DO
• Have a copy of the contract. • Know what is in the contract. • Keep a copy of your letter of appointment. • Understand the limits of your authority. • Maintain records of all transactions affecting the contract. • Be aware of the Army's standards of ethical conduct. • Refer the contractor's correspondence promptly to the contracting officer. • Document all actions on the contract. • Keep communication channels open. • Observe contract operations. • Read and check reports from contractor. • Supervise inspection teams. • Keep contractor and contracting officer informed of problems or deficiencies. • Ensure instructions to the contractor are in writing from the contracting officer.
DON'T
• Supervise contractor employees. • Tell contractor how to do the job. • Become personally involved in disputes. • Let the contractor perform work outside the scope of the contract. • Delay correspondence or reports.

TYPES OF CONTRACTS

The KO, having the authority to determine the type of contract, has a wide selection of contract types from which to choose. These types of contract range from the sealed bid, firm fixed-price contact to a cost or fixed price plus award fee contract. The different types of contract are fully described in the FAR. In the past, many contracting officers had thought that food service requirements were small, easily defined, and a stable recurring function, so the sealed-bid method of procurement was used.

The sealed-bid method is normally preferred by the FAR as it is often faster and requires less initial work effort. This method certainly has its advantages in some cases. However, the negotiation method has proven to be more applicable to contracting for food services.

Contracting personnel may not understand the difficulty of determining contract requirements and standards for food service when there are so many variables and uncertainties to be considered. It makes good sense to hold discussions with contractors to clarify the requirements, standards, and variables prior to award.

There have been fewer claims, disputes, and appeals from contractors when the negotiation method of contracting was used. Food service personnel may be able to influence the KO, during the development stages of the PWS and QASP, to use the negotiation method. Contracting officers must consider more than policies, procedures, and guidance cited in the FAR in selecting the appropriate contract type.

COR TRAINING

Contract administration training for the COR is the responsibility of the KO. At the time of appointment, the KO must provide the COR with requisite training. This training should include a review of the contract and duties, authority limitations, forms completion, standards of conduct, and reporting requirements.

An excellent source of initial training is the COR course. The Army Logistics Management College offers the Contracting Officer's Representative Course in resident, on-site, and via satellite and correspondence modes. All CORs and QAEs should complete this course if they are involved in contract administration.

The USAQMC&S schedules several Food Service Contract Management Workshops each year. This training provides personnel an opportunity to obtain specific instruction in administering a food service contract. The USAQMC&S also provides the COR and quality assurance training on site, at the request of the installation. You may request this training through the USAQMC&S.

COR FILES

COR files should include the letter of COR appointment, a copy of the contract, and any modifications to the contract. They should contain copies of correspondence from the contractor, all invoices received, and receipt and acceptance documents. Memorandums for record of verbal communication with the contractor and those for other actions that affect operations should be placed in the files also. Other documents which should be filed are the inspection schedule; records of inspection; records of discrepancies, to include photographs and sworn statements of witnesses; records of severe weather; and copies of reports of deficiencies to the contractor. The names of the technical and administrative assistants to the COR should be in the CORs files also.

CHAPTER 5

MANAGEMENT

GENERAL

Management is the act, manner, or practice of managing, supervising, or controlling the person who actually carries out the task. This chapter outlines the functions of managers within the TISA and dining facilities. Four functions that every manager must perform are planning, organizing, supervising, and controlling.

PLANNING PROCEDURES

Making plans involves looking at where you are and where you want to be or should be. The manager must set objectives for his operation in the categories described in this paragraph.

Routine

Routine objectives involve everyday operations. A typical routine objective for a dining facility might be to increase subsistence item accountability to a minimum of 95 percent on all sensitive or high-dollar items. Within a TISA, a typical objective is to achieve the authorized gain or loss tolerance of one-half of one percent during accountability inventories. Notice that the objective is specific, challenging, and realistic.

Problem-solving

Problem-solving objectives are geared toward solving the problems that exist in every operation. A typical problem-solving objective might read to determine the best method for eliminating the bottleneck in the self-service area. Again, it is specific. When solving problems, be sure to identify causes and try to eliminate them.

Innovative

Innovative objectives set your operation apart from any other. For each objective, make out a plan of action that includes procedures, milestones, coordination required, and other important factors. An example would be to plan special menus, such as holiday meals, ethnic meals, and super suppers. Next, increase diner interest by advertising and by publicizing the program in installation newspapers and the local community news media. Finally, promote interest among the staff by spreading information through food service publications.

ORGANIZATION

Organization involves arranging a systematic plan and developing a step-by-step process to use in managing the staff. This process is described in this paragraph.

Job Description

To organize the dining facility, or TISA, begin with a job description for each position. Military job descriptions can be developed from the detailed duties in AR 611-201. Job descriptions for DA civilians are prepared by the CPO or for contract employees by the contractor. The job description is a management tool that should be used to orient new personnel. It is an important guide in planning training activities. Also, it is the starting point for developing the job breakdowns that establish job procedures. The job description at Figure 5-1 (page 5-3) gives the job summary, performance and supervision requirements, and promotion potential. Minimum qualifications can be added where needed.

Job Breakdown

A job breakdown (Figure 5-2, page 5-4) is the analysis of a job. It lists the steps to be done and gives the key points on how to do them. There should be a job breakdown for each job in the

dining facility or TISA. Personnel should refer to job breakdowns when developing training requirements as well as during performance of the specific job.

Performance Standards

Developing performance standards is the next process in organizing a plan. For contracted facilities, performance standards are listed as part of the PWS. For DA civilian employees the standard will be developed by the FSS or the TISO. Performance standards for soldiers tell how well they must accomplish a job. The soldier training publications (soldier's manuals) have tasks and job standards for soldiers in each skill level. The standards give the sequence in which the steps in the task must be done. These standards may be used as a training tool by both workers and supervisors. They specify what soldiers must be able to do at each grade level before they are eligible for promotion to the next grade. The four basic requirements for using a standard as a training tool are listed below.

Set an attainable standard. The standard should be what a qualified worker can do in a specific time by following established procedures.

Provide training. Provide daily on-the-job training and supervision to help ensure that the individual can attain and even exceed standards. Chapter 6 of this manual details training requirements and procedures.

Inspect completed work. If the individual does a good job, tell him. If not, provide additional guidance and instruction to help the individual do a better job the next time.

Maintain the standard. Once a standard is set, do not change it because of individual performances. At times, you may have an exceptional or a poor performer who will produce more than or less than is required by the standard. However, the goal is to train qualified workers, so the standard should not be changed.

Unity of Command

Each person should report to only one supervisor on any one action. The manager who grabs the first person he sees and gives him a task violates this rule. Instead, allow the shift leader or foreman to decide who will accomplish the task.

Span of Control

The span of control is the number of people one person can effectively supervise. The ideal span of control is between 6 and 10 workers. Since a manager cannot effectively manage every person or activity personally, he must delegate authority to subordinate supervisors to act and decide on certain matters. A word of caution--while accountability can be delegated, responsibility cannot be delegated. Letting subordinates make decisions helps to develop their management skills.

Training

A critical step in developing an effective organization, is training. A manager is responsible for ensuring that each person is trained to do his job and is cross trained in other areas. Chapter 6 lists several types of training available.

SUPERVISION

When a plan has been developed and a team is organized, the next step in the management process is supervision. Supervision is also called the leadership function. While you manage assets such as materials, money, time, and personnel (as a physical asset), you must lead people. Leadership involves a very personal thing called motivation.

You cannot motivate anyone to do anything. Each person decides on his own what he will or will not do in any situation. What you do as a leader is to create the environment for self-motivation. The style of leadership used will depend on the manager's personality, the group being lead, and the situation at hand.

Most management experts feel that, in routine cases, the manager should have a high concern for the employees' welfare as well as a high concern for productivity. This can be achieved by including subordinates in decisions affecting them. The leader that is strictly authoritative and the one who is strictly a nice guy usually do not get the same level of results that are achieved by a participative leader.

A good practice is to praise your personnel on the spot for doing a good job.

Reprimands, however, should always be in private. Reprimands should always be specific, be immediate, and show concern. A reprimand should be followed, however, by an expression of confidence in the subordinate. Explain how the behavior can be corrected, and restate the performance standards expected.

The key is to concentrate on the specific behavior, not the person. A person who feels good about himself will usually produce good results. The reverse is also true.

JOB DESCRIPTION

JOB TITLE: Cook DATE:

JOB CODE: 94B10/20

I. JOB SUMMARY:
- A. Prepares meats, main dishes, soups, and gravies.
- B. Cleans and washes special equipment used in cooking.
- C. Keeps working area clean.

II. PERFORMANCE REQUIREMENTS:
- A. Responsibilities: Responsible for the preparation of meats, main dishes, soups, and gravies to be served at a stated time.
- B. Job knowledge: Knows basic principles of quantity food cookery and how to use all food service equipment.
- C. Mental application: Mentally alert, reads and understands recipes and production schedules.
- D. Dexterity and accuracy: Accurate in weighing and measuring of food ingredients and portions.
- E. Equipment used: Scales, food chopper, mixer, ovens, warmers, ranges, grills, steam cookers, steam-jacketed kettles, fryers, broilers, and meat slicers.
- F. Standards of production: Preparation of specified quantities of foods in accordance with applicable recipes.

III. SUPERVISION: Under general supervision of first cook.

IV. PROMOTION POTENTIAL:
- A. Promotion from: Rotational assignment.
- B. Promotion to: First cook (if education and ability warrant).

Figure 5-1. Sample job description

JOB TITLE: Frying eggs

EQUIPMENT AND SUPPLIES: Grill, eggs, shortening, cereal bowl, plate, and food turner

IMPORTANT STEPS	KEY POINTS
1. Take eggs out of refrigerator.	1. Remove at least one hour before serving time.
2. Turn on grill, set thermostat at 325 degrees Fahrenheit.	2. Allow time for grill to preheat.
3. Ask diner for preference.	3. Ask how the diner prefers his eggs.
4. Put melted shortening on grill.	4. Use only enough shortening to make a light film.
5. Break one egg at a time.	5. Break two eggs into a regular cereal bowl.
6. Pour eggs on grill.	6. Pour eggs gently so the yolks do not break.
7. Cook.	7. Cook until white is set.
8. Turn eggs over lightly.	8. Cook to diner's preference.
9. Remove eggs and place them on a plate.	9. Place to side of plate to leave room for other foods.
10. Scrape grill.	10. Scrape grill gently with food turner so as not to damage grill.

Figure 5-2. Sample job breakdown

ORIENTATION

All newly assigned personnel must be provided some training in the layout and operations of the dining facility or TISA. Even experienced personnel may not be skilled in all areas of your operation. Some of the more important areas are described below.

. Identify the designated supervisor.

. Discuss specific duty assignment, job standards, and promotion and training potentials.

. Discuss the work hours and work schedules. There are peak and slack times in all operations, and most employees will have to work during the peak times. Emphasize the importance of personnel reporting for duty at times specified.

WORK SCHEDULES

Effective scheduling will provide for the best use of all personnel, improve morale, lessen stress, and reduce the potential for alcohol- and drug-related problems. Work schedules are developed based on mission work load and as established by the commander.

If personnel problems develop, the work schedules should be reviewed and changed as required. Consider the following questions:

· Is the maximum staff in place when required?

· Does the schedule allow individuals to be off two consecutive days each week?

· Are leaves, passes, holidays, and scheduled field operations considered when developing the schedule?

· Have dining facility operations been consolidated on weekends if possible?

· Are all personnel given an equal opportunity to have weekends and holidays off?

· Are personnel arrival and departure times staggered so that personnel are not standing around with nothing to do?

Schedule more people to work at peak times and fewer to work at slack times. In consolidated facilities, ensure that senior personnel are placed in responsible positions as shift leaders or foremen. Or ensure they are placed in specific areas. For example, place them in the pastry area, in stock control, or in training programs. AR 30-1 provides additional guidance and sample work schedules for food service personnel.

MORALE AND MOTIVATION

An efficient program provides a well-trained and effectively managed work force. It also provides dining facilities that are sanitary and offer adequate portions of well-prepared food. A superior food service program goes a step further--it keeps diners and staff members involved and interested, builds morale, and aids unit cohesion. Each installation should have a program that recognizes superior dining facilities by establishing best dining facility awards and encourages friendly competition among dining facility managers. Promote cooperation by ensuring personnel are advised of successful innovations.

Support the incentive awards program by ensuring personnel are recognized for making suggestions that provide an improvement or save resources. This program, described in DA Pamphlet 672-5, provides guidance for giving employee cash awards for suggestions that are adopted. Cook or employee of the month programs build motivation within the staff.

The Department of the Army Philip A. Connelly Award is a very prestigious and effective program that helps promote motivation. The objectives of this program are as described below.

· To improve the professionalism of food service personnel, thus providing the best quality food service to supported soldier diners.

· To provide recognition for excellence in preparing and serving food in garrison and the field.

· To provide added incentive to competitive programs of major Army commands by adding a higher level of competition and appropriate recognition. The Connelly award to winners and runners-up in each category of competition consists of a silver bowl or plaque, presented at the annual International Food Service Executives

Association conference. Also, a special training scholarship to attend the Culinary Institute of America or Johnson and Wales College may be awarded to each winning FSS. Additional guidance is in AR 30-1.

STRESS MANAGEMENT

Stress management must also be considered as a vital responsibility of management. Causes of stress, techniques for preventing and controlling stress, and stress counseling are discussed below. Complete discussions of stress, its effects, and its management are in FM 22-9, FM 22-100, and FM 26-2. All supervisors should have, and be familiar with, each of these manuals. Stress plays a major role in most lives today, affecting decision making as well as individual actions.

Causes

Causes of stress include job frustration and pressure. Frustration may occur when an individual fails to attain a goal. Pressure may result from a fear of the consequences of failure. For example, an FSS may be ordered to serve several expensive meals each month. If he cannot serve expensive meals and also keep the required account balances, he may become frustrated. If the FSS concentrates on how failure to meet one or both of the goals may affect his career, he may feel pressure.

Prevention and Control

Stress should be prevented when possible. Leaders and managers at all levels should be involved in the prevention as well as control of stress. Each manager should ensure that persons are not exposed to stressful situations for long periods. Also, each manager should--

- Allow time for rest and personal needs.
- Keep subordinates informed.
- Provide adequate training.
- Put people in the right jobs.
- Keep personnel changes to a minimum.

Counseling

When supervisors notice symptoms of stress in subordinates, they should schedule counseling immediately. FM 22-101 describes counseling techniques that may help to resolve underlying problems. Supervisors must be trained to attack the cause of the stress, not the symptoms. If the supervisor cannot help resolve the problem, the employee should be referred through the chain of command to an agency trained in this area.

CONTROLLING FUNCTION

Controlling is the last function, but it is perhaps the most important. In planning, you looked ahead to determine where you wanted to be. In organizing, you developed a systematic process to achieve the plan. In controlling, you look at past and present activities to determine if the plan is still on target. If not, the problem affecting progress must be identified and eliminated. Again, attack the cause. Reports, headcount data, observation, inspections, and food management assistance team visits all serve as control tools for the manager. Use these tools to adjust plans as needed. New objectives may be created as a result of controlling.

PART TWO

TRAINING, ENERGY MANAGEMENT, SAFETY, SANITATION, MENUS, NUTRITION, AND EQUIPMENT REPLACEMENT

CHAPTER 6

TRAINING

Section I

Overview

GENERAL

Training is costly, but it saves the Army money through efficient daily operations. An efficient operation cannot be maintained without trained people. Therefore, training must be a continuous process. Training is a leadership responsibility from first-line supervisor to commander. TISOs, FSSs, or FAs should keep a card file or notebook to show who has been trained and the subjects covered. There are several types of food service and Class I training. Supervisors must know how to make use of all of them. Remember that trained people--

- Need less supervision.
- Develop better work habits.
- Take more pride in their work.
- Give better service.
- Waste less resources.
- Are safer workers.

WHERE TO START

The first step in training is to make sure the people doing the training have the needed skills. A good source for guidance in training is FM 25-101. Training must be performance-oriented and prepare the soldier to do a particular job. Establish objectives which tell exactly what the soldier is expected to be able to do when the training is completed.

APPRENTICE PROGRAM

Food service personnel should be encouraged to take courses in the Army apprentice program. The program gives credit that can be used for promotions. It can also be used later in civilian life. The program has been set up with the cooperation of the American Culinary Federation and the Department of Labor. The education services officer coordinates the program at the local level.

SELF-DEVELOPMENT TESTS

Each sergeant, staff sergeant, and sergeant first class must take an SDT. Active Army personnel take the test each year, and the RC personnel take the test biennially. Each SDT measures leadership, training, and MOS-specific knowledge. Scores on the test determine promotion eligibility. Each soldier is responsible for obtaining required material and preparing for the test. Soldiers should study FMs 22-100, 22-101, and 22-102 to prepare for the leadership portion. Study FM 25-101 to prepare for the training questions. Study your MOS-specific soldier's manual and technical references identified in the SDT notice to prepare for the MOS-knowledge portion.

OTHER TRAINING AIDS

Food service and Class I personnel can also take correspondence courses for individual training.

DA Pamphlet 351-20 lists available correspondence courses. Personnel should send applications for enrollment and requests for information on these courses to:

Chief
Institute for Professional Development
US Army Training Support Center
ATTN: ATIC-ETI-SS
Newport News, VA 23604-5168

Another source of training is enrolling in special food service and management-related adult education classes offered at local schools.

Section II
The Food Advisor's Role In Training

RESPONSIBILITIES

The FA is responsible for ensuring that the commander is aware of the training needs of FSOs, FSSs, cooks, and other personnel. Table 6-1 (page 6-3) details the FA's responsibilities to each of these groups. As the commander's chief advisor on food service, the FA ensures he is aware of training needs. The FA must assess the adequacy of the current training program and recommend additions to and deletions from training plans. The FA should also recommend personnel for formal training at service schools. Enlisted personnel must obtain specified training at different levels throughout their career to be eligible for promotion. The following training is essential for all enlisted personnel as they progress in their career:

- Basic training upon entry
- Advanced individual training
- Pimary leadership development course
- Basic noncommissioned officer's course
- Advanced noncommissioned officer's course
- Sergeants major academy

Additionally, soldiers may attend courses such as the Food Service Management Course or the First Sergeant's Course.

RESOURCES

Resources include both people and publications. The unit's NCOs are among its most valuable training sources. They must train their subordinates. Table 6-2 (page 6-3) lists resources that can be used in food service training. Supervisors must be familiar with trainer's guides and use leader books. They must also ensure that soldiers have access to soldier training publications and know what formal training is available and how to get it.

ACCOUNTING

The FA is responsible for training FSOs in accounting. He also reviews the dining facility accounts to determine the solvency of the accounts. This manual describes accounting procedures in peacetime. Accounting in a theater of operations is covered in AR 30-21 and FM 10-23. Accounting in a contractor-operated facility is the contractor's responsibility.

SUBSISTENCE SUPPLY

The TISA is responsible for acquiring, storing, issuing, selling, and accounting for subsistence on an installation. The IFA coordinates

subsistence supply plans and operations between commanders and staff officers and the TISO. AR 30-18 governs conduct of business at a TISA. This manual contains simplified explanations of the procedures in AR 30-18. The FA advises and assists the TISO in the areas of dining facility requirements, distribution control, and accounting.

Table 6-1. The food advisor's training responsibilities

GROUP	RESPONSIBILITIES
Food Service Officers	Take a direct role in training food service officers. Ensure that you stress the basics of food service operations and the FSO's responsibilities as detailed in AR 30-1. Teach methods to audit records and identify causes of discrepancies.
Food Service Sergeants	Be aware of the formal training requirements which are a part of the career pattern for MOS 94B. Make sure that your NCOs get the training they need. You should inform soldiers of changes in doctrine and regulatory guidance, new publications, and new equipment. Ensure that NCOs are taught how to train their subordinates. Insist that they use and record each of their soldier's progress in a leader book.
Cooks	First-line supervisors are responsible for the training of those they supervise. You should monitor this training to ensure the needs of the soldiers are met. Work with NCO supervisors and commanders to ensure that cooks get to participate in common skills training provided to other unit personnel. Soldiers that have problems with reading math skills should be enrolled in remedial programs through the local education center. You should make on-the-spot corrections if you observe improper practices at the job site. Review OJT programs to ensure that training is being scheduled in advance.

Table 6-2. Training resources

SUBJECT	SOURCES OF ADVICE OR ASSISTANCE	RESOURCE PUBLICATIONS
Food Preparation	Food service NCOs Management Assistance Teams	FM 10-23-2 TM 10-412
Sanitation	Preventive Medicine or Veterinary Service (PVNTMED) or Installation Medical Activity (IMA)	FM 8-34 FM 10-23-2 MIL-STD-HBK 740 TB MED 530
Nutrition and Weight Control	Local dietitian and US Army Quartermaster Center and School	AR 30-1 AR 40-25 AR 600-9 DA PAM 350-18 FM 10-23-2 SB 10-264 SB 10-263 SB 10-260

Table 6-2. Training resources (continued)

SUBJECT	SOURCES OF ADVICE OR ASSISTANCE	RESOURCE PUBLICATIONS
Dining Facility Accounting	US Army Quartermaster Center and School	AR 30-1 FM 10-23-2
Equipment	DEH and supporting maintenance battalion	AR 310-34 AR 420-55 CTA 50-909 FM 10-23-2 TB 43-0002-22 TB 43-0002-23 Army technical manuals Manufacturer's operation manuals
Safety	Safety officer	AR 385-10 AR 385-40 AR 420-90 FM 10-23-2
Subsistence Supply	Senior subsistence supply specialists, TISO, and Defense Personnel Support Center	AR 30-1 AR 30-18 FM 10-23 FM 10-23-2 SB 10-260 SB 10-260-1 SB 10-263 SB 10-495 *Food Supply News*
Storage	Senior subsistence supply specialists, TISO, and veterinarian	AR 40-657 DOD 4145.19-R-1 MIL-STD 668E FM 10-23 FM 10-23-2
Energy Conservation	DEH	AR 11-27 *Army Food Service Energy Management Program Manual*
Contract Operations	Contracting officer, contracting officer's representative, staff judge advocate, and US Army Quartermaster Center and School	DA Prototype Performance Work Statement, Contract, COR letter of appointment
Supervising DA Civilians	CPO	*Manager's Handbook*
Training	G3, S3, and Directorate of Plans, Training, and Security (DPTSEC)	FM 10-23 FM 10-23-2 FM 25-101

Section III
OJT Concept

USE

Commanders are responsible for training, but the FSS or Class I NCOIC is responsible for planning, directing, conducting, and supervising the training program. In OJT, workers are trained during working hours. OJT is used most often to teach newly assigned workers how to do a specific job. It can also be used to train an experienced worker in a new technique or position. OJT is necessary for soldiers starting a new job, no matter what their previous jobs have been.

ADVANTAGES AND DISADVANTAGES

The main advantage of OJT is that the trainees work while they are learning. They give immediate feedback of what they learn and get immediate feedback of the results. They are being taught by the same people with whom they will be working. Therefore, they learn a specific job according to set standards. There are some disadvantages in OJT. Often there is either too much or too little supervision. If the trainer is not qualified the student may be taught bad habits and work methods. If there are no uniform standards of instruction, trainees may feel frustrated because they have to learn too much too quickly. At times, their work may be unfairly compared with that of the more experienced workers, or the trainer may not have the ability, time, or patience to teach.

PROCEDURES

Before OJT can begin, each part of the job must be broken down so that it can be presented logically. The trainee then follows a schedule that covers the necessary training. Figure 6-1 (page 6-5) outlines four steps for training personnel. When setting up an OJT program, remember that some workers will need more training than others. If they are singled out, it may lower their self-confidence. The worker who learns quickly may have a smug attitude. These attitudes can affect the morale of the entire staff. The best way to avoid either of these problems is to call the training program a refresher course. Then, the trainer can spend more time helping those who need it.

ROTATIONAL ASSIGNMENTS

Along with OJT, give soldiers rotational assignments and cross training in the dining facility or Class I operation. In this way, workers will receive training in more than one area.

1. PREPARE THE STUDENT
   - Put the soldier at ease.
   - Demonstrate the task. If the task is to operate equipment, show the soldier where to stand and where to put the utensils and ingredients so that they can be reached easily. Discuss operational features and safety concerns.
2. PRESENT THE OPERATION.
   - Demonstrate the job step by step.
   - Be patient and be thorough so that you miss no details.
   - Go slowly enough for the soldier to follow the demonstration.
   - Ask questions to make sure the soldier understands the operation.
   - Review frequently to make sure the pace is not too fast.

Figure 6-1. Sample outline for training personnel

3. HAVE THE STUDENT TRY THE OPERATION.
   - Ask the soldier to demonstrate the operation and to explain each step.
   - Ask questions about what, how, and why a step is done. These questions reinforce the learning process.
   - Correct errors with tact.

4. FOLLOW UP THE TRAINING.
   - Let the soldier function independently.
   - Tell the soldier to come to the trainer for help or for materials.
   - Give further instruction if necessary.

Figure 6-1. Sample outline for training personnel (continued)

Section IV
Program Content

BASIC KNOWLEDGE

Before a training schedule can be developed, you must decide what your workers must know. They must be able to practice safety precautions, sanitation, and personal hygiene. They must also know how to use weights and measurements and how to use and care for equipment. Refer to the job description, the detailed tasks from the job breakdown, and applicable technical manuals, textbooks, and training aids for help in developing a training program. Training in a contractor-operated facility is solely the responsibility of the contractor.

TRAINING PROGRAM

After you analyze the jobs in your activity, you will be ready to put together the training program. It should cover all of the areas in which workers must be trained. Appendix A, Table A-1 lists subjects that should be included in a food service OJT program. You can use Tables B-1 through B-7 in Appendix B to develop training plans for . specific areas of food preparation.

Section V
Training Schedules

SELECTION OF PERSONNEL

You must select both the people to be trained and those to do the training. Remember that subsistence issues or dining facility operations cannot stop during the training period.

Trainees

During your first interview with a soldier, find out what he knows. Also, you can check his personnel records, watch him as he works, and judge the products he prepares to determine what he knows. Compare what he knows to what you expect him to know. Then determine what he needs to be taught. Consider how long a soldier can be expected to stay in his present position, his main duty, how much training he needs, and how much education and experience are required for the level of instruction.

Trainers

You may conduct the OJT, or you can have a member of your staff do it. If your staff does the training, you must be sure that the trainer is skilled in teaching and work methods. Just because someone can do a job well does not mean he can teach someone else to do it well.

SCHEDULE DEVELOPMENT

Many factors influence the development of straining schedule. Some of them are discussed below.

Training Time

This is one of the most critical factors in the development of a training schedule. You must consider the extent and depth of training needed. Allow time for the soldier to gain a workable knowledge of the procedures, methods, and techniques of the subject to be trained. The soldier must learn to identify common errors and shortcomings and how to avoid or correct them. Schedule the training so that it will not interfere with your work load. If it takes 48 hours to train in a subject, consider scheduling training during a three-week period, four hours a day, on 12 days.

Unit Requirements

Consider the unit's mission as well as requirements for training, other duties, and days off. Coordinate with unit commanders and personnel officers before you schedule training.

Facilities and Materials

If a classroom is needed, make sure one is available. Make sure there is a lesson plan for each block of instruction. The lesson plan can be informal notes or as detailed as the formal lesson plan shown in Appendix D of this manual. Use training aids and handouts, and make sure any equipment you need will be available.

Leader Books

Keep training records and reports brief and simple. The leader book contained in FM 25-101 is the best place to keep training records. It lists administrative data, common tasks, skill qualification assessment, and specific collective tasks which support the unit's Mission-Essential Task List. The NCO supervisor can record the soldier's ability to perform tasks in the leader book and can plan training time. Appendix A, Table A-2 provides a sample format that supervisors can use to record the progress of personnel at the 94B10 level. This same format can be adapted for other skill levels. Each supervisor should keep a leader book for his soldiers.

Supervisory Responsibilities

If you delegate training responsibility to another trainer, be sure to coordinate the training methods, program, and schedule with that person. Also, review the training outline with the trainer. The trainer can determine the time, methods of instruction, review, and corrective actions. Be available to help the trainer. Make sure the trainer follows the training plans, policies, and procedures for the course. Also check each soldier's progress, and make sure everyone follows current safety and sanitation procedures.

Section VI
Conduct Of Training

APPROACH TO INSTRUCTION

The objective of all training should be to have a staff that works as a team to meet the mission of the activity. If the training program is to be successful, the soldier must want to learn. Good leadership, sound instructional methods, and effective communication help to motivate the soldier. You must constantly supervise the training to make sure it does not become so routine that the soldier loses interest.

SUGGESTIONS TO TRAINERS

The role of the trainer is critical. The trainer influences the students' attitude and acceptance of the subject being taught. Below are some suggestions for trainers to follow.

Win the Respect of the Soldier

Be tactful, loyal, and enthusiastic. This will win the respect of the staff and of the soldier.

Know Your Subject

Be knowledgeable in your subject so that you can teach it to others. Teach only relevant material. If you have training aids and films, use them to stress points.

Be Considerate

Be sure that your personal interest and enthusiasm do not cause you to make the training too intense. If you do, the soldiers may become tired, bored, and discouraged.

Use a Positive Approach

At the start of the training program, stress to the soldier the need for a positive approach and an optimistic attitude. Place him in situations where problems are not likely to occur. Assign him tasks that can be done with little chance of error.

Be Professional

Talk directly to the soldier. Do not use condescending speech or actions. Check each trainee for cleanliness, appearance, and state of health.

Develop the Confidence of the Soldier

To make sure that the soldier is not confused by too many details, split tasks among the soldiers. Then, after the soldiers can perform small portions of a task successfully, assign them complete tasks.

Evaluate Yourself

Always strive to become a more effective teacher. Frequent and objective self-evaluations are good ways to measure how good a teacher you are. Try to put yourself in the soldier's place; it will help you see how good your teaching is.

Section VII
Evaluation And Follow-Up

SOLDIER EVALUATION

When developing the training program, include performance standards and develop procedures by which you can evaluate the soldier's progress. Figures 6-2 (page 6-9) and 6-3 (page 6-10) are progress charts that trainers can use to record the soldier's progress. These charts could be used to develop your leader book. They will help the trainer monitor the trainee's progress in job skills, attitude, and ability to follow rules and regulations.

PROGRESS CHART, OJT, MOS 94B

SUBJECT	NAME: _____ Date Completed	NAME: _____ Date Completed
Orientation procedures, terms, recipes		
Dining facility accounting		
Food conservation		
Sanitation		
Beverages		
Breakfast foods		
Soups, sauces, gravies		
Progressive vegetable cooking		
Pasta products		
Meats		
Poultry and seafoods		
Salad and salad dressings		
Desserts, other than pastries		
Sandwiches and box lunches		
Variety cakes		
Variety pies		
Soft rolls and quick breads		
Sweet doughs and cookies		
Cold suppers		
Garnishes		

Figure 6-2. Sample cooking skills progress chart

NAME OF SOLDIER: _____

	EXCELLENT	GOOD	FAIR	UNSATISFACTORY
JOB SKILLS - Consider the job performance and skills. Does the soldier--				
Keep up with work?				
Keep the work station clean?				
Make all products uniformly?				
Conserve food?				
Follow instructions and recipes?				
COOPERATION - Consider attitude. Does the soldier--				
Help coworkers?				
Have a spirit of willingness?				
Receive changes and new ideas well?				
Accept suggestions?				
SANITATION - Consider health regulations. Does the soldier--				
Abide by no smoking rules?				
Wash hands before leaving restrooms?				
Keep paper, trash, liquids, and other materials off floor?				
Keep hot foods hot and cold food cold?				
CARE OF EQUIPMENT - Does the soldier--				
Keep equipment clean?				
Return everything to its proper place?				
Know how to operate equipment correctly?				
SAFETY - Does the soldier--				
Work safely?				
Correct or report all hazards that may cause an accident?				
Know where the fire extinguishers are and how to use them?				
APPEARANCE - Consider personal cleanliness and neatness. Does the soldier--				
Keep body clean?				
Keep clothes clean?				
ATTENDANCE - Consider daily attendance and promptness. Does the soldier--				
Return from breaks promptly?				
Return from meal periods on time?				

Rate: EXCELLENT, GOOD, FAIR, or UNSATISFACTORY.

Check progress: Weekly for one month or as often as necessary.

Figure 6-3. Sample general skills progress chart

FOLLOW-UP

When planning OJT, plan to follow up on its effectiveness. If you are the trainer, you should do the follow-up. Stress the important points that were discussed in the OJT sessions. Remember, not all problems are the fault of the program. Ways to follow up on OJT are discussed below.

Methods

Two methods of following up on training are to interview the soldier and to observe the soldier at his work site. If you choose to observe the trainee at his work site, check to see if he is using the skills he learned in OJT.

Refresher Training

If you feel the soldier needs more training sessions, do not use the same methods and materials you used in previous training. Instead, plan new methods and use new materials, such as handouts and task summaries, to train the basic job skills.

Review

Review the overall OJT program. Establish good communications with your soldiers, and discuss any problems they may have. Make sure your trainers are effective.

Section VIII
Related Areas Of Training

SAFETY TRAINING

The FA should work with the installation safety officer and the FSSs to ensure that a safety program is established. The safety officer keeps records of accidents and can inform you if there have been many accidents in your facilities. Do not wait for accidents to happen.

Classes in safety must be a regular part of your training program. FSSs must teach their personnel how to work safely.

Your training program must stress safety rules; the need for safe use, care, and maintenance of equipment; and what to do in case of an accident. Also, it must stress common causes of accidents and accident prevention. Experienced personnel need refresher training. Use posters, slides, demonstrations, and motion pictures available from the National Safety Council, local health departments, the American Red Cross, and the Civil Defense Agency.

Fire prevention within dining facilities is a critical concern for supervisors.

SANITATION

Proper food service sanitation is the most important aspect of a food service operation. All food service personnel must realize their responsibilities for the health and well-being of the people for whom they prepare food. Improper sanitation can result in illness outbreaks and loss of facility credibility. The FA must advise commanders, FSOs, and FSSS on sanitation. He should also make sure that food handlers and managers are

trained to know the causes of food-borne illness so that they can take steps to eliminate them. Standards for the proper storage and handling of food are in this manual, TB MED 530, TM 10-412, and FM 8-34.

All food service personnel must be trained in sanitation. The preventive medicine service is responsible for establishing a formal training program for the certification of food service supervisors.

A formal course of study through or equivalent to the Educational Foundation of the National Restaurant Association course in Applied Food Service Sanitation is recommended. When supervisors are trained, they can train their subordinates.

This manual and TB MED 530 provide sanitation procedures to be followed in the storage, issue, preparation, and serving of food. Use this information when establishing your sanitation training program.

Ensure that training is documented. Inspectors from the IMA will request to see sanitation training records to ensure compliance with sanitation standards.

Sanitation training in contractor-operated facilities (FFS, DFA) is the responsibility of the contractor. The terms and conditions of the contract take precedence over any Army regulation. In M&FP-contracted dining facilities the military KP supervisor must instruct trainees in sanitation procedures. The IFA must have a program to train personnel who are going to perform KP supervisor duties. The contractor does not supervise military KPs and is not responsible for their training or performance.

Teach soldiers how to wash and sanitize all equipment, containers, and utensils. Stress to the soldier the need to follow the manufacturer's instructions on the operation and care of each piece of equipment. All trainers must be trained in the use of equipment before they can operate or clean it.

Spoiled or contaminated food can cause illness. The Public Health Service has reported that about 40 percent of the communicable diseases are associated with the improper handling of food or poor personal habits of food service personnel. Food should be handled only by healthy individuals. Workers must know correct temperatures for food storage. You must also train your personnel of the dangers of cross contamination of foods and how to avoid them.

Stress the importance of personal hygiene and sanitation to your soldiers. Remind your more experienced workers of this, also. Ensure that all employees wash their hands before leaving restrooms, after smoking, or after handling items with potential for transferring contamination to other foods.

NUTRITION TRAINING

Installation training programs must be provided to assist food service personnel in implementing nutrition standards. The program should cover basic nutrition, food preparation, serving techniques, nutrition standards, and implementation procedures. Also, it should include discussions at menu board meetings and a diner education program according to AR 40-25. The role of food service personnel in meeting nutrition requirements should be stressed in the program. The installation dietitian may advise you on nutrition training. Table 6-3 (page 6-13) outlines a sample guide for nutrition training. Table 10-1 (page 10-3) may be used as a handout to present information on the four basic food groups. Instruct your personnel on the use of table tents and nutrition posters to inform diners of nutritional information and choices.

Table 6-3. Guide for nutrition training

SUBJECT	SCOPE
Nutrition principles	Four basic food groups Dietary guidelines Food fads
Menu planning	Master Menu Menu modifications
Preparation and serving techniques	Recipe compliance Nutrient retention Calorie control
Storage techniques	Nutrient retention

Section IX
Assistance Teams

FOOD MANAGEMENT ASSISTANCE TEAMS

The USAQMC&S is responsible for providing TISA and food management assistance teams to DA commands, installations, and Reserve components. The teams provide help on both a scheduled and requested basis. ARs 30-1 and 30-18 explain how to request an assistance team visit. The goals of the teams are to improve the quality of support given the soldier, improve economy, and increase effectiveness. The members of the Management Assistance Teams will help units or installations with training. Also, they may suggest training that you did not know was needed.

TRANSITION ASSISTANCE TEAMS

The USAQMC&S provides transition assistance teams. The teams help installation commanders to open and operate new or modernized dining facilities. They explain the design rationale and concept of operation. They help train TISA or food service personnel to use new types of equipment. USAQMC&S schedules the visits based on projected completion dates of new or modernized facilities. Additional visits and visits OCONUS may be requested by the installation commander.

TRAINING ASSISTANCE TEAMS

TRADOC provides training assistance teams upon request. These teams help establish command or installation food service training programs for government personnel. Also, they conduct refresher training courses, including courses on sanitation for supervisory food service personnel. To schedule a visit from a training assistance team, submit a request as described in AR 30-1.

PREACCEPTANCE ASSISTANCE TEAMS

The USAQMC&S provides preacceptance assistance teams. The teams help installation

commanders identify facility and equipment discrepancies and assist in resolving problems prior to the DEH and user acceptance of new or modernized dining facilities or TISAs. They also review facility layout, design, and equipment to determine if it meets construction standards and military specifications, rationale, and concept of operation. USAQMC&S schedules the visits based on projected completion dates of new or modernized facilities.

CHAPTER 7

ENERGY MANAGEMENT

GENERAL

Effective energy conservation programs are required to combat inflation and to retain a production capability that will ensure our standard of living. The cost of energy continues to rise, consuming an increasingly higher percentage of operating funds. We can expect these costs to continue to increase in the future. Without effective conservation programs, we cannot control costs and the resultant shortages of fuel and power will adversely affect mission accomplishment.

RESPONSIBILITIES

The TISO, FSS, or contract manager is responsible for implementing a conservation program at the activity level. To assure success, interest in the operation must be evident at all levels of command. Also, the TISO or FSS must have active support and guidance from the installation commander's office, to include the DOL, DEH, and the FA. Command emphasis, incentives, awards, and recognition are vital to the success and effectiveness of the program.

ACTION PLAN

To effectively manage an energy program, an action plan needs to be developed. The action plan should include the subjects below.

Program Introduction

A meeting should be scheduled with the organization or unit commander and the activities first line supervisors. Use this meeting to form a team to carry out the program and inform key personnel of the importance of energy management. Review the Army Food Service Energy Management Program Manual (AFSEM), 1 August 1991, and the locally established installation energy plan.

Conduct Equipment Maintenance Audit

Conduct an evaluation of the TISA or dining facility equipment with a DEH representative to make sure that the equipment is operating efficiently. Correct deficiencies noted, and replace equipment that is not economically reparable. Energy consumption is higher when equipment is not functioning properly.

Track Equipment Usage

Track usage of equipment for one workweek to establish an energy usage pattern. The AFSEM provides forms and details on the method to establish the data base. Compare all future tracking efforts to this base to determine the rise and fall of energy used in the dining facility.

Conduct the Kickoff Meeting

Meet with all TISA or food service personnel to introduce the program. Explain how the program is important to the Army's overall energy management efforts and how it will change operating methods and schedules to decrease energy consumption.

Establish an Energy Schedule

Establish an energy schedule for each piece of equipment. Use the on and off times recorded during the initial tracking period as a guide. Record usage time on decals displayed on equipment. The guidance and suggestions in Figure 7-1 (page 7-2) will help you carry out the action plan.

1. Preheat only the equipment that will be used.
2. Preheat equipment just before using.
3. Reduce temperature or turn equipment off during slack serving periods.
4. Use full production capacity when possible or practical.
5. Select the correct size of equipment for cooking.
6. Use equipment properly.
7. Maintain equipment in good repair.
8. Keep equipment clean.
9. Make sure door gaskets on refrigeration units are clean and fit airtight.
10. Place refrigerated and frozen foods (perishables) into refrigerators or freezers immediately upon arrival.
11. Do not place hot foods in the refrigerator or freezer.
12. Do not hold refrigeration doors open for long periods of time.
13. Keep evaporator coils free of excess frost.
14. Keep condenser coils free from dust or lint.
15. Operate ventilation equipment only when required; operate on low speed if possible, and keep filters clean.
16. Use doorway closures on all walk-in refrigerators.

Figure 7-1. Guidance and action plan suggestions

Tracking and Follow-up

Track energy use until the energy reduction goal of 15 percent of base is achieved. After the goal is achieved, continue to track usage to ensure energy savings are maintained. Post a weekly summary of equipment usage to encourage energy awareness. Discuss the program at daily cook's and employee's meetings.

BLACKOUTS, BROWNOUTS, AND GAS SHORTAGES

A very important part of energy management that must not be overlooked is what to do during electrical blackouts, brownouts, gas shortages, or complete power failures. Only when personnel are properly prepared will the facility continue to operate smoothly during such an emergency.

Blackouts

Maintain a stock of flashlights and batteries. These will be needed to find articles in walk-ins and storerooms where emergency lighting is not available. Keep candles (with holders) on hand to light kitchen and dining and service areas.

During a power failure, keep freezers and refrigerators closed as much as possible.

Keep disposable dishes and utensils on hand.

Plan to keep sterno on hand so that if hot food can be prepared, it can be kept warm.

Decide what will be served as quickly as possible.

Brownouts and Gas Shortages

These are situations in which power supplies are curtailed slightly or sharply but not cut completely.

You will need to decrease menu selections. The fewer items you prepare, the less energy you will use.

Serve stews and soups. These can be prepared in one pot and contain a complete meal.

Use as many canned items as practical. Normally, they are precooked and require limited heating time.

If you serve potatoes, use instant or dehydrated.

For dessert, use fruit.

MENU SUGGESTIONS (RESTRICTED ENERGY)

Curtailed preparation and cooking capabilities could mean less varied entree selections. To compensate for this, use as many authorized canned

and precooked convenience items as possible. Use such canned items as beef with barbecue sauce, chili con came, ravioli with meat sauce, roast beef hash, and corned beef hash. When possible, use canned B Ration items rather than A Ration items. Some items such as cold meat trays, salads, cheeses, fruits, and snacks require minimal energy output.

Cold Meat Trays

Prepare appetizing cold meat trays using sliced canned ham, cooked boneless turkey, salami, pickle and pimento loaf, bologna, and pastrami.

Salads and Cheeses

Tasty and nutritious salads can be made using an assortment of cheeses such as American processed, natural cheddar, natural or processed Swiss, and natural smoked provolone. The cheese can be sliced, cubed, or served in strips. In addition, cream cheese and cottage cheese will add texture, contrast, and extra protein to your menu.

Vegetables

Round out the menu by adding items that are routinely on hand such as marinated canned vegetables; canned beets, asparagus, beans, and carrots; potato or corn chips; canned fruit; fresh fruit; hard-boiled eggs (if they can be cooked); and pickles and relishes.

Soups

You might use such dehydrated soups as tomato-vegetable with noodles, dehydrated onion, dehydrated beef-flavored with noodles and vegetables, or dehydrated chicken-flavored with noodles. Instant soup and gravy bases, such as chicken, beef, and ham-flavored are nutritious, and require little energy to prepare.

Beverages

Beverages to compliment the meals are tea or instant coffee (if water can be boiled); milk (from a gravity flow milk dispenser); beverage bases; and instant orange and grapefruit juices. Various juices provide many essential nutrients when menu selections are temporarily limited.

ENERGY PLAN EVALUATION

Energy management depends on the involvement of everyone in the TISA or dining facility. A team effort is required. The FA also plays a key role in energy management. During visits he may point out ways in which energy might be saved. Energy conservation measures involving the modification, repair, or replacement of equipment and those involving the maintenance of facilities must be coordinated with the engineers. Make energy efficiency atop priority consideration when planning TISA or dining facility construction or renovation projects and in scheduling equipment replacement.

CHAPTER 8

SAFETY AND FIRE PREVENTION

GENERAL

Accidents can occur in many ways in a workplace unless personnel are properly trained in fire and accident prevention and practice safety at all times. Teach personnel to *THINK SAFETY* by using OJT and visual aids.

THE FOOD ADVISOR'S ROLE IN SAFETY

The FA and TISO must work with the installation Safety Officer to ensure that a viable safety program is maintained. Accidents must be reported to the Safety Officer as described in AR 385-40. The safety office maintains records of accidents and can provide information on recurring accidents. The FA should keep track of trends or accident types and make necessary changes to operations or training to reduce injuries or damage to equipment. Do not wait for accidents to happen before you initiate action. Make on-the-spot corrections if you observe unsafe conditions or acts. Safety and fire prevention training in contractor-operated facilities is the responsibility of the contractor.

DINING FACILITY SAFETY

The FSS must ensure that safety is included in all training and in the day-to-day operation of his facility. Accidents will occur even when personnel are well-trained in how to prevent them. Food service personnel should know what to do when accidents happen. The FSS must include an SOP on first aid and fire fighting in the dining facility safety program. Some commonsense rules for safety are described below.

Storerooms

DO NOT STORE CHEMICALS IN FOOD STORAGE AREAS OR NEAR FOOD. Store containers by contents, size, and type. Use sturdy shelves, and place heavy or larger items such as cases, large bags, or number 10 cans on lower shelves. Have shelving low enough so that personnel can easily see the contents. Make sure personnel--

- Use a well-braced ladder to reach items on high shelves.
- Keep the aisles clear and the floor clean and dry.
- Get a firm grip on containers before lifting.
- Bend your knees, keep your back straight, and use thigh and shoulder muscles for lifting.
- Keep the load close to your body, walk normally, and ease the load to a resting place.
- Make sure personnel can see where they are going. BE ALERT.
- Get help if needed.
- CO_2 containers must be secured with a chain in an upright position to preclude damage to the dispensing head and possible injury to personnel.

Cooking and Serving Areas

Burns, bumps, and falls often happen in the cooking and serving areas. Make sure personnel --

- Turn the handles of pots and pans so that they point to the back or side of the range.
- Close oven doors when not inserting or removing pans.
- Use pot-handling pads for hot items.
- Keep the floors under, around, and behind appliances clean.
- Clean up spills at once.
- Clean grease filters frequently.
- Give a warning when passing servers.
- Change steam table inserts carefully.
- Do not rush when carrying hot pans of food.
- Do not spill grease on open flames.

Knives

Knives are probably the most dangerous items personnel use. Constantly stress knife safety during OJT. When personnel know which knife to use and how to use and care for it, there will be fewer accidents. Some safety rules to follow when using knives are--

- Make sure knives are kept sharpened. Use proper sharpening procedures, as shown in Figure 16-3 (page 16-9) in this manual.
- Use a cutting board and not the palm of the hand.
- Cut away from the body.
- Do not try to catch a falling knife.
- Do not use knives to open cans, to punch holes in cans, or to pry off lids.
- Be very careful when carrying a knife. Always carry knives at your side next to your leg.
- Wash knives separately from other utensils.
- Wash and store knives *IMMEDIATELY* after use.
- Store knives in a metal or plastic slotted rack.

Other Equipment

NEVER let personnel use equipment until they are trained to operate it. ALWAYS follow the manufacturer's operating, safety, and maintenance instructions. If equipment is not working correctly, have the engineers check it--do not tinker. Table 8-1 (page 8-2) lists hazards associated with different sources of energy and some safety precautions.

Cleaning Products

Cleaning products can be very dangerous substances when not used correctly. Many cleaning products are also hazardous chemicals. You should--

- Ensure personnel read labels and follow all instructions before using.
- Ensure personnel do not mix cleaning products.
- Ensure personnel are trained.
- Ensure that all personnel use appropriate protective clothing and equipment provided for their protection.

SAFETY IN CLASS I OPERATIONS

Accidents cost money through the loss of manhours and damage to or destruction of food and equipment. The resulting loss of personnel, subsistence, and equipment could prevent Class I supplies from being issued to supported units in a timely manner. Detailed information on safety is in DOD 4145. 19-R-1. The FSS should use the checklist in Table 8-2 (pages 8-3 through 8-6) to evaluate the dining facility for possible safety hazards. Table 8-3 (pages 8-6 and 8-7) provides general rules that should be included in the safety program.

Table 8-1. Sources of energy, their dangers, and safety precautions

SOURCE	DANGER	PRECAUTIONS
Gas	Explosion, Fire, Burns, Toxic Fumes	Do not put flammable material near flame. Air the room before you light the pilot.
Steam	Burns, Explosion	Make sure gauges are working. Open doors or lids as instructed.
Electricity	Shock	Do not handle electrical equipment with wet hands. Keep grease and water out of wiring. Unplug equipment before you clean it. Do not stand on a wet floor when you operate equipment.

Table 8-2. Accident prevention checklist

Stairs, Ramps, and Ladders	☐ Are stairs and slopes clearly marked and illuminated? ☐ Do stairs have abrasive surfaces to prevent slipping and falling? ☐ Are handrails on open sides of stairways provided? ☐ Are center handrails provided for wide stairs? ☐ Are stairways kept unobstructed? ☐ Is there a 7-foot clearance over each step? ☐ Are the slopes of ramps set to provide maximum safety--not too steep? ☐ Are ladders maintained in good condition and inspected frequently? ☐ Do ladders have nonslip bases?
Ventilation	☐ Is the ventilation adequate in receiving, storage, pot and pan and dishwashing areas, and in walk-in coolers and freezers? ☐ Are vent filters and fresh-air intakes provided in food-preparation, serving, and dining areas? ☐ Are all fans and their moving parts shielded or guarded? ☐ Is gas equipment properly vented?
Electrical Equipment	☐ Are ground fault circuit interrupters installed near sinks and work areas? ☐ Is electrical equipment properly grounded, wired, and fused? ☐ Is electrical equipment of approved type and installed properly? ☐ Does electrical equipment meet the National Electrical Code specifications or local ordinances and bear the seal of the Underwriter's Laboratories? ☐ Are regular inspections of equipment and wiring made by an electrician? ☐ Are electrical switches readily accessible in emergencies? ☐ Are switches located so that employees do not have to lean on or against metal when reaching for them? ☐ Are cords maintained without splices, cracks, or worn areas? ☐ Is wiring kept off surfaces subject to vibration, off floors, and out from under equipment? ☐ Is electrical equipment protected against the entrance of water? ☐ Are weatherproofed cords and plugs provided for outdoor equipment? ☐ Are wet floors and areas subject to flooding avoided for placement of electrical equipment? ☐ Are protective pads or platforms provided for people who use or vend from machines to stand on? ☐ Are service cords long enough to eliminate the need for extension cords? Is the kitchen equipped with retracting reel cords from the ceiling? ☐ Are all switches, junction boxes, and outlets covered? ☐ Does all equipment with cord-and-plug connections have grounded connections?
Lighting	☐ Is lighting adequate in all areas? ☐ Are light fixtures, bulbs, and tubes protected with protective shields or shatterproof? ☐ Is proper heat-proof lighting provided over cooking areas, in vent hoods, and so on?

Table 8-2. Accident prevention checklist (continued)

Hot Water Heating	☐ Are safety devices, such as temperature and pressure relief valves or energy cutoffs, provided to prevent explosion of pressurized water heating systems? ☐ Do safety valves meet the standards of the American Standards Association or the American Society of Mechanical Engineers? ☐ Is hot water temperature properly controlled in lavatories and sinks, and are mixing faucets provided to prevent scalding?
Employee Practices	☐ Are all employees aware of hazards existing in their work areas? ☐ Are employees properly instructed on placement of hands to avoid injury when handing potentially hazardous devices such as slicers? ☐ Do employees make use of all guards, hot pads, railings, and other protective devices available to them? ☐ Do employees wear proper shoes which are nonskid and will protect feet from injury? ☐ Do employees wear clothing that cannot get caught in mixers, cutters, grinders, fans, or other equipment? ☐ Is at least one employee on each shift trained in emergency first aid techniques? ☐ Is care exercised when using plastic aprons or gloves near open flames or extreme heat?
Fire Prevention Equipment	☐ Are fire extinguishers conveniently located where fires are most likely to occur? ☐ Are extinguishers the proper type and size to control a fire? ☐ Have employees been instructed in the effective use of extinguishers and automatic washdown systems? ☐ Are extinguishers in plain sight? ☐ Are extinguishers kept fully charged and inspected weekly for damage? ☐ Are sprinklers or automatic alarms installed if required? ☐ Does all fire prevention equipment comply with local fire prevention agency requirements?
Floors	☐ Are all floors in safe condition--free from broken tile and defective floorboards, worn areas, and items that may cause people to trip or fall? ☐ Are spills and debris removed from the floor immediately? ☐ Where floors are frequently wet, are heavy traffic areas provided with nonskid mats? ☐ Are floors mopped adequately and provided with a protective or nonskid finish to prevent slipping? ☐ Are adequate floor drains provided and properly covered with gratings? ☐ Are carpets securely tacked or otherwise fastened in place to prevent people from tripping over raised edges?
Serving Area and Dining Room	☐ Are serving counters and tables free of broken parts, wooden or metal slivers, and sharp edges or corners? ☐ Is all tableware regularly inspected for chips, cracks, or flaws? Are defective pieces discarded in a safe manner?

Table 8-2. Accident prevention checklist (continued)

Serving Area and Dining Room ***(continued)***	☐ Is the traffic flow coordinated to prevent collisions while people are carrying trays or obtaining food? ☐ Are pictures and wall decorations securely fastened to walls? ☐ Are ceiling fixtures firmly attached and in good repair?
Doors and Exits	☐ Are sidewalks and entrance and exit steps kept clean and in good repair? ☐ Will all exits open from the inside without keys to allow escape from the building? ☐ Can an exit be reached from every point in the building without having to pass through an area of high potential hazard? ☐ Are routes to exits and the exits themselves clearly marked? ☐ Are passages to exits kept free of equipment and materials? ☐ Are all exits outward opening? ☐ Are doors hung so they do not open into passageways where they could cause accidents? ☐ Are doors installed between kitchen and dining areas? ☐ Are exits properly marked (signs)? ☐ Do electrical exit signs operate properly?
Receiving Area	☐ Are employees instructed in correct opening, lifting, and storing methods? ☐ Are adequate tools available for opening and moving supplies?
Storage Areas	☐ Is there sufficient storage space so that nothing is stored on floors, behind doors, in corridors, or on stairways? ☐ Are shelves adequate to bear the weight of the items stored? ☐ Are heavy items stored on lower shelves and lighter materials above? ☐ Is a safe ladder or step stool provided for reaching higher shelves? ☐ Are portable and stationary storage racks in safe condition--free from broken or bent shelves and standing solidly on legs? ☐ Is there a safety device in walk-in coolers to permit exit from the inside, and is there a light switch inside?
Hazardous Materials	☐ Are toxic materials and hazardous substances stored and handled properly? ☐ Are combustible and flammable materials stored and handled properly?
Waste Storage Areas	☐ Are garbage and waste containers constructed of leakproof material? ☐ Are containers adequate in number and size? ☐ Are containers on dollies or other wheeled units to eliminate lifting by employees? ☐ Are disposal-area floors and surroundings kept clean and clear of refuse?
Food Preparation Area	☐ Is adequate isle space provided between equipment to allow reasonable work movement and traffic? ☐ Are hot pads, spatulas, or other equipment provided for use with stoves, ovens, and other hot equipment? ☐ Is proper storage provided for knives and other sharp instruments? ☐ Are machines properly safety-guarded?

Table 8-2. Accident prevention checklist (continued)

Food Preparation Area ***(continued)***	☐ Do employees make use of tampers, hot pads, safe knife-storage devices, and machine guards provided for their protection? ☐ Are knives and other blades kept sharp? ☐ Are employees properly instructed in the operation of machines, mixers, grinders, choppers, dishwashers, and so on? ☐ Are mixers in safe operating condition? ☐ Are steam tables regularly maintained by competent employees?
Utensil-Washing Area	☐ If conveyor units are used to move soiled items, are edges guarded to avoid catching people's fingers or clothing? ☐ Are portable racks in safe operating condition- wheels and casters working, shelves firm? ☐ Are dish racks kept off the floor to prevent people from tripping over them? ☐ Are racks, hooks, and gloves provided so that employees do not have to put their hands into sanitizing baths of hot water or chemicals? ☐ Are drain plugs mechanically operated or provided with chains so that employees can drain sinks without placing hands in sanitizing solutions?

Table 8-3. General rules for safety

HANDLING AND LIFTING

1. Wear gloves when handling crates or sharp or rough materials.
2. Wear slip-resistant shoes in wet locations and steel-toe shoes in warehousing and stocking areas.
3. Wear helmets or hard hats in areas where Class I supplies are being lifted or hoisted.
4. When possible, use materials-handling equipment to move heavy supplies.
5. When lifting supplies by hand, use proper lifting techniques to prevent back injuries.

LOADING AND UNLOADING

1. Position bridge plates and mobile ramps correctly, and do not exceed load capacities.
2. Chock rear wheels of trucks and trailers, and use safety jacks when trailers are disconnected from their tractors.
3. Check the truck flooring for brakes and weakness before loading and unloading.
4. Remove loose straps and protruding nails from containers before unloading.
5. Never block aisles, doorways, and windows.

Table 8-3. General rules for safety (continued)

USING TOOLS AND MHE

1. Use the right tool for each job. Use nail-pullers for opening boxes, wire-cutters for cutting straps or wire, and hammers for driving nails.
2. Ensure that personnel are properly trained to use tools and equipment.
3. Follow safety precautions, especially when using power tools or MHE.
4. Use only MHE with the rated load capacity for the supplies being moved.
5. Maintain and service MHE as directed in the manufacturer's organizational and operator's maintenance manual.
6. Refuel MHE only in designated areas and only with the engine off.
7. Park MHE only in an approved area.
8. Use only electric-powered MHE inside a warehouse.
9. Establish a battery-charging area for MHE.

USING STORAGE AREAS

1. Always have and maintain adequate lighting.
2. Clean up spills immediately.
3. Use yellow 3-inch stripes to mark railings and stair risers, and use yellow and black 3-inch stripes to mark pit and platform edges and bollards to mark corners or obstructions.
4. Install door latches or locking devices on freezer rooms to permit the door to be opened from the inside. Also, install bells which can be activated inside freezer areas. These should be checked weekly to ensure that they are operable. Mount an axe marked with reflecting paint in each freezer room. Also, mount emergency lighting above exits.

PALLETIZING SUBSISTENCE

1. Use only containers, pallets, and dunnage that are in good condition.
2. Stack pallet loads with a 2-inch clearance on all sides. The clearance between stacks will permit air circulation.
3. Limit the height of the stacks based on floor load limits and the sturdiness of the containers. Where installed, maintain an 18-inch clearance below sprinklers and around lighting and heating fixtures. Regardless of the height of the stack, maintain a 36-inch clearance between stock and the ceiling when stacking heights exceed 15 feet or when a sprinkler system is not available.
4. When a space must be left on the pallet due to the configuration of the load, load the pallets with a four-point level top. Leave spaces only in the center. Place partially loaded pallets on the top of a stack, or place the supplies on a rack.

PREVENTING FIRES

1. For interior storage, post NO SMOKING signs in areas where smoking is not permitted.
2. Keep combustibles away from heat sources.
3. Collect trash daily, and place it in proper refuse containers.
4. Mark fire aisles and exits clearly, and ensure that they are not blocked.
5. Ensure that portable fire extinguishers are readily available and in good working order. Assign an operator to use each extinguisher in case of fire and to inspect it at least once monthly.

FIRE PREVENTION

The TISO and FSS must stress fire prevention during training and daily operations. Fire prevention checks should be included in your safety checklists.

There are three classes of fire with which you must be familiar. They are--

- Class A Fires - Ordinary combustibles, such as wood, paper, or cloth.
- Class B Fires - Flammable liquids and grease.
- Class C Fires - Electrical fires.

Three things must be present to have a fire. They are known as the fire triangle. These are--

- Oxygen
- Heat source
- Fuel

Fire extinguishers are classified by what they put out. Each extinguisher breaks a different link of the fire triangle. Class A extinguishers cool the source of the fire and eliminate the heat source. Class B extinguishers blanket the source with foam or chemicals to cover the fuel source. Most fire extinguishers used in a dining facility are rated for more than one type of fire. Because a fire within a dining facility may include one or more of the classes, a multipurpose, dry-chemical extinguisher would be the most effective and should be readily available. The post installation fire department should be consulted when classes in fire prevention are planned or given at your facility.

CHAPTER 9

FOOD SERVICE SANITATION

GENERAL

Proper sanitation procedures must be followed in the storage, issue, preparation, and serving of food. No soldier should get sick because the TISA or food service personnel failed to maintain proper storage temperatures and sanitation standards for food, equipment, or dining areas, or because foods were handled in an unsafe manner.

DINING FACILITY SANITATION

As an FA or FSS, you know food should always look good. But it is more important for you and your diners that proper sanitation practices are used when food is prepared and served. Each OJT program must include formal documented training in personal hygiene. It must also include sanitation practices for dining areas; food storage, preparation, and service; waste disposal; insect and rodent control; and the cleaning of dishes and equipment. Your local medical authority will train you in the areas of dining facility sanitation. Each supervisor must see to it that his subordinates are trained.

RESPONSIBILITIES

Sanitation standards are published in TB MED 530. The FSS is responsible for enforcing these standards. The food service supervisor, PVNTMED personnel, and FA are available to assist the FSS in this area. Areas of concern include personal hygiene; cleaning and sanitizing the facility and its equipment; waste disposal; insect and rodent control; and properly inspecting, storing, and handling foods.

TEN SITUATIONS CONTRIBUTING TO FOOD-BORNE ILLNESS

Ten common situations contributing to food-borne illness are highlighted below. Some examples of each situation are provided. Proper temperatures, hygiene, storage, and sanitation are discussed.

Unsafe Food-Holding Temperatures

Holding prepared, PHFs at room temperatures, unsafe refrigeration temperatures (>45º F) or unsafe, hot-holding temperatures (<140° F).

Poor Personal Hygiene

Failing to wash your hands before starting work, after using the toilet, or after touching any soiled object, or wearing soiled aprons and outer garments.

Cross Contamination

Cutting raw foods and cooked (or ready-to-serve) foods on the same surface without sanitizing between products or using knives, slicers, graters, choppers, or grinders for more than one food product without cleaning between products.

Unsanitary Dishware, Utensils, and Equipment

Cleaning and sanitizing tableware, utensils, and cutting equipment improperly, or failing to protect sanitized items from contamination.

Infected Food Handlers

Sustaining infected cuts, burns or sores, boils or pimples, sore throat, nasal discharge, or diarrhea.

Improper Food Handling

Using your hands, instead of a utensil, while preparing and serving food or while thawing frozen food at room temperature or in warm water.

Unsafe Cold-Holding and Reheating of Delayed-Use Foods and Leftovers

Slowly cooling and reheating foods, storing large masses of food in large-quantity containers, failing to reheat leftovers to safe serving temperatures (>165° F), or reheating food in holding or warming units (for example, reheating food on a steam table).

Improper Food Storage

Storing food uncovered on refrigerator shelves, storing raw foods directly on shelves or against refrigerator sides, or storing raw foods above or in direct contact with prepared foods.

Insects and Rodents

Failing to eliminate pest breeding or entry areas, failing to eliminate grime, spilled food, and trash which attract pests and promote breeding; or failure to initiate means to control pests when evidence of pests is noted.

Chemicals Stored Near Food

Storing cleaning and sanitizing compounds, solvents, pesticides, and other nonfood chemicals near food, or using unlabeled containers in the kitchen or serving areas.

EMPLOYEE TRAINING, APPEARANCE, AND HEALTH

Employment in a food-service establishment requires strict compliance with standards governing employee training, appearance, and health. To work in a food-service establishment, you must be knowledgeable in the principles and practices of food-borne illness prevention, and first aid for choking. You gain the knowledge through initial and ongoing training throughout your employment. Chapter 6 provides guidance on formal and OJT training programs. Some standards are described in this paragraph.

Proper attire

To dress properly for your duties in a food-service establishment, adhere to the following:

- Wear a clean food-service uniform daily. Food-service uniforms must be white, pastel, or light-colored to readily show accumulations of soil or dirt.
- Military personnel (who are detailed by roster to work as food service attendants and who are authorized to work on the serving line or in food-preparation areas) may wear the food-service uniform specified, or they may use light-colored aprons over their clean, duty uniforms.
- You may wear rounded-neck tee shirts as an outer garment while performing custodial duties.
- Wear a clean hair restraint (such as a hair net or cap) which effectively prevents hair from touching food or food-contact surfaces.
- Do not wear any jewelry. Plain wedding bands are acceptable, but ornate rings, bracelets, watches, and similar items collect soil and also may catch in machinery or on sharp or hot objects.

Health

Unless cleared for duty by a medical authority, you cannot work in a food-service establishment (in any capacity) while infected with a disease in a communicable form that may be transmitted by food.

EMPLOYEE PRACTICES TO SAFEGUARD SANITATION

Protecting food from contamination requires your continuous attention to food-service techniques which involve handling food, taste-testing recipes, handling utensils and equipment, handwashing, and performing custodial duties. Always adhere to the directives outlined in this paragraph to safeguard food sanitation.

Food Handing

Observe the following when handling food:

- Always avoid unnecessary hand contact with food.
- Wear single-service, plastic food-service gloves when hand contact is necessary, such as when preparing meatloaf. Replace gloves frequently to maintain sanitary conditions.
- Do not serve or prepare any food product with your bare hands. Whenever possible, handle food with clean utensils, such as tongs, scoops, spoons, or forks.

Recipe Taste-Testing

Observe the following when taste-testing:

- Use only sanitized utensils to withdraw food portions to taste the product.
- Discard as food waste any uneaten portion withdrawn for taste-testing.
- Clean and sanitize utensils used for taste-testing before you reuse them.

Utensil and Equipment Handling

Observe the following when handling utensils and equipment:

- Grasp clean and sanitized flatware, cups, glasses, bowls, and plates by the handle, bottom, or edge. Do not contaminate food-contact surfaces or rim of bowls, cups, or classes with your hands.
- Be careful when handling soiled napkins, glasses, cups, flatware, and any other soiled utensils. Soiled articles may contaminate clean utensils and equipment, your hands, and ultimately the food served to the customer. Always wash your hands after handling any used or potentially soiled items.

Performing Custodial Duties

Perform custodial duties (such as mopping the floor, cleaning grease hoods or grease traps) when contamination of food is least likely to occur (that is, after food preparation) and interference with service is minimal.

- Perform custodial duties toward the end of the work shift when contact with food has ceased.
- Maintain a "clean-as-you-go" policy by holding each worker responsible for continuous cleaning of his own work areas. "Clean-as-you-go" does not include routine cleaning of work areas.

Using Wiping Clothes (Handiwipes)

If wiping cloths are used to clean or sanitize, special precautions are necessary. Cloths used for wiping stationary equipment should be wrung out frequently in a sanitizing solution and stored in a solution when not in use. They should be kept separate from other wiping cloths. See TB MED 530 for further guidance. Disposable cloths are used in Army dining facilities. The use of rags is not permitted.

THE TIME AND TEMPERATURE PRINCIPLE

Time and temperature are extremely important factors to remember when preparing, holding, or serving PHFs. Virtually all bacteria can multiply rapidly at temperatures of 45° F to 140° F. This is the *TEMPERATURE DANGER ZONE.*If, during preparation, PHFs are exposed to the temperature danger zone, keep the exposure time to an absolute minimum.

Tips on Temperature

To protect food from harmful bacteria keep "cold foods" below 45°F and, when possible, below 40° F. Keep "hot foods" above 140° F. You must cook foods until all parts reach an internal temperature

of at least 140° F. However, you must cook certain foods without interruption to reach even higher internal temperatures to eliminate the risk of heat-resistant organisms. See Chapter 16 for minimum internal temperatures.

Tips on Time

Discard food exposed to the *DANGER ZONE* for over three cumulative hours.

MANUAL DISHWASHING

The normal washing, rinsing, and sanitizing of utensils and equipment require a three-compartment sink, and they require your constant attention to maintain sanitary standards. Portable food-contact items such as pots, pans, utensils, and nonelectrical items should be cleaned in an area separate from food preparation.

The Prewash Policy

Before washing utensils and equipment, clean sinks prior to use. Prescrape and preflush equipment and utensils, and when necessary, presoak them to remove food particles and soil. The preflush water temperature must not exceed 80° F.

The First Sink Compartment

Equipment and utensils are to be thoroughly washed in the first compartment with a detergent solution that is kept clean and a water temperature that is kept between 110° F to 140° F.

The Second Sink Compartment

Equipment and utensils will be rinsed free of detergent and abrasives with clean, hot (120° F to 140° F) water in a second compartment.

The Third Sink Compartment

Sanitize the food-contact surfaces of all equipment and utensils in the third compartment according to one of the methods outlined below.

Standard primary method. The standard method requires immersion for at least 30 seconds in clean, hot water of at least 170° F.

When hot water is used for sanitizing, integral heating devices or fixtures must be installed in, on, or under the sanitizing compartment of the sink capable of maintaining the water at a temperature of at least 170° F.

A numerical, scaled, indicating-thermometer accurate to plus or minus 3 degrees will be used to make frequent checks of the water temperature. Use a wire basket of such size and design to permit complete immersion of the utensils, kitchenware, and equipment into the hot water.

This method requires at least two water heaters for the third sink compartment. One is required to bring the water temperature from 140° F to at least 180° F. The second is to maintain the water at a minimum of 170° F.

Emergency method. In an emergency, when hot water is not available, chemical sanitizers may be used to sanitize equipment. The following procedures are for the use of chemicals and should only be used in emergencies:

- Immerse the item for at least one minute in a clean solution containing at least 50 parts per million (ppm) of available chlorine (1 tablespoon of household chlorine bleach for every 4 gallons of water used), at a temperature of at least 75° F but no more than 110° F. ***(NOTE:*** *Manufacturers of food-service equipment also caution users that liquid bleach attacks silver, pewter, and aluminum finishes).*
- Immerse the item for at least one minute in a clean solution containing at least 12.5 ppm of available iodine and having a pH not higher than 5.0 at a temperature of at least 75° F but not more then 110° F. Ensure that the time and temperature are followed carefully.

CAUTION
When using chemical sanitizers, care must be taken to follow the instructions carefully.

MECHANICAL WAREWASHING

Dishwashing operations present special problems to FSSs. Dining facilities that are using military kitchen police must orient and train a new dishwashing crew each day. Most of these personnel have never seen a dishwashing machine and must be closely supervised to ensure effective operations. The FSS must know how to operate and maintain the dishwasher according to MIL-HDBK-740 and the manufacturer's instructions. The mechanical cleaning and sanitizing of equipment, utensils, tableware, and flatware involve much more than simply pressing the *"ON"* button of the dishwasher. The success of the mechanical cleaning and sanitizing operation depends on compliance with sanitary standards-of-practice. Figure 9-1 (page 9-5) gives some tips for operating and maintaining dishwashers.

DO

- Know the capacity and speed of your machine.
- Use the right detergent.
- Clean as the manufacturer recommends.
- Read your operator's manual, and keep it on file.

DON'T

- Overload or overwork your machine.
- Use a hand dishwashing detergent.
- Leave out removable parts after you clean the machine.
- Use the machine if the water is not heated to the correct temperature.
- Throw away your operator's manual after you read it once, or put it where you cannot find it.

Figure 9-1. Tips for operating and maintaining dishwashers

Maintaining Sanitary Standards

Before loading the dishwasher, do the following:

- Flush or scrape soiled equipment, utensils, tableware, and flatware to remove excess food and soil.
- When necessary, soak items to remove resistant food particles and soil (unless a prewash cycle is part of the dishwashing operation). Arrange the placement of items on racks or trays, in baskets, or on conveyors to permit detergent wash and rinse waters to reach all food-contact surfaces.
- Free draining.

Washing Flatware

Washing flatware in a dishwasher is a two-step operation which includes a full wash-cycle and a rinse-only cycle. Both of these operations require your attention. Wash and rinse waters must reach all surfaces of each piece of flatware to minimize the machine's sanitation effect. To ensure thorough washing--

- Scatter flatware loosely on cutlery racks. Do not crowd flatware.
- Separate like pieces of flatware, especially spoons, to prevent them from meeting and obstructing the water.

CLEANING FREQUENCY

Keep equipment, utensils, and the entire foodservice establishment clean and sanitary at all times. The following outlines the minimum guidelines for the cleaning of various items:

- Tableware. Wash, rinse, and sanitize after each use.
- Kitchenware, utensils, and food-contact surfaces of equipment. Wash, rinse and sanitize after each use and following any interruption of operation when contamination may occur.
- Equipment and utensils used continuously or in a products line process. Wash, rinse, and sanitize at intervals throughout the work period.

. Equipment and utensils which touch raw food products. Clean and sanitize thoroughly before these items touch other food.

• Food-contact surfaces of grills, griddles, and similar cooking devices. Clean at least once per operating shift. (Food-contact surfaces must be free of encrusted grease, food debris, and other accumulated soil.) This requirement does not apply to equipment protected from contamination, which is not used or otherwise soiled.

• Deep fat fryers. Drain, strain fat, and wipe internal and external surfaces clean of soil and debris at the end of day's use. Keep covered with a tight-fitting lid when not in use.

• Nonfood-contact surfaces of equipment. Clean as often as necessary to maintain free of dust, dirt, food particles, and other debris accumulations.

• Floors and walls. Clean daily when the least amount of food is exposed to possible contamination. This requirement excludes the cleanup of spills, which must be done immediately.

MATERIALS FOR CLEANING

Use detergents and sanitizers only according to the manufacturer's label instructions. Contact Preventive Medicine Services for additional information on sanitizer use and approval. *NEVER USE PHENOLIC COMPOUNDS FOR* SANITIZ-*ING FOOD- CONTACT SURFACES.*

Clean it Correctly

It is preferable to use single-use paper towels or disposable cloths to wipe and clean equipment and surfaces of a food-service establishment. If you use reusable wiping cloths, the following is essential:

• Wiping food spills on tableware. (This includes plates or bowls being served to the customer.) Keep these cloths clean and dry, and use them for no other purposes.

• Wiping food spills on kitchenware and food-contact surfaces of equipment. Clean, rinse, and store these cloths in a clean, sanitizing solution.

• Cleaning nonfood-contact surfaces. (These include counters, dining table tops, and shelves.) Keep these cloths clean, rinsed, and stored in a clean, sanitizing solution. Use them for no other purpose.

Follow Other Cleaning Restrictions

Do not use sponges or sponge-type cloths. Do not use steel wool in Army dining facilities.

MAINTENANCE, CLEANING, AND DISINFECTING OF ICE MACHINES

Ice machines also require sanitizing to control and eliminate contamination, yet they are often overlooked in the dining facility cleaning cycle. Perform the following procedures monthly:

• Disconnect the ice machine, empty the bin, and allow it to warm up.

• Clean all internal surfaces and any removable parts which contact the ice with a soap or detergent solution.

• Brush a warm deliming solution on all ice-contact surfaces with a nylon-bristled brush. Clean the holes in the water control device completely to allow the even flow of water over the freezing board. Ensure the personal protective equipment noted on the deliming label is available and worn.

• Rinse thoroughly, inspect the flow line, and assemble the ice machine for operation.

• Check for leaks and the possibility of contaminants dripping into the bin.

• Check manufacturer's recommendations and directions for sanitizing to determine if any additional service is required.

• Flush the ice bin with potable tap water. Sanitize the internal surfaces, allow them to dry, and return the machine to service.

FLY CONTROL

Good sanitation practices are the key to a fly-free facility. Garbage attracts pests and provides a breeding ground. Even if flies hatch elsewhere,

accessible waste will invite them to your facility. Do not serve food to flies. All entrances to the dining facility must be protected from flying insects. The following are means of protection:

- Doors that are tight-fitting and self-closing.
- Windows which close tightly.
- Proper screening.
- Air curtains which provide sufficient air velocity to cover the entire door opening.

RODENT INFESTATION PREVENTION

Without food, water, or shelter, a population of rats or mice cannot survive in the dining facility. To keep rodents out of your facility, take the steps described below.

Eliminate Rodent Entranceways

The following allow rodents to enter the dining facility:

- Gaps between the closed door and the floor permit rodents to enter. However, if the building is sealed tightly, rodents will have a difficult time entering.
- Basement windows, vents, and floor drains. These provide rodents with an easy access into the building. Vents and basement windows should be protected with mesh screens. Basement and other floor drains should be covered with a perforated metal cap with a removable hinge.

Eliminate Rodent Hiding Places

Rodents build nests in places such as crowded storage rooms, near garbage, along walls, and under boards and crates. The following measures will help keep your dining facility rodent free:

- Keep garbage only in heavy-duty plastic or galvanized metal containers with tight-fitting lids.
- Place containers on racks at least 18 inches above the ground or on concrete blocks.
- Place garbage cans or dumpsters as far from the building as conveniently possible.
- Place all dry-food products in storerooms and on racks at least 6 inches above the floor.
- Keep food products away from the walls.

Store boards, crates, and other containers or racks away from the walls.

Starve Rodents Out

Careful storage and proper cleaning will reduce a rodent's food sources. To eliminate rodent food sources, you must sweep floors regularly and clean up spills immediately.

COCKROACH INFESTATION PREVENTION

Ridding a dining facility of cockroaches means depriving these pests--and virtually all insects--of food, water, shelter, and access to the facility. These are some measures you can take to protect the dining facility.

Eliminate food and water sources by keeping the facility clean. Remember that cockroaches can and will eat practically anything. A mere crust of bread can support an entire cockroach population. Careful cleaning reduces the food supply for insects, destroys many insect eggs, and may reveal new infestations before they become serious. Some cleaning practices are as follows:

- Clean hard-to-reach corners and crevices and under and behind equipment.
- Clean areas where grease accumulates, such as around ranges and ventilation areas.
- Remove garbage promptly.
- Never leave food uncovered.
- Wipe up spills immediately.
- Do not allow puddles from cleaning, or other activities to remain on the floor.
- Do not store wet mops or brushes in the food-preparation area.
- Pick up crumbs and other scraps of food as quickly as possible.
- Keep lavatories and toilet areas clean.
- Clean storage areas regularly.
- Repair all water and sewage leaks as quickly as possible.

Cockroaches and most insects become inactive at temperatures below 40° F. Therefore, refrigerating items such as cocoa, powdered milk, and nuts will cut down on infestation.

Develop a first-in, first-out system so insects will not have an opportunity to infest and complete their life cycle.

WASTE DISPOSAL

The dining facility has three types of waste. They are liquid, organic solid (edible), and inorganic solid (inedible). Waste is disposed of both inside and outside of the dining facility as discussed below.

Inside

A dining facility disposes of liquid waste through the sewer system. Make sure that the drain covers, both in the floor and in sinks, are not removed. They are there to keep large particles from clogging the drain. If a piece of steam equipment does not have a strainer on the drain, use a colander or strainer when it is drained or cleaned.

Outside

The DEH is responsible for disposing of solid waste. Keep the area outside of the dining facility clean. On some installations, organic solids may have to be separated from the inorganic solids. Where large dumpsters or trash compactors are used, ensure that lids and doors are kept closed. Also observe the following precautions:

- Garbage racks and cans should be clean, and lids should fit tightly on cans.
- Mops should be clean and stored properly, and faucets should be turned off.
- Fill garbage containers not more than 4 inches from the top to avoid spillage.
- Remove garbage from food preparation areas as soon as possible.
- Keep garbage containers covered in the food preparation and ware-washing areas when the facility is not operating.
- Keep entire garbage storage area clean.

SANITATION AT THE TISA

Sanitation, storage, inspection, and handling techniques apply equally at the TISA to protect subsistence items. High standards of cleanliness and sanitation must be maintained by everyone involved with the handling of food items. Food can cause illness if it becomes contaminated through improper handling, and contaminated food which must be disposed of represents a loss to the government. Your local command may have an SOP on sanitation which you and your people must follow. TB MED 530 and this manual provide additional guidance for the protection of subsistence during storage and handling.

Personnel

All personnel must be neat, clean, and free of infection before they are allowed to handle subsistence. They should not be allowed to smoke or chew tobacco except in designated areas.

Area

Storage areas should be kept clean, orderly, and free of garbage at all times. Garbage should be disposed of in approved containers with tightly fitting lids. Any food spilled should be cleaned up immediately. A program to prevent insect and rodent infestation should be coordinated with engineer personnel and continuously enforced. Pallets or dunnage should be used to raise the supplies off the floor or ground.

Equipment

Small equipment and utensils which are in direct contact with food, such as scales, scoops, and knives, must be cleaned and sanitized after each use. Equipment used for storage should be cleaned and sanitized too.

Transportation

Vehicles used to transport subsistence should be as clean and sanitary as any other subsistence storage area. All vehicles should be covered. When

canvas-covered vehicles are used, the rear flap should be lowered and secured during transportation. All vehicles should have standard pallets or buckboards to elevate the supplies above the bed of the truck. Vehicles used to transport food must not be used to carry trash, garbage, petroleum products, or other materials that might contaminate food. Do not use privately own vehicles to transport food. Refrigerated or insulated vehicles must be used to transport perishable food when, during transport, the temperature of the food can be expected to raise above the safe levels of 45° F (7° C) for refrigerated items and 0° F (-1 8° C) for frozen items.

CHAPTER 10

MENUS AND NUTRITION

GENERAL

If the FSS or contractor uses the Master Menu as a guide for menu planning, well-balanced meals with all required nutrients will be offered to the soldier. However, under ARCS, the FSS, contractor, or COR can make substitutions. The FA or COR must periodically check menus to see if suitable substitutions have been made. Nutrition initiatives for active Army dining facilities are outlined in AR 30-1, Appendix J.

The guidelines are designed to heighten the soldier's awareness of the importance of nutrition, to educate soldiers in making appropriate food choices, and to provide a variety of nutritional menu alternatives.

Diners should be offered a low-calorie menu that includes items from all four food groups for each breakfast, lunch, and dinner. This includes the short-order line when it is operational. The FSS or contractor should plan meals with foods that present a variety of textures, colors, and flavors to the diners.

MASTER MENU

The Master Menu (SB 10-260) and the 14-Day Reserve Component and Field Training Menu (SB 10-263) are developed for use in active Army or RC dining facilities. Menus in SB 10-260 and SB 10-263 are planned to give soldiers the recommended servings of each of the four basic food groups and ensure that the recommended dietary allowances detailed in AR 40-25 are met daily. The Master Menu also includes reference to recipes in TM 10-412 and menu notes for variations of recipes not covered in TM 10-412. It also provides a recapitulation listing of all foods except condiments and accessory foods required to serve 100 soldiers the food on the day's menu.

MENU BOARDS

The purpose of the menu board is to provide an interchange of information between food service personnel and the TISA regarding anticipated subsistence requirements. Each major oversea command and CONUS installation operating a dining facility is required to have a menu board. Usually, active Army menu boards meet once a quarter; however, special meetings may be called by the chairperson. Army National Guard and major United States Army Reserve command boards meet at least once every year.

Membership

The membership of the menu board depends on whether it is a major oversea command menu board or an installation menu board (see AR 30-1).

Functions

The menu board's function is to review SB 10-260, SB 10-263, or other special menus to determine the extent to which they will be implemented. Changes should be made as required to meet the needs of the command or installation and the desires of the diners. All revisions to the menu must be made within the authorized monetary value of the BDFA. When the quality of an item is unsatisfactory or considered unsuitable for its intended use, the board will ensure that an unsatisfactory material report is initiated, as outlined in AR 30-16, and will include appropriate comments

in the minutes. Menu revisions are specifically authorized for the following purposes:

- To provide low-calorie items specifically recommended by the installation surgeon.
- To incorporate changes and substitutions when directed by the USAQMC&S, Army Center of Excellence, Subsistence (ACES).
- To make suitable substitutions when items in the published menu are not available.
- To incorporate items that are determined to be in excess of normal requirements as reported by the subsistence supply depot or TISA.
- To make substitutions to permit the use of locally procured fresh fruits and vegetables.
- To adjust issue quantities of food items appearing on the menu for which demand data have varied significantly from anticipated use.
- To adjust menus to provide additional warming or cooling beverages during field training under adverse weather conditions. All adjustments will be within the constraints of the BDFA for the applicable month unless a special allowance has been authorized by the MACOM.
- To provide supported units with smaller-size containers to meet the feeding requirements of less than 100 persons.
- To authorize local procurement of commercial pastries only when it is determined that in-house production would exceed resource capabilities. The menu board will project the use of manufactured items, processed items, or by-products generated as a result of an experiment, demonstration, or testing, and training by food service personnel. Controls of the product are outlined in AR 30-18. Menu adjustments are not authorized to substitute beverage bases for canned or frozen fruit juices for the breakfast meal.

Duties

Duties of menu board members, special ARNG and USAR menu boards, and preparation and distribution of minutes are detailed in AR 30-1.

MENU PLANNING

Menu planning is the thought given before deciding what type of food products will be served and how they will be prepared. When using the ARCS, the FSS may decide to plan his own complete menu, use an established menu, or use a combination of both. When the master menu is not used, the FSS must ensure that the menu supplies the nutrients needed by the soldier. He must use data from the four basic food groups to plan the menu. Also, the soldier should be offered fibers through whole grain breads and cereals and fresh fruits and vegetables. When making substitutions, replace the item with another item from the same food group.

Basic Four Food Groups

The four food groups are meat, milk, grain, fruits and vegetables. Not all foods fit into one of these groups. Foods such as soft drinks and alcoholic beverages are not in any of the food groups, however, and they are generally high in calories and low in nutrients. See Table 10-1 (page 10-3) for more data on the four food groups. The guidelines for healthy eating, listed in Figure 10-1 (page 10-4), are recommended for use by all soldiers. Menus should be planned and evaluated with these guidelines in mind.

Planning guide

Suggested menus contained in SB 10-260, including short-order, ethnic menus, and fitness menu patterns, should be used as a planning guide. The fitness menu patterns in SB 10-260 are for all meals and provide menus that range from 450 to 650 calories per meal, not to exceed 1,600 calories per day. Every effort must be made to offer short-order items for both lunch and dinner meals. At installations where the mission (such as basic training units) or dining facility design (for example, having only one serving line) means short-order menus cannot be offered on a regular basis, the short-order menu should be offered as well as regular menus during the dinner meal and on weekends.

Table 10-1. Basic four and other food groups

	MEAT GROUP	MILK GROUP	GRAIN GROUP	FRUIT AND VEGETABLE GROUP	OTHER FOODS
Leading Nutrient	Protein	Calcium Vitamin C	Carbohydrate	Vitamin A	Fat Carbohydrate (simple sugar)
Other Nutrients	Thiamine Niacine Iron	Riboflavin Protein Vitamin A Vitamin D	Thiamine Niacin Iron	Carbohydrate	Not Applicable
Food Items	Meat, Fish, Poultry, Eggs, Beans, Nuts, Peanut Butter	Milk: skim low-fat whole chocolate buttermilk evaporated powdered Ice Milk, Pudding, Custard, Yogurt,Cheese, Ice Cream, Cream Soup, Cream	Bread and Flour: white wheat rye cornmeal (any other) Cereal: dry cooked Pasta, Rice Crackers, Waffles, Pancakes	All Fruits All Vegetables	Butter, Margerine, Oil, Shortening, Lard, Gravy, Salad Dressing, Cookies, Cake, Pie, Doughnuts, Jelly, Honey, Candy, Gelatin, Alcohol
Minimum Daily Servings for Adults	2	2 (4 for teenage soldiers)	4	4	0
*Approximate Serving Sizes	2 to 3 oz of cooked portion	8 oz any fluid or 1.5 slices or oz of any cheese	1 slice of any bread or 1/2 cup of cooked starch or 1 ounce of dry cereal	1 cup of raw or 1/2 cup of cooked fruit or vegetable	Not Applicable
*The actual sizes may vary with particular items.					

- **Eat a variety of foods.** The greater the variety, the less chance of developing a nutrient deficiency or excess. Use the basic four food groups as your guideline.
- **Consume a moderate amount of calories.** To maintain body weight, take in only as many calories as you use. To lose weight, decrease your total intake of food, especially fats, oils, sugars, and alcohol.
- **Avoid excessive fat intake.** Limiting your consumption of fats and oils promotes good health and assists in weight maintenance and weight loss. Consume less fat and fewer fatty foods, especially if you have been identified as being "at risk" for heart disease. Polyunsaturated fats can be substituted for some saturated fats.
- **Consume a moderate amount of refined sugar.** Too much refined sugar may replace needed items in a diet and offer many calories with no nutritional value.
- **Get enough starch and fiber.** Foods from the grain group provide starch. Whole grain products, vegetables, and legumes are rich in fiber.
- **Avoid excessive salt or sodium intake.** A high salt or sodium diet may cause high blood pressure. It is not necessary to salt foods at the table since the body gets enough salt and sodium from that found naturally in foods and from that added during processing.
- **Avoid excessive alcohol intake.** Alcoholic beverages are high in calories and low in nutrients. Alcohol should not replace nutrient rich foods in the diet.

Figure 10-1. Healthful guidelines for soldiers

Planning Considerations

Before a menu is prepared, there are several factors that must be considered. Menu planning considerations are--

- Nutritional adequacy according to AR 40-25.
- Substitutions may be required in order to stay within account tolerance.
- Some food items may be unavailable in certain seasons; therefore, substitutions may be required. In-season foods that are abundant can be added.
- There are times when changes to the menus may be required because a food item is not available. Also, changes may be required to use items received through a forced issue.
- Diner preferences should always be a major consideration when planning the menus or making substitutions.
- If the facility is understaffed, or the staff lacks skills, there may be problems in preparing or serving certain items on the master menu. In these instances, items may be replaced with items that are easier for the staff to prepare and serve. On the other hand, there may be plenty of personnel or especially talented cooks. In such cases, you may be able to serve a special food item in place of a like item on the menu.
- Equipment shortages or breakdowns may force substitutions to be made.
- Special occasions may call for special food items or entree menus.
- As soldiers become more active, they need more calories. At low levels of physical activity, soldiers should consume less calories.
- All dining facilities should provide low-calorie food alternatives in addition to the standard menu. The easiest way to serve a low-calorie meal is to develop a low-calorie menu for each meal, substituting low-calorie items for regular items from the same group. Some of the low-calorie food items in each group are shown in Table 10-2 (page 10-5). There are also low-calorie substitutes for some of the items not in one of the four basic food groups.
- Fresh fruit; noncaloric beverages; margarine; whole grain breads and rolls; low-fat milk; low-calorie dressing; herbal seasonings or other commercial sodium-free herbal seasoning; and granulated, nonnutritive sugar substitute should be available to diners.

Table 10-2. Low-calorie food items

GROUP	FOOD ITEMS
Fruits and Vegetables	Fruits: Fresh; Frozen and Canned (without sugar or with syrup drained) Vegetables: Fresh; Frozen and Canned (without sauce or butter)
Grain	Bread and Flour (all types), Pasta, Rice, Crackers (plain), Pancakes (plain)
Meat	Lean Meat, Fish, Poultry (without skin), Eggs
Milk	Milk: Skim, Low-fat, Butter, Nonfat (dry) Yogurt (plain) Cheese: Low-fat (all types)

BREAKFAST FITNESS BAR

The breakfast fitness bar is designed to provide alternatives to the traditional breakfast in garrison dining facilities. It provides soldiers with selections that can reduce fat, cholesterol, and sodium consumption. See Table 10-3 (page 10-5) for a sample breakfast bar.

FITNESS BARS, LOW-CALORIE MEALS

Fitness bars and low-calorie meals are now available at most dining facilities Armywide. Some guidelines to remember when selling this program are listed below.

Use the menu board meeting as an opportunity to discuss the breakfast fitness bar concept and determine the best approach to publicizing its use installationwide.

Use the Public Affairs Office to assist with publicity.

Provide a selection of foods from each of the basic four food groups listed above for each day's breakfast bar. Variety in the selections offered will be key to its success.

Appropriately set up and display the fitness bar in the salad bar self-serve area. Ensure that the foods and their setup give good eye appeal.

Chinaware and eating utensils should be placed next to the fitness bar.

Fresh fruits should be neatly arranged together, not placed in individual serving dishes. Canned fruits should be placed in quart-size or smaller contains and appropriately garnished.

Assorted breads should be removed from their wrappers and attractively arranged in an appropriate container near a toaster, set up for diners to make their own toast. Assorted jams and jellies and margarine should also be available for diner selection.

Table 10-3. Sample breakfast bar

MILK GROUP
• Low-fat (2 percent), skim, low-fat (1 percent) chocolate, buttermilk. • Low-fat yogurt (plain or fruit-flavored). • Cheeses (American, cheddar, Mozzarella, cottage, and cream cheese).
MEAT GROUP
• Peanut butter, seeds (sunflower), unsalted nuts.
FRUIT GROUP
• Assorted unsweetened juices. • Canned applesauce, apricots, fruit cocktail. • Dried fruits (golden or dark raisins and prunes). • Fresh apples, bananas, grapes, oranges, nectarines. • Fresh berries and melons in season. • Fresh or canned grapefruit, peaches, pears, pineapple. • Frozen (thawed) blueberries and strawberries.
GRAIN GROUP
• Assorted individual whole grain and unsweetened cereals. • Individual instant oatmeal or hominy grits. • Blueberry, bran, corn, or English muffins. • Bagels. • Raisin, pumpernickel, rye, whole wheat, or white bread. • Biscuits. • Granola bars.
OTHER COMPONENTS
• Assorted jams, jellies, preserves. • Margarine prints. • Coffee (regular and decaffeinated), cocoa, tea.

SALAD AND FRUIT BAR

A first-class salad and fruit bar for lunch and dinner provides an excellent opportunity for soldiers to select foods that provide essential vitamins, minerals, and fiber. Fruits are a good source of complex carbohydrates and are also low in sodium.

Preparation

Food handlers should carefully prepare fruits and vegetables to avoid nutrient loss. The highest concentration of vitamins is in the layer underneath the skin of fruits and vegetables. By keeping cutting and chopping to a minimum and carefully trimming and paring fruits and vegetables, there will be minimal nutrient loss, and texture, appearance, and flavor will be enhanced.

Recipes

TM 10-412 provides over 85 salad and fruit recipes, to include 11 varieties of fruit salad, Waldorf salad, and cottage cheese salad. A variety of cheeses, low-calorie plain or fruit-flavored yogurts, and canned fruits can round out the fruit and salad bar. Low-calorie dressings are also required by AR 30-1, Appendix J. They provide dressings with about one-tenth of the calories that a regular dressing contains.

NUTRITION CHECKLIST

The nutrition checklist in AR 30-1, Appendix J is used to determine the adequacy of the nutrition program in each active Army dining facility. The responsible FA must evaluate each dining facility quarterly. The findings and recommendations from the review should be recorded. A copy of the review, signed and dated by the FA, is provided to the commander having operational control over the dining facility. One copy is forwarded to the installation FA.

FOOD MYTHS AND FADS

You must avoid all food fads when planning menus. A food fad is an eating pattern based on an unproven belief about certain foods which promote an extreme view. Remember, eating a moderate amount of a variety of foods is the basis of healthy eating.

Food Myths

Recently, the following false or unproven beliefs about food have been the basis of food fads:

- Any disease can be prevented by a special diet.
- Food processing destroys the nutritive value of food.
- Food additives and preservatives may contain poisons.
- Megadoses of vitamin C will prevent or cure colds or illnesses.
- Smoking increases your need for vitamin C.
- Megadoses of vitamin E can prevent heart attack or slow the aging process.
- Grapefruit and other acidic foods can burn up fat cells and calories.
- Fast weight loss is desirable.

Recent Fads

Recent fads have involved such products as vitamins B 15, B 17, and B 18; fat-burning formulas and creams; starch blockers; and sauna suits. Fad diets have included liquid protein diets, limited-food diets, carbohydrate-free diets, and powdered drink diets.

Dangers

Consumption of any nutrient at levels far above or below recommended levels will cause a nutrient imbalance and possible harm to the body. Avoid any extreme eating patterns. The biggest danger of food fads is that a person may avoid seeking needed medical help until a cure is too late. Also, products related to fads are often costly. The money wasted on them could be spent on basic, nutritious foods. Also, false information about food can lead people to distrust accurate

information issued by the food industry and the government.

Promotional Techniques

Fad promoters often use unethical means to convince people to use their products or follow their plans. Some of the techniques used are listed below.

- Credit themselves with false or misleading titles.
- Use false case histories and testimonials.
- Promise quick and dramatic results.
- Threaten legal action against opponents.
- Avoid discussion of dangers of products.
- Try to undermine trust in food scientists and governmental protection agencies.
- Advertise heavily. (Obviously not all firms that advertise heavily are promoting food fads.)
- Make special appeals to the elderly, pregnant, sick, and poor.

Consumer Information Organizations

There are many sources of information on food. However, not all of them are reliable. Make sure that you do not base diets and menus on misinformation put out by organizations you cannot trust. You may rely on data put out by the--

- American Cancer Society.
- American Dietary Association.
- American Heart Association.
- American Medical Association.
- Consumer Product Safety Commission.
- Federal Trade Commission - Bureau of Consumer Protection.
- Food and Drug Administration.
- US Department of Agriculture.
- US Postal Service.

POSTED DAILY MENUS

When the menu is prepared, it must be conspicuously posted where it may be read by the customer before or upon entering the dining facility. The posted menu includes all meals scheduled for service that day and also the caloric value of items on the menu. Low calorie menus are also posted to provide diners information upon which to make their meals selections. Post the menu for the following day before serving the dinner meal.

CHAPTER 11

EQUIPMENT REPLACEMENT

GENERAL

AR 30-1, Chapter 5 and AR 30-18, Chapter 4 detail the requirements for maintenance of the dining facility and TISA equipment replacement programs. The FSS, TISO, or contractor is responsible for ensuring that all required food service equipment authorized is on hand or on order. Also, he must ensure that the equipment works properly and identify funds for replacement in the budget as the equipment becomes uneconomically reparable. The DA Form 3988-R is used to track and project funds for equipment replacement in the dining facility. The DA Form 7170-R is used for the same purpose in TISAs. All food service equipment must meet the standards of NSF International. TB MED 530 identifies how this is done.

FORMS COMPLETION

DA Form 3988-R and DA Form 7170-R must be prepared accurately to ensure that an audit trail is complete and to help determine when equipment is to be scheduled for replacement. Some areas to remember when using DA Form 3988-R or DA Form 7170-R are discussed below.

Complete the Form

List all electrical, nonelectrical, mechanical, and nonmechanical equipment requiring engineer support on the appropriate form. It is not necessary, however, to include dining room furniture such as chairs, tables, and draperies or decor items. A separate form may be maintained to help track dining room furniture and decor item replacement. AR 30-1 gives instructions on how to complete DA Form 3988-R for dining facilities and AR 30-18 provides instructions for DA Form 7170-R for TISAs.

After completion, the original and three copies of the DA Form 3988-R should be sent to the FA. The fourth copy should be retained by the FSS in the facility. When a signed copy of the form is returned from the FA, the interim copy can be discarded by the FSS.

The DA Form 7170-R is prepared in three copies. The TISO provides a copy to--

USAQMC&S
ATTN: ATSM-CES-OE
Fort Lee, VA 23801-5041

The TISO also provides one copy to DEH, and retains one copy at the TISA.

Describe the Equipment

It is extremely important that the description of the equipment be accurate. This will ensure accurate data for the budget request and availability of funds for the acquisition of dining facility or TISA equipment, including decor items. Also, it will give the supporting engineers essential data to use in removal and installation of equipment and for ordering repair parts.

Forms Consolidation

The FA consolidates all DA Forms 3988-R from his subordinate units into one equipment replacement list. The USAQMC&S, ACES will consolidate all requested requirements for TISAs. Accurate data on the DA Form 3988-R or DA Form 7170-R is vital in forecasting equipment requirements and submitting the annual budget request for OMA and OPA funds.

OPERATION

The DEH is responsible, upon request, for the initial, formal training of personnel on operation and operator maintenance of all newly installed FSE. The FA and TISO are responsible for follow-on training of equipment operators. Equipment

must be inspected periodically to ensure that it is being properly used and maintained.

MAINTENANCE

Normally, maintenance for dining facility or TISA equipment is requested through the DEH. When equipment needs repair, the FSS, TISO, or contractor reports it to the DEH. A record of the report is kept on a DA Form 2405. The DA Form 2405 is easy to complete and aids in work order follow-up and in determining early replacement requirements. Guidance for completing the form is in DA Pamphlet 738-750. Responsibilities are described below.

DEH Personnel

DEH personnel are responsible for moving, installing, calibrating, and repairing all FSE. Also, they are responsible for certifying that space, utilities, and funds are available for installation and maintenance of each piece of equipment before it can be requisitioned.

Equipment Users

Dining facility and TISA personnel are responsible for maintaining the DA Form 3988-R, DA Form 7170-R, and DA Form 2405. They also must maintain a file of the manufacturer's operating manuals for all equipment. When a piece of equipment arrives, it should contain two operator's manuals. The FSS, TISO, or contractor keeps one copy in his files and gives the other copy to the DEH. AR 30-1, Chapter 5, gives information on what to do if you need operator's manuals. The same information for the TISO is in AR 30-18, Chapter 4.

DEFECTIVE NEW EQUIPMENT

When equipment does not work properly the FSS, TISO, or contractor must complete an SF 368. Guidance for completion of the QDR can be found in AR 30-1, AR 30-18, AR 702-7, AR 702-7-1, and DA Pamphlet 738-750. The QDR is used for the following:

- To get disposition instructions for credit, replacement, or repair of defective equipment.
- To stop repeat shipments of defective equipment.
- To get corrective action.
- To improve equipment performance and maintenance.

ORDERING

Before ordering equipment, check the appropriate CTA 50-909 or CTA 50-970. Once authorization has been established, obtain the required certification from the DEH, as stated above, prior to submitting your requisition.

PART THREE

TROOP ISSUE ACTIVITIES, STORAGE, TRANSPORTATION, AND HANDLING OF CLASS I SUPPLIES

CHAPTER 12

TROOP ISSUE SUBSISTENCE ACTIVITIES IN GARRISON

GENERAL

The TISA is responsible for requisitioning, receiving, storing, issuing, and accounting for subsistence until it is issued to an authorized customer. The TISA issues to units, organizations, and food service facilities. The TISA may issue in bulk to a ration breakdown point for further breakdown and issue to units.

The TISA may also issue to medical treatment facilities, federal government activities outside the DOD, state government agencies, disaster relief agencies, central food facilities, and satellite installations.

The TISA also maintains charge sales accounts for numerous nonappropriated fund activities such as NCO or officer clubs and child care centers. AR 30-18 provides detailed guidance for the operation of TISAs.

SELF-SERVICE OPERATIONS

Self-service subsistence supply operations allow an authorized representative to select subsistence items directly in a setup similar to a grocery store. Currently, there are two different types of self-service operations. They are the maximart and the minimart. The maximart stocks both perishable and semiperishable items. The minimart stocks only perishable or semiperishable items. Self-service operations are discussed below.

Self-service operations may vary depending on the number of facilities supported, accounting procedures, the physical layout of the TISA, refrigeration capabilities, number of personnel available, and transportation used to pick up or deliver subsistence. There must be enough space to keep areas secure (do not give shoppers free access to your warehouse), to make items accessible, and to provide adequate display space. Adequate refrigeration equipment must be available if perishables are stocked. Normally customers shop using a DA Form 3294-R, a DA Form 3161, an automated shopping list, or any other locally approved paperwork.

Since there are local differences in the way self-service operations are run, each TISO develops an SOP to fit its operation. Supported units and TISA personnel must follow the SOP. If they become lax in following it, problems occur. Make sure all customers have a current DD Form 577, authorizing them to receipt for subsistence. Prepare two issue documents--one for perishables and one for semiperishables. The issue document must identify the customer and give the date, NSN, item name, item quantity, and unit price. Both the customer and the TISA employee must sign the issue document to verify its accuracy. Pilferage and theft can create serious problems in a self-service operation. Strict checkout procedures can help protect supplies. Inspect all opened packages or cases for quantity and type of items during checkout. Items can be hidden in field jacket pockets. Use two employees to check out

customers if at all possible. Do not forget that employees as well as customers may be guilty of pilferage.

RATION BREAKDOWN POINT

A Class I RBP may operate at installation, theater, corps, division, brigade, or even battalion level. Most often, a Class I point is set up in the field and run by units with a Class I supply mission to support a large exercise. The TISA SOP should clearly divide responsibilities between the TISO and the Class I officer or NCOIC. When a TISA issues subsistence in bulk to support field operations, the Class I officer is responsible for processing unit requests for rations and for reporting present-for-duty strengths to the TISA. The Class I point consolidates unit requests for rations into one for each issue cycle and forwards the consolidated request to the TISA. The TISA then issues the items to the Class I point in bulk. The Class I point breaks down and issues the subsistence to the supported units. The Class I point also receives present-for-duty strengths from supported units and provides the TISA a consolidated report. Detailed guidance for the support of field operations, required reports, and accounting procedures are contained in AR 30-18, AR 30-21, and FM 10-23.

STOCKAGE CRITERIA

Subsistence items authorized for stockage are listed in the Federal Supply Catalog, C8900-SL. Items stocked by the TISA include those listed in SB 10-260 or SB 10-263 as revised by the installation menu board. The TISA must consider volume of demands when deciding which items to stock. Not only is perishable and semiperishable storage space limited, but the TISO operates within obligation authority limitations. Excess stock on hand ties up critical dollars of buying power. Dining facilities operating under ARCS and nonappropriated fund customers can order items listed in C8900-SL but not kept in stock. Medical treatment facilities are also authorized to request items peculiar to their needs.

MANAGEMENT OF SUBSISTENCE STOCK

To manage stock effectively, the TISO must have accurate and detailed supply transaction records. To provide these records the TISO maintains DA Form 3293-R for each specification item stocked. This form provides a summary of demand and consumption which is used to assist in determining reorder quantities. AR 30-18 provides details on the purpose and maintenance of the DA Form 3293-R.

REQUISITIONING OBJECTIVE

The TISO must complete a requisitioning objective for each subsistence item stocked at the TISA. The DPSC publishes requisitioning schedules in a series of handbooks. If you are in an oversea TISA, refer to DPSC Handbook 4235.1. DPSC Handbook 4235.2 provides guidance for CONUS TISAs. Computation of the RO is detailed in AR 30-18, Chapter 6. When the monthly reorder inventory shows that the quantity of stock on hand plus stocks due in is less than the RO, you should order more of that item. Request the difference between the quantity on hand and due in and the RO. Post each order to a locally maintained document register.

RECEIPT

Supplies shipped to the TISA are delivered by commercial or government carriers. All items in a shipment should be listed on a receipt document. DPSC-furnished perishable subsistence received in CONUS is documented on standard multiuse DPSC Form 2005-2. Semiperishable subsistence is documented on DD Form 1348-1. DPSC contract-purchased subsistence is documented on SF 26. Personnel receiving supplies must sign (full signature) and date all receiving documents.

Stocks must be inspected carefully as they are unloaded. A checker counts each item as it is

received. The TISO must ensure this tally is correct. Supplies damaged in transit, shortages, and overages should be reported according to procedures in AR 30-18.

The veterinarian inspects all perishable subsistence as it is unloaded. He will also inspect semiperishables on request.

Each receipt document is posted to DA Form 272 in the warehouse, using a voucher number provided by the control branch. The storage location is recorded to assist in issues or inventories.

When receipt procedures are completed, all documents are sent to the TISA control branch. The control branch posts the quantity received to the DA Form 3293-R. See AR 30-18, Chapter 7 for complete details on receiving operations.

INVENTORY AND ADJUSTMENT

The TISO is responsible for the conduct of all required inventories within the TISA. A good inventory validates the operation. A bad one will give you a chance to improve by resolving discrepancies, identifying the causes of gains or losses, and taking any necessary personnel actions. An inventory may uncover training needs, or it may indicate a need for disciplinary action. If disciplinary action is needed, it may also be necessary for the TISO to seek relief from pecuniary liability. Required inventories are described below.

The Annual Accountability Inventory

This inventory is conducted between the 26th and the last calendar day of the October accounting period.

The Quarterly Accountability Inventory

This inventory is conducted between the 26th and last calendar day of January, April, and July. A scheduled accountability inventory may be deferred up to 31 days by the TISO when--

- Transfer of accountable officers has been accomplished within 31 days prior to the scheduled inventory. The next inventory period would cover four months.
- When transfer of accountable officers will be accomplished within 31 days after the scheduled inventory. The next inventory period would cover only two months. The installation commander or designated representative may approve the conduct of an accountability inventory at other times than those stated above.

Reorder Inventory

The reorder inventory is conducted monthly.

Price Change Inventory

The price change inventory is conducted after all issue transactions have been completed for each accounting period.

Book Inventory

A book inventory is conducted during the months when an accountability inventory is not taken. The book inventory is computed after all vouchers have been posted to the Voucher Register and General Control as of the last day of the accounting period. The book inventory represents the book dollar value of all subsistence on hand.

Transfer of Accountability Inventory

This inventory is conducted when there is a change of accountable officers.

PREPARATIONS FOR THE INVENTORY

Since an accountability inventory requires two independent teams to perform the count, the TISA may be closed during this type of inventory. The TISO should coordinate this with the installation commander or the director of logistics. Although

it may not always be possible to shut down operations completely, the TISO should at least suspend issue of subsistence, and try to schedule receipt of supplies so that they will not arrive during the inventory. However, if supplies arrive during the inventory, they must be accepted. AR 30-18 explains how to account for these supplies.

The teams are briefed before the inventory begins. Each team must operate independently. They must not compare counts. They must check all the data listed on the count cards. The briefer should impress on the clerks the importance of getting a good count. If they get it right the first time, they will not have to do it again.

Provide the teams with tally sheets for each item to be inventoried. TISAs may have automated inventory listings provided on a computer printout. The tally sheet should include the item nomenclature, NSN, price, and unit of issue. Make sure the tally sheets do not include an anticipated quantity on hand.

CONDUCT OF THE INVENTORY

Each count team consists of a counter and a recorder. Inventory teams should inventory by moving from one location to the next in sequential order. By inventorying items listed on the stock ledger sheet, items stored in more than one location could be missed. The counter tallies items at each stock location and makes sure that each item fits the description on the tally sheet. He may accept quantities marked on unopened cartons or sealed containers, but he must count loose stock. The recorder marks the count on the tally sheet.

The count team should report any storage conditions which appear to be unsafe.

They should also report storage practices which make the inventory more difficult. Here are some examples:

- Boxes not marked.
- Markings not clearly visible from the aisle.
- More than one type item in the same container or on the same pallet.
- More than one open box of the same stock.
- Same stock stored at many locations.

If any items should not be counted, these items are separated and clearly marked. Procedures will vary depending on the type of inventory being performed and the physical layout of the warehouse. The TISA SOP should address differing situations and be updated as changes occur.

RECONCILIATION AND POSTING

Each type of inventory requires specific reconciliation and posting procedures. See Table 12-1 (page 12-5) for an explanation of the types of inventories. Specific instructions for inventories are in AR 30-18, Chapter 10.

VOUCHER REGISTER AND GENERAL CONTROL

The VRGC is the TISA's formal record of accountability. A person in the control branch of the TISA maintains the VRGC. He records all issues, receipts, inventories, and adjustments to the VRGC. The VRGC is closed at the end of each month. The TISO verifies the balance and takes whatever management action is necessary to resolve any discrepancies. At the end of each quarter, the VRGC is closed out with an accountability inventory. At the end of each month during which an accountability inventory is not held, the VRGC is closed out with a book inventory. The control section must ensure that all supply transactions at the TISA are accurately recorded and posted, so the VRGC will balance.

ORDERS FROM THE DINING FACILITY

The TISO provides the FSS an order form listing all the items. This list may be on DA Form 3294-R or it may be a computer printout shopping list. The FSS may order items from the list, or he may write in other items from FSC C8900-SL if they are stocked by the TISA. Special orders for nonstocked items must be submitted in the time frame established by the TISO.

Table 12-1. Types of inventories

ACCOUNTABILITY INVENTORY

- Have each team record the count on the count sheets.
- Reconcile quantities. Recount if necessary.
- Post quantities to DA Form 3293-R. Compute the RO, and reorder if necessary.
- Price and extend quantities.
- Post inventory value to the DA Form 3295-R.
- Prepare DA Form 4170-R to adjust inventory for any difference between value of physical count and value listed in the ledger (previous inventory value plus receipts minus issues). If unidentifiable loss exceeds 0.5 percent, the TISO must initiate a report of survey.

REORDER INVENTORY

- Do not perform a reorder inventory in an accountability inventory month.
- Inventory only those items that have reached their reorder point.
- Post physical count to DA Form 3293-R.
- Compute RO, and reorder as necessary.

PRICE ADJUSTMENT INVENTORY

- At the beginning of the month, after opening the DA Form 3295-R with a book or accountability inventory, perform a price adjustment inventory.
- Prepare a change to the TISA price list, reflecting price changes from FSC C8900-PL and vendors' invoices.
- Count quantity of each repriced item.
- List on-hand quantities and price changes on DD Form 708. Figure the total dollar value change to the inventory.
- Post the adjustment to DA Form 3295-R.

BOOK INVENTORY

In months when an accountability inventory is not required, the TISA closes out DA Form 3295-R with a book inventory. The book inventory is posted to DA Form 3295-R by subtracting the credits (such as issues and adjustments) from the debits (such as receipts and inventory). The result is posted as a credit and becomes the current inventory.

ISSUES TO THE DINING FACILITY

Supported dining facilities send personnel to receive supplies in accordance with the schedule of ration issues. Clerks in the issue section should know their authorized customers. No one should be permitted to sign for rations without a DD Form 577. Identification cards should be checked if the clerk is not sure.

The issuing clerk should observe the loading of unit supplies and must verify that the actual quantity issued is entered in the supply action column. The dining facility representative signs too. An authorized signature on the DA Form 3294-R or other issue document releases the TISA from accountability for the items of subsistence listed on the form. Once the dining facility representative signs for the rations, the TISO considers them as being consumed.

When the TISA issues an item, two accounting actions must be taken. First, the TISA receives credit for the monetary value of the item. Also, the dining facility's account (under ARCS) is debited for the value. Completed issue slips are reviewed and posted to the DA Form 3980-R and DA Form 4538-R.

DIRECT VENDOR DELIVERIES

Some subsistence items are locally purchased and delivered by vendors directly to dining facilities or other authorized users. Dairy products and bakery items are usually handled this way. Personnel at the RBP or the requesting units provide the TISO with information he needs for these actions.

The RBP unit or dining facility requests vendor-delivered items on a form designed by the TISO. This may be DA Form 3915, DA Form 3161, or another locally authorized form.

Using the requests, TISA personnel prepare a DA Form 3915 or other mutually agreed upon form for each vendor. The TISA gives copies 1 and 2 to the vendor and keeps copy 3.

When a vendor delivers supplies to a requesting unit or facility, the FSS or his representative signs two copies of DA Form 3915 and receives a vendor delivery ticket. After deliveries are completed, the vendor returns copy 1 of the form to the TISA with a duplicate delivery ticket and keeps copy 2

of the form. Signatures on copy 1 are checked for accuracy against those kept at the TISA.

The quantities listed on copy 1 are posted to the quantity received column of copy 3 and both copies are price-extended and totaled. Totals are then posted to the required accounts and records as stated on page 12-6. AR 30-18 describes some alternative procedures.

THE DINING FACILITY ACCOUNT CARD

The TISO and the FSS each keep track of the dining facility's monetary status on DA Form 3980-R. Since the dining facility earns funds based on the actual headcount, each diner increases the facility's monetary allowance. Most issues from the TISA are debited against that balance. (See AR 30-18 for exceptions.) Three times a month (on the 10th, 20th, and within five working days after the close of the month) the TISO and the FSS reconcile account cards. At the end of the month, if the account is not within tolerance (plus or minus 3 percent), the TISO will take action as described in AR 30-18.

Crediting the Account for Meals Fed

The FSS figures his monetary allowance by multiplying his actual headcount for each meal by the meal value portion of the BDFA. The FSS also reports the number of meals fed to the TISA on DA Form 2970. At the TISA, a subsistence supply specialist in the control branch uses the figures from DA Form 2970 to compute the facility's monetary allowance and posts it to the TISA copy of the DA Form 3980-R.

Debiting the Account for Subsistence Issued

Prices of all items issued are listed on the shopping list. A copy of the form is sent to the dining facility with the supplies. Both the FSS and the subsistence supply specialist use information from the completed form to post the dollar value of each issue as a debit to the account.

Debiting the Account for Direct Vendor Deliveries

When DVD items are delivered, a dining facility representative signs for them. When the subsistence supply specialist in the control branch of the TISA receives the signed direct vendor delivery form, he posts the dollar value of the transaction to the account. He must then send a priced and extended list of vendor-delivered items to the dining facility so the FSS can post his copy of the account.

TURN-INS

The TISO informs the FSS when he may turn in excess subsistence on the schedule of ration issues. The TISA should receive turn-ins at least twice a month. All turn-ins are inspected by the veterinarian before they are accepted. The signature of the receiving individual on DA Form 3161 indicates the TISA has received the supplies. At the control branch, the DA Form 3161 is posted to the DA Form 3980-R and the DA Form 4538-R. The posting to DA Form 3980-R credits the dining facility account for the value of the turn-in. The posting to DA Form 4538-R debits the value to the account of the TISA.

ISSUES TO A CHARGE CUSTOMER

Some food service operations may be allowed to request subsistence on a charge sales basis. Nonappropriated fund activities are issued food in this way. Make sure the requester is on the list of authorized customers before you issue the items requested. Complete the supply action column of the request and sign it. After the customer has signed, it will serve as a valid receipt. Have it posted to the DA Form 4538-R for that customer.

FORCED ISSUE

To prevent a loss to the government through deterioration or spoilage, the veterinary officer may recommend that the TISO force-issue certain subsistence items. The TISO coordinates with the FA to determine the facility, meals, and the quantities of items to be issued. The issue factors in SB 10-260 are used as a guide for computing the quantity to be issued. The cost of forced issues is charged to the installation stock fund and are not charged to dining facility accounts. Medical treatment facilities are exempt from forced-issue items.

PACKAGED OPERATIONAL RATIONS

The TISO orders operational rations from DPSC at Philadelphia, Pennsylvania and maintains a reserve stock to support customers. The first in, first out principle should be used to issue stocks for training. Supported units order packaged operational rations on DA Form 3161 or DA Form 3294-R. The TISO posts issues and turn-ins by customers to DA Form 5298-R as described in AR 30-18.

MEDICAL TREATMENT FACILITIES

The TISA supports hospitals for routine requirements. Medical facilities submit requests on their requirements on DA Form 3161 along with a statement of availability of funds. Issues are handled as charge sales. Requests for brand name items must be submitted to the commissary. If there is no commissary or requested items are not available through the commissary, the medical facility may ask the TISA to provide a like item. It should submit a separate request for each of the following--

- Perishable items stocked by the TISA or listed in FSC C8900-SL.
- Semiperishable items stocked or listed in FSC C8900-SL.
- Items to be procured locally (not listed in FSC C8900-SL).
- Items designated by the TISO for direct vendor delivery (such as milk and bread).

OTHER SERVICES

Units other than Army units that have established an interservice supply support agreement for Army subsistence are also authorized TISA customers. Units normally order supplies on DA Form 3161. Each request should include a fund citation provided by the FAO to the ordering unit which identifies funds authorized to pay for the order. Issues to dining facilities operated by other services are processed as charge sales. They are posted to a DA Form 4538-R and reported on DA Form 2969-R as described in AR 30-5. Support to personnel of other services who subsist in Army dining facilities is reported on the DA Form 2969-R so that reimbursement can be made at HQDA level as specified in AR 30-5.

CHAPTER 13

INSPECTION, STORAGE, TRANSPORTATION, AND HANDLING OF CLASS I SUPPLIES

GENERAL

The TISA loses accountability for subsistence when it leaves the warehouse. Warehouse personnel must supervise loading and unloading of vehicles carrying subsistence, and must be able to read and understand transportation documents. It is important that they be familiar with all types of carriers and know how the transportation system works. Food service personnel must inspect food supplies for identity, amount, and condition as they receive them.

SECURITY

Subsistence supplies must be protected to prevent loss by pilferage or theft during receipt, storage, and issue. Pilferage involves the stealing of small quantities of subsistence. Theft involves the stealing of large quantities of subsistence. Local regulations, past experience, and the degree of susceptibility to theft and pilferage must be considered when planning your security program. The installation provost marshal can assist you with your program. Pilferage can be controlled to some extent by such deterrents as training programs and inventory controls. Theft can be controlled by active physical security measures. Some of these measures are:

- A material control system which includes inspection of delivery and vendor vehicles.
- Quick investigation of losses.
- A key control program.
- Active security measures for highly pilferable items.
- Periodic trash removal rather than removal just at the end of the day.
- Empty containers inspected before removal.
- Cardboard boxes flattened.
- Minimum numbers of open and broken cases of subsistence.
- Physical security of windows and doors.
- Personal packages prohibited in storage area.
- Access to storage area limited to persons performing authorized duties.
- Personal lockers separate from food storage.
- Packaged operational rations locked up when not observable.

SAFETY

Accidents cost money through a loss of man-hours and damage or destruction of food and equipment. The resulting shortages of personnel, food, and equipment could also mean a shortage of food to the troops. Safety must be included in all scheduled training (see Chapter 6). Safety inspections must be a part of your regular routine. The type of building construction and local safety regulations affect your program. The installation fire marshal and a representative of the facilities engineers can help you in these areas. The general rules for safety in Chapter 8 should be included in your program.

INSPECTIONS

Subsistence supplies are inspected and reinspected from the time they are received until they are consumed. Inspection ensures that only food which is fit for consumption is issued or used in facilities. Several people are directly involved in inspection, but anyone who knows of spoiled food or improper storage or handling should report it to his supervisor.

Veterinary Service Personnel

VSP inspect all perishable subsistence as it is received at the TISA. VSP also inspect semiperishables at the request of the TISO. VSP inspect all subsistence that is being turned in by a customer or transferred from another activity.

They will inspect all fresh fruits and vegetables daily and all other perishables at 30-day intervals. Packaged operational rations are inspected according to frequencies established in DPSCM 4155-2. They will also inspect subsistence being transferred to another supply activity to ensure that it is fit for consumption. VSP also inspects carriers for sanitation and temperature requirements. If food has deteriorated or does not meet contract specifications, the VSP will recommend a course of action. They may recommend that items be force-issued, used for animal feeding, or destroyed. Besides inspecting the food, VSP inspect the packaging to ensure it is able to protect the food during storage and movement. Veterinary inspection is described in detail in AR 40-656, AR 40-657, and FM 8-30.

TISO

The accountable TISO or his authorized representative will inspect all subsistence items before they are accepted. This inspection will ensure that the items are received in good condition and in the authorized quantities specified on the shipping document.

Food Service Sergeant

The FSS or his authorized representative inspects all subsistence supplies before they are accepted. If the FSS feels that the supplies are not fit for consumption, he will request a veterinary inspection. In addition the FSS should ensure that forced issues are handled correctly and that identity, amount, and condition are checked.

Forced-issues. Forced-issue items must be issued at once to prevent loss to the government. The FSS must take force-issued items, but only in quantities that can be used before the next issue. Before force-issued perishables are stored, remove and discard any spoiled or damaged items.

Identity check. Before you accept any items issued to you, check to be sure the items are those that you ordered or authorized substitutions. Return unordered supplies to the delivery source.

Amount check. Check the amount issued by counting or weighing the items. When you receive an amount less than ordered, enter only the AMOUNT *RECEIVED* on the ration issue slip or other document that comes with the food. Let the issuing agency know at once. If you receive more than you ordered, return the extra supplies to the subsistence supply activity.

Condition check. When food is delivered, check its color, odor, and condition. If you believe that the food is not safe to eat, make a note on the issue document, and ask VSP to check the food. DO NOT throw out or destroy food until VSP tell you to. Report the amount of food you believe to be unfit on a DD Form 1608. VSP and the TISO will advise and assist you. ARs 30-1 and 30-16 provide details on preparing a DD Form 1608.

TYPES OF INSPECTIONS

The types of inspections are visual, sampling, and full. They are described in this paragraph.

Visual

In visual inspection, the inspector looks at the outside of the supplies or their containers to see if there is damage or deterioration. Damaged containers (dented cans, broken boxes) are a sign of mishandling. Check bags and boxes of material that could be infested for insects along seams and under flaps. Finding damaged or infested containers is a good reason to request a veterinary inspection. Unusual smells may also be a sign of spoilage. The visual inspection is the type usually performed by food service and supply people.

Sampling

Sampling inspections are usually performed by VSP. The inspector chooses a number of units at random and inspects them thoroughly. If many of the samples are damaged or deteriorated, VSP will perform a full inspection. The TISO issues items for veterinary sampling on DA Form 3161 and posts them to the VRGC as an identifiable loss. (See AR 30-18.)

Full

In a full inspection, VSP thoroughly examine all units of a particular item or shipment. Those which are damaged or deteriorated are set apart and the TISO is advised on the recommended disposition. Full inspections should not be conducted unless they are absolutely necessary.

INSPECTION OF DETERIORATION OR DAMAGE

Inspections for deterioration or damage must be conducted for TISA and dining facility subsistence. These inspections are discussed in this paragraph.

Troop Issue Subsistence Activity Inspection

TISA subsistence is inspected as described below.

Inspecting canned goods. Individual cans should be inspected whenever there is a reason to think they may be damaged. If boxes are broken or bent, they should be opened, and each can should be inspected. Cans that have been stored for long periods of time or exposed to extreme temperatures should be looked at too. Cans that are leaking or dented should be inspected by the veterinarian.

Inspecting other semiperishables. Semiperishable subsistence will spoil if it is mishandled, improperly stored, or stored for long periods. Boxes, sacks, bags, and other containers should be looked at closely. The inspector should look for signs of insects or rodents, color changes in contents of jars or clear bags, moisture damage oh boxes or bags, and damaged containers. If any of these signs are present, call VSP.

Inspecting fresh fruits and vegetables. Fresh fruits and vegetables should be inspected when they are received and every day while they are in storage. The inspector should keep these points in mind:

- Size is not a good sign of quality. Many vegetables become woody or hollow as they age.
- Appearance may be deceiving. Fruits and vegetables that have a pretty surface may be rotten inside. The best way to determine their quality is to taste them.
- Slightly damaged fruit or vegetables should be issued right away if they are going to be used at all. Once deterioration begins they will deteriorate quickly.
- Before you store fresh fruits and vegetables, remove those that are spoiled or damaged. Store those which require refrigeration, leaving room for air to circulate. Refer to DOD 4145-19-R-1 for recommended storage temperature and handling.

(NOTE: *Direct storage of foods on refrigerator shelves is prohibited. Use original containers or place items in a suitable storage container. Only unpeeled, hard-skin fruits and vegetables may be stored uncovered.)*

Inspecting frozen subsistence. Frozen items should be frozen solid when they are received. The packages should be checked for ice on the sides, top, and bottom. Ice on packages means the subsistence has thawed and been refrozen. It should be checked by the veterinarian.

Dining Facility Subsistence Inspection

When picking up rations at the supply activity, personnel should check all items for signs of possible contamination. If rations are delivered to the dining facility, check them immediately upon receipt. Make sure that there is enough refrigeration, freezer, or dry-storage space available for foods received. Food service personnel must follow proper food inspection procedures. They should know how to check food quality, check for proper temperatures, and detect potentially damaged goods. Food service personnel must ensure that they inspect the following items as described below.

Meat and poultry. Check meat and poultry to see if they are the same as those listed on the issue slip. Inspect meat and poultry for odor, color, damage, and slime. The odor should be mild, the color normal. There should be no damage or slime.

Milk and milk products. All products should be checked for proper temperature and condition.

The temperature of the milk and milk products brought to your dining facility should not be above 45° F. Reject broken or leaky containers. Butter should have a uniform color, firm texture, and be free of mold or specks. Cheeses should be checked for uniform color and unbroken packaging. Bottles and cartons should be free of grease or dirt. Bulk milk containers must be delivered with both seals in place and with all rubber or synthetic parts protected from contamination. Check the expiration date stamped on the package.

Bread and baked products. Check the date code on baked items before accepting them. Your FA will provide you with a code used by the vendor. Post it so that the person who is checking can refer to it easily.

Dry stores. Check dry stores, such as cereals, flour, and sugar, for signs of exposure to grease or moisture or contamination from insects, rats, or mice. Return open containers to the source of supply unless it is clear they were opened during ration breakdown. If a container is discolored, open it and make sure the food is not damaged or spoiled. If the outside of the container is damp or moldy the inside contents may also be moldy.

Canned goods. Check the condition of the container in which the cans are packed. If the container is crushed or torn, open it and check the cans for holes and rust. Do not accept damaged cans. Return them to the source of supply and ask for replacements. Check for swollen tops or bottoms, leaks, flawed seals, dents, or rust.

CAUTION

A can that seems undamaged on the outside may still be contaminated. If, when the can is opened, the contents appear abnormal in color, odor, or texture; are foamy or have a milky-colored liquid--DO NOT USE THEM. DO NOT EVEN TASTE THEM!

Fresh fruits and vegetables. Check fresh fruits and vegetables for mold, wilt, rot, and other defects. Remove the bad items, and store the rest. Fresh fruits and vegetables should also be checked for signs of insect infestation. *DO NOT* remove them from the shipping container unless they are needed within 24 hours. When vegetables (except onions) are removed from the shipping container, they should be trimmed, washed, drained, placed in a covered container, and refrigerated as quickly as possible. Never allow vegetables, except potatoes, onions, and garlic, to stand at room temperature for any length of time.

Frozen Subsistence. Frozen items should be frozen solid when they are received. The packages should be checked for ice on the sides, top, and bottom. Ice on packages may indicate that the subsistence has thawed and been refrozen. It should be checked by VSP. When they have defrosted, they must be used right away. They should never be refrozen. Freezer temperatures should be checked at least once a day.

UNSATISFACTORY SUBSISTENCE ITEMS

If subsistence does not meet the terms of its purchase contract, if it has been badly packaged, or if it has been improperly stored or mishandled, it should be reported according to the procedures in AR 30-16. Report shipment-related damage as described in AR 30-18, Table 7-2.

TISA STORAGE

The main cause of waste in storing food is poor management. Subsistence supplies should be stored so they are accessible and secure. The warehouse manager of the TISA should maintain a stock locator system and plan for use of space. He will be responsible for the security of stocks from theft and damage.

The TISO should have a planograph for each floor of every warehouse. Each floor will have short rows and long rows (Figure 13-1, page 13-5). Each short row meets each long row at a single grid square (Figure 13-2, page 13-6). Due to safety and sanitation requirements, the plan must be approved by the DEH.

Each single grid square represents storage space for one 40- by 48-inch pallet with 6 inches on each side for overhang. If pallet racks are used, pallets may be stacked to a number of levels.

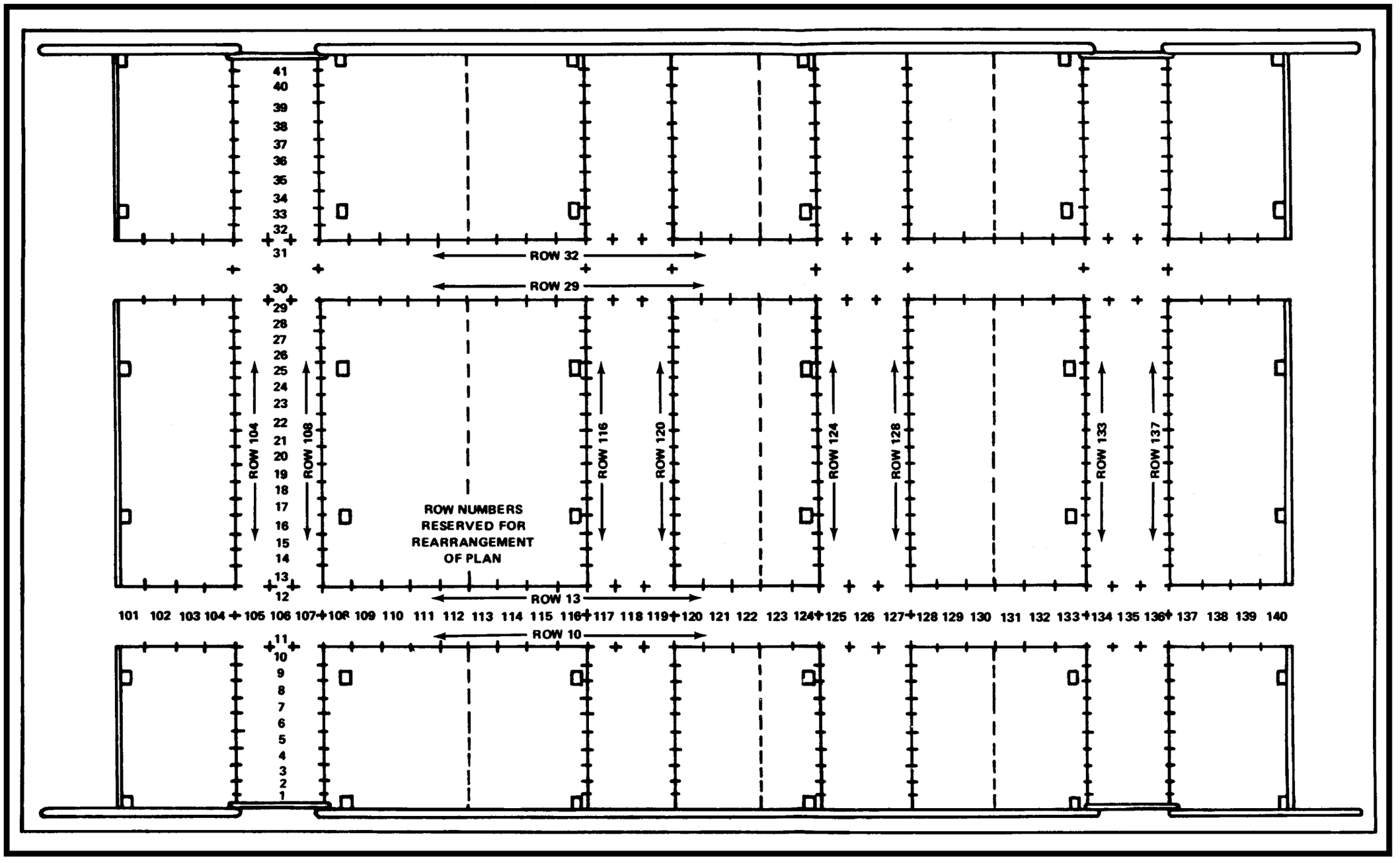


Figure 13-1. Typical planograph for dry bulk storage area

The warehouseman needs information to help him locate a particular pallet. He must know what building it is in, which floor it is on, at which grid square, and at what level. A nine-digit code is used to locate warehouse stocks. Figure 13-3 (page 13-6) shows how to read the code.

This code may be changed to meet the needs of your operation. For instance, a one-floor warehouse would require only an eight-digit code, as there would be no need for a floor code. Code stock not stored on pallets by bin or drawer.

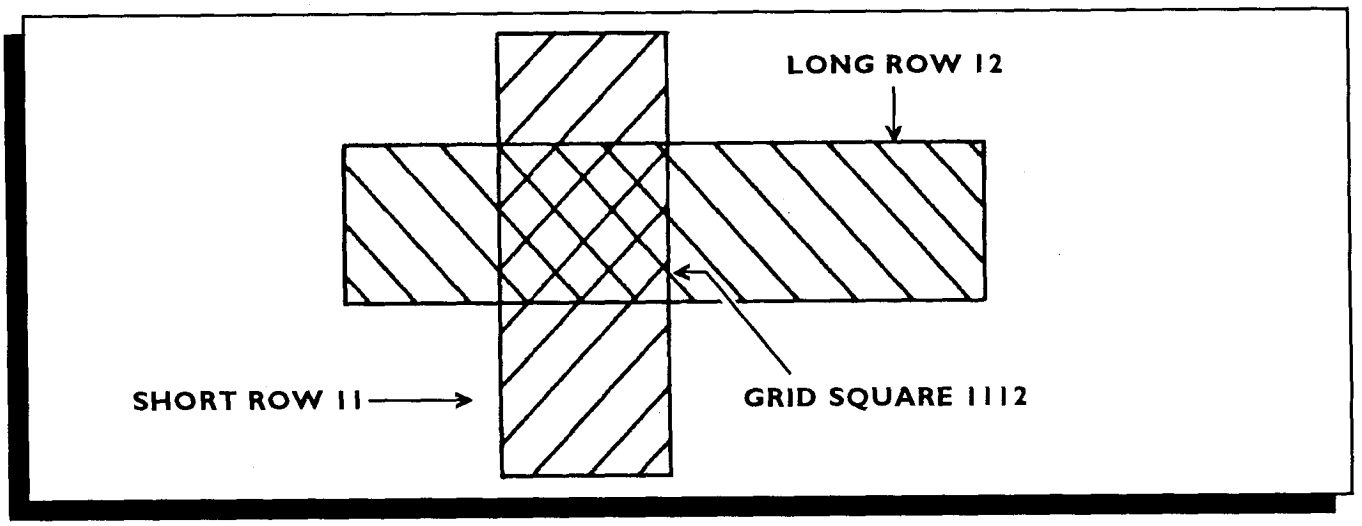


Figure 13-2. Planograph grid square

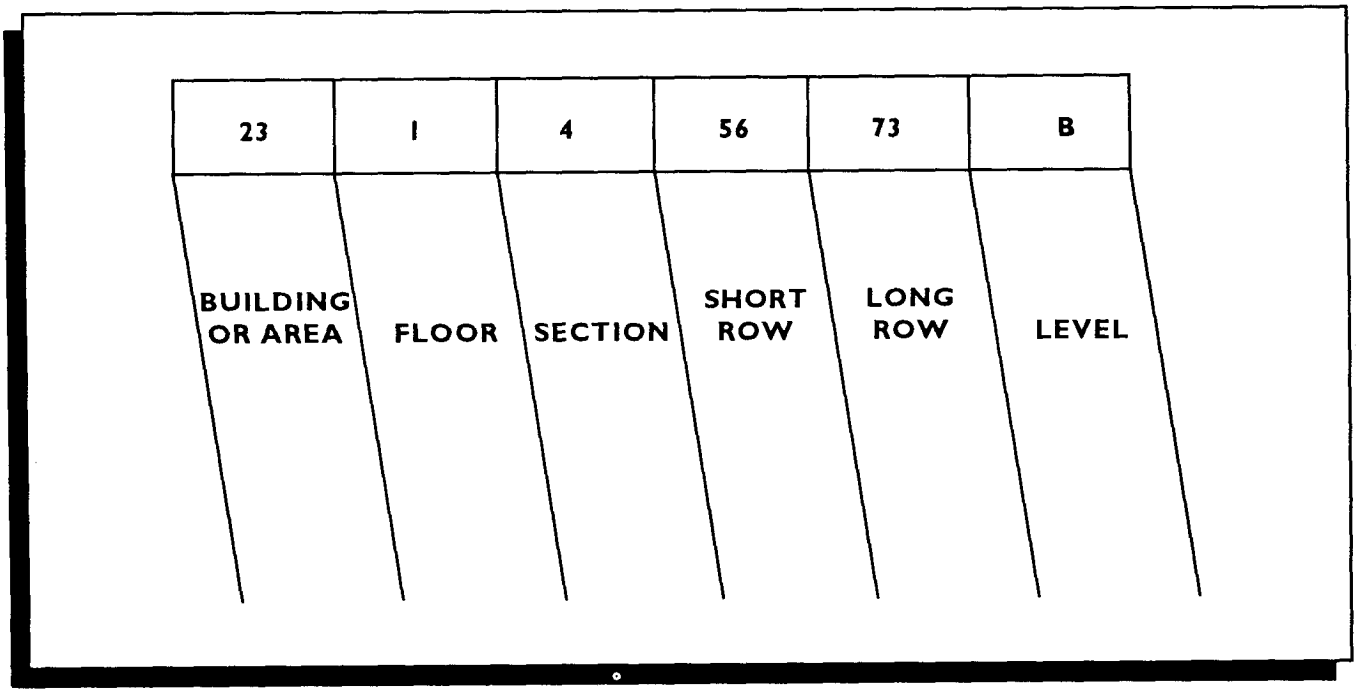


Figure 13-3. Reading the stock location code

The TISA should receive an advance copy of the shipping document before each shipment arrives. This copy is used to plan where each item on the shipment should be stored. Check the stock locator file, and mark the planned location on the shipping document. If the shipment is a large one, physically check the planned location to ensure that enough space is available.

ACCESSIBILITY

When establishing a layout plan for a new warehouse or supply point, remember that ease of issue is of utmost importance. Store stocks in the same order that they are listed on the preprinted issue slip if material will be released with the issue slip. This will make it easier for the stock picker to follow a direct route in selecting items. It will save man-hours, fuel, and wear on MHE. If you are having problems with stock-picking in an existing warehouse, you may consider having issue documents retyped so that the list is in the same order as the rows of supplies. If this is impossible, urge stock pickers to note locations and plan routes before they start. If your warehouse issues items on punch cards prepared as MROs, arrange the card deck in warehouse-row-sequence before selection of stocks.

MARKING OF STOCKS

All stocks must be clearly marked. When items are received, check for date of pack or expiration date on cartons. Date of pack is the date the units were placed in cartons. Expiration date is the date by which they must be used. If newly arrived items are not properly marked, you should have them marked at the receiving area before they are stored. Each pallet lot should be marked with the date of receipt. This will allow stock pickers to use the first-in, first-out principle. If you color code pallet lots by month of receipt, you will be able to identify items in need of rotation or condition classification. Make sure to check date of pack and expiration date as well as date received.

LOCATOR RECORD ACCURACY

Sometimes you may not be able to issue an item that you have on hand either because it has been stored in the wrong place or because its storage location has been recorded wrong. If you do not keep a record of quantity on hand in the warehouse files, you may not know whether a materiel release denial is the result of bad location records or a zero stock balance. You can find out by checking with the control branch of the TISA. If there is a balance on hand, you have a locator problem. Find the stock and adjust location records. You should also perform a location survey before each inventory. A location is a comparison of the stock in the warehouse with the data recorded in the stock locator file. There is a locator card for each occupied location. Matching the cards with the stock will turn up any discrepancies in location, unit of issue, condition code, stock number, physical security and pilferage code, or recorded shelf life. Use this information to update stock locator files.

STACKING OF ITEMS

Most subsistence supplies arrive at the appropriate warehouse on pallets 40 to 48 inches. Pallets permit the stacking of items in an easily handled unit load. The supplies are arranged on the pallet in a standard pattern based on the size and shape of the item so that all the pallet area is used with as little as possible left over. Supplies may be damaged by the MHE used to move the loaded pallet. Other factors to consider when stacking the pallets are as follows:

- The height of the stacks is limited by the stability of the product and its resistance to crushing.
- Floor loads must reconsidered. For example, concrete floors can support more weight than wooden floors.
- Below an automatic sprinkler system, when the height of the stack is 15 feet or less, there must bean overhead clearance of 18 inches. With heights of more than 15 feet, there must be an overhead clearance of 36 inches.

- When there is no automatic sprinkler system, there must be a clearance of 36 inches regardless of the height.
- There must be an 18-inch clearance around light fixtures and heating fixtures.
- Material cannot be stored within 36 inches of a fire door opening or 24 inches of a substandard fire wall.
- Bagged items and those needing fumigation and insect control should be stored away from walls and corners to leave room for fumigation and cleaning.

LOOSE ISSUES

Cases of subsistence that have been opened to issue less than a full case should be stored in a loose-issue area to be issued first. Damaged items that still have value can also be stored in this area. Rack steel shelving, drawers, or bins may be used to store these small quantities, crushable containers, and loose cans.

PRESERVATION OF SEMIPERISHABLE SUBSISTENCE

Semiperishable subsistence is not as likely to spoil as perishable subsistence. However, the safe storage period varies depending on such elements as temperature, humidity, care in handling, protection from weather, quality of the food when received, and packing. Safe storage periods become very uncertain at extremes of temperature. FM 10-23, Appendixes D and E list approximate keeping times for semiperishable A Ration items and B Ration components.

Insects (Roaches, Flies, Weevils, Moths)

Foods stored at temperatures between 60° F and 90° F are especially attractive to insects. Infested supplies should be segregated until a veterinarian can determine if they should be used or destroyed. Roaches and flies not only contaminate the subsistence but spread disease as well.

Rodents (Rats and Mice)

Rodents physically destroy food and contaminate it with their excreta and hair. The best method of control is to prevent entry of these animals.

Freezing

Dry products such as grains, cereals, and dehydrated foods are not usually damaged by freezing. If foods contain relatively large amounts of water, freezing may soften the consistency and texture, and the appearance may suffer. Emulsions such as canned cheese and butter, prepared mustard, and mayonnaise may separate because of freezing but can still be used.

Heat

A high-storage temperature encourages bacterial growth, mold growth, and insect infestation. Canned foods spoil more quickly, flour and related products are more likely to become insect-infested, and some items become rancid.

Humidity (Moisture)

High humidity speeds the growth of bacteria and molds, promotes insect infestation, and causes mustiness in flour, rice, and similar food. High humidity also causes items like sugar and salt to cake and become hard and leads to rust forming on cans.

Light

Products packed in glass or transparent containers may be damaged by light. Exposure can cause color changes and affect the flavor of foods containing edible oils and fats.

PRESERVATION OF PERISHABLE SUBSISTENCE

Perishables must be refrigerated. This eliminates some of your keeping problems since the refrigerator protects the food from insects, rodents, and light. However, perishables are very sensitive to temperature changes, so you must check thermometers regularly. Food which has spoiled

must be removed immediately. Do not order more than you can reasonably expect to use between issue cycles. FM 10-23, Appendixes B and C list approximate storage life for frozen items and items that must be refrigerated. DOD 4145.19-R-1 contains more information.

THE TCMD

Subsistence stocks that move through military terminals are controlled by the defense transportation system until they are received by a consignee, such as a TISA. Such stocks are accompanied by a TCMD. You may also use the TCMD as a request for transportation support. The warehouse supervisor must be able to read and interpret this document. Make sure you document any discrepancies in number of pieces, weight, or cube and list any damages before signing for the cargo. If you need to decode any of the entries on the form, see DOD 4500.32-R.

PRINCIPLES OF HANDLING

Whether the TISA is receiving, storing, packing, or shipping perishable or semiperishable items, some important principles must be recognized. They are discussed as follows:

- The least handling is the best handling. This saves time, cost, and potential material damage and it reduces accidents.
- Standardize your equipment and operating procedures. Maintenance and repair costs are reduced and storage and issue procedures simplified when your people are all working from the same plan.
- Choose the right machine for the job. Equipment capabilities are detailed in the operator's manual. Consider the number of items to be moved, weight, and distance.
- An essential phase of any program is planning for weather and transportation restrictions and to reduce safety hazards.
- Never exceed your equipment capacities. Equipment overload increases maintenance, repair, and replacement costs and the risk of accidents.
- If moves are short and irregular, it may be more economical to use manpower.
- Loading and unloading materials with mechanical devices, when properly done, will reduce safety hazards and decrease subsistence damage.

USE OF MHE

The TISA may have a wide variety of MHE available at a subsistence supply activity. A good understanding of the capabilities and limitations of these machines will help plan for their use, operation, and maintenance. TISA personnel should be licensed to operate MHE and practice using it.

TYPES OF MHE

The two types of MHE are nonpowered (see Figure 13-4, page 13-10) and powered. They are described in this paragraph.

Hand-Operated or Nonpowered MHE

Hand-operated and nonpowered MHE include:

- Four-wheeled platform truck or warehouse trailer.
- Roller conveyor.
- Skate wheel conveyor.
- Two-wheeled hand truck.
- Handlift truck or pallet jack.

Powered MHE

Powered MHE includes forklift trucks and tractor-trailer trains.

Forklift trucks. A forklift truck is a vehicle designed to pick up, carry, and stack supplies up to five pallets high. Forklift trucks are available with lifting capacities from 2,000 to 50,000 pounds and lifting heights from 100 to 252 inches. Gasoline-powered forklift trucks may be equipped with solid rubber or semisolid tires for use in warehouses or pneumatic tires

for use in outdoor storage areas. The exhaust fumes from gasoline-powered trucks may contaminate the food items and are toxic to personnel in an enclosed area. Subsistence warehouses will use the electric-powered forklift trucks that are equipped with solid rubber or semisolid (or cushion) tires for indoor operation only.

CAUTION

Gasoline-powered forklift trucks are not recommended for indoor subsistence storage areas.

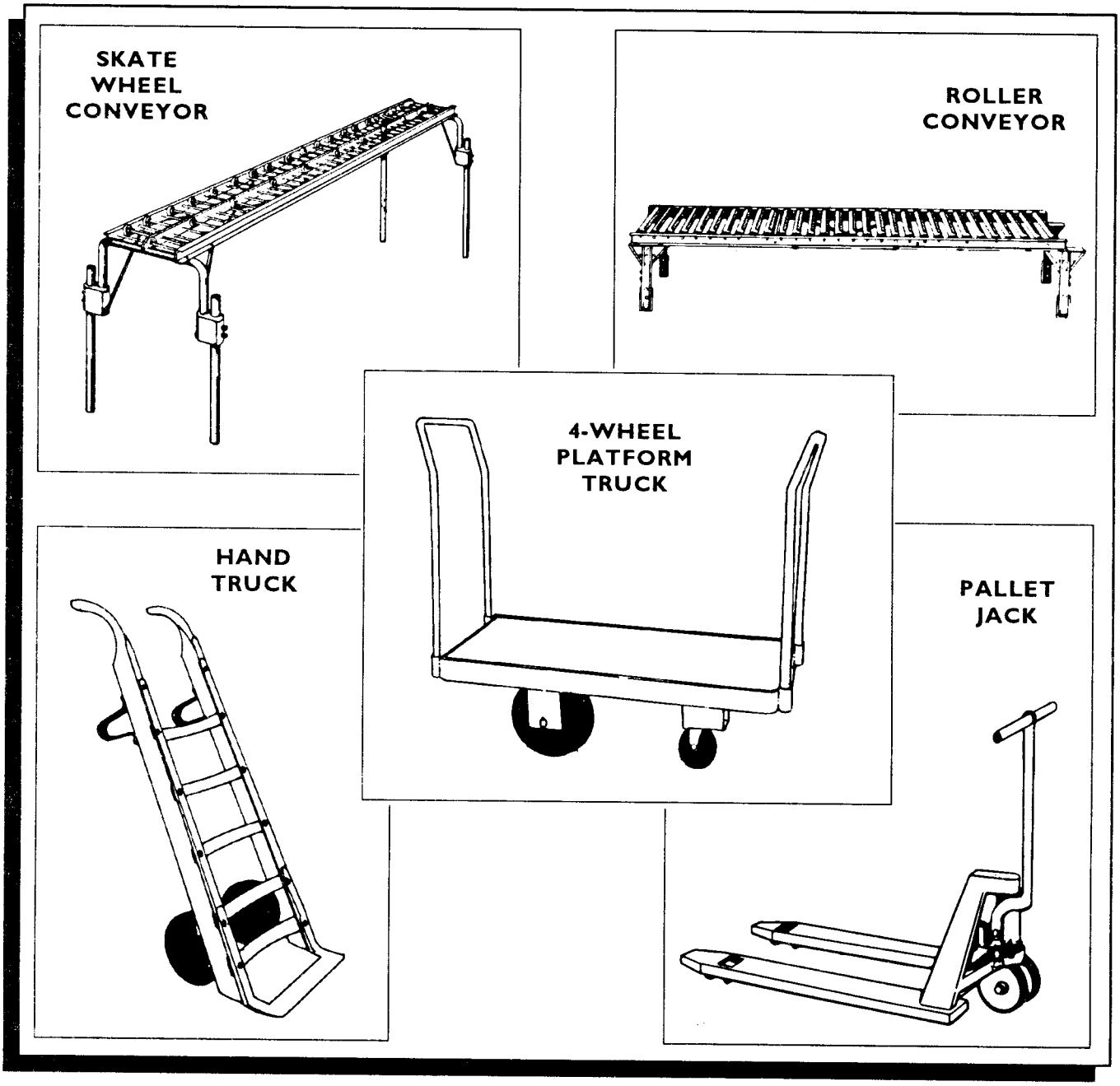


Figure 13-4. Hand-operated or nonpowered MHE

Tractor-trailer train. Use the tractor-trailer train to haul loads for distances of more than 400 feet in warehouses or on flat, hard-surfaced outdoor storage areas.

MHE SELECTION

It is important for warehouse personnel to choose the right machine for the job. Some things to consider are work load, distance, and the storage site.

Work Load

For a one-time short lift of light supplies, use a hand pallet jack or dolly. Place roller conveyors along routes that are used regularly to move small packages. Do not exceed MHE load capacities.

Distance

Forklift trucks should be used only for moves of 400 feet or less. For longer moves, use the tractor-trailer train or a truck.

Storage Site

A wooden environment will require a machine with a good turning radius. such as a forklift that is capable of the crabwalk or one that can pivot. Use electric-powered forklifts in warehouses when possible.

VEHICLE LOADING AND UNLOADING

A little planning in this phase of TISA operation is saves time, money, and effort. It will also help keep subsistence stocks from being damaged in transit or by mishandling.

To load, first determine the capacity of the vehicle by looking at the operator's manual. Next, take a look at the cargo. Determine the best way to load it. If the shipment will include items of various sizes, shapes, and weights, you may want to draw a loading plan showing how all items will fit. Ensure that the load is balanced on the vehicle.

When packing refrigerated vans or containers, make sure you allow for the type of cargo.

When loading or unloading, ensure that the carrier is as close to the storage location as possible and positioned properly. You may need a bridge plate or ramp. If so, install the plate or ramp, and heed all safety precautions. The carrier will then be loaded with the MHE according to plan.

When unloading the MILVAN, move the ramp to the doorway of the MILVAN and line up the holes in the ramp with the holes in the floor of the MILVAN. Put the locking pins through the holes. This will keep the ramp from moving.

Whether loading or unloading, supplies, be sure to observe the principles of materials handling.

STORAGE OF FOOD WITHIN DINING FACILITIES

Except for forced-issues, the dining facility receives only foods that are in good condition. To keep them that way, store both perishable and semiperishable foods as soon as they are inspected. Keep food in good condition by storing it right and using it as soon as possible, even if you have to make some changes in your menu. To prevent loss of quality, and even loss of subsistence due to spoilage, follow these rules for food storage:

- For all types of foods, except bread, follow the "first-in, first-out" rule. Use foods in the order you receive them.
- Keep perishable potentially hazardous foods out of the temperature danger zone (between 45^0F and 140^0F).
- Store foods in areas designed for storage. Do not store food products in toilet areas or under stairways. Also do not store foods with cleaning products or pesticides.
- Keep all subsistence in clean containers or wrappers. Do not reuse packaging.
- Never allow vegetables, except potatoes, sweet potatoes, hard-rind squash. eggplants, rutabagas, onions, and garlic to stand at room temperature for any length of time.

Storage Areas

Store semiperishables in storage areas that are clean, dry, well-ventilated, odor free, and free of insects and rodents. Do not store open containers of flour and sugar on shelves. Put them in tightly covered containers. If you store flour and sugar in galvanized cans, line the cans with clean, disposable, food-grade plastic liners. Leave the flour and sugar in their original containers and place the containers into the lined cans. Proper temperature and humidity are critical for the safe storage of canned food. High temperatures are likely to accelerate bacterial action and food deterioration, and excessive moisture may cause the cans to rust. In addition, you should--

- Store food products at least 6 inches above the floor on shelves, racks, dollies, or other easily cleanable surface.
- Keep food away from the wall. This discourages pest harborage and eases cleaning.
- Place heavy packages on lower shelves.
- Place the most frequently needed items on lower shelves, near the entrance.
- Rotate inventory on first-in, first-out basis.
- Keep storage areas clean and dry.

WARNING

Storing flour or sugar in an unlined galvanized can may result in food poisoning.

Perishables

When you store perishables, consider the temperature, humidity, air circulation, and sanitation needed to keep the food from spoiling. Store refrigerated foods at the prescribed temperature.

Keep a thermometer in the refrigerator or freezer, and check the temperature often. Frozen food should be stored at 0^{0}F or below. The best storage temperature for ice cream is -10° F. Frozen food temperatures should not be allowed to rise above 10° F while they are being transported.

Arrange the items so that air can move around them. Store the oldest items at the front of the shelves, and use them first. Keep foods with strong odors (such as garlic and onions) away from foods that absorb odors (such as butter).

To keep refrigerators and freezers operating efficiently, keep them clean, especially their door gaskets and refrigeration coils. There should be a buildup of no more than a quarter of an inch of ice on the inside of the freezer or freezer compartment.

Always store the most hazardous foods below the least hazardous foods. This prevents contamination from products such as raw chicken blood dripping onto products such as lettuce, which is eaten raw.

Do not store food directly on the floor of the refrigerator.

Do not store packaged food in contact with water or undrained ice.

Check fruits and vegetables daily for spoilage.

Eggs

Fresh eggs must be stored in a refrigerator. Do not store eggs near foods which have strong odors. Keep frozen eggs in a freezer. Egg solids do not need refrigeration. Keep them in a cool, dry place, and use them before their expiration date.

Milk and Dairy Products

Refrigerate milk, cream, butter, cheese, and margarine. Butter absorbs odors and must be stored away from foods with strong odors. If cheese is frozen, the taste becomes flat and the cheese becomes dry and crumbly, but it still can be used.

Bread and Pastries

Store bread and pastries on shelves in a cool, dry place. Pastries with fillings or frostings made with eggs or milk must be refrigerated until they are served.

Fruits and Vegetables

Most fruits and vegetables need to be stored under refrigeration. Some exceptions and special-handling considerations are--

- Bananas, apples, avocados, and pears ripen best at room temperature.
- Potatoes and onions should be stored in a cool, dark, dry place. Onions should not be stored with potatoes or moist vegetables.
- Berries, cherries, grapes, and plums should not be washed prior to refrigeration, as the moisture increases the possibility of mold growth.

STORAGE OF POISONOUS AND TOXIC MATERIALS

Only those poisonous and toxic materials normally required to maintain the sanitary condition of the dining facility and its equipment and utensils are permitted in any area of the facility. Retain PTMs in their original container. Also --

- Label PTM containers prominently and distinctively for easy identification.
- Use PTMs only according to label instructions.
- Store PTMs in a locked cabinet labeled with the words *"HAZARDOUS MATERIAL STORAGE."*
- Do not store or use chemical pesticides in the dining facility. Only certified and authorized individuals may apply pesticides in a food service establishment.
- Do not store personal medications in food storage, preparation, or service areas.

PART FOUR

DINING FACILITY ACCOUNTS, FILES, HEADCOUNT PROCEDURES, AND PRODUCTION

CHAPTER 14

DINING FACILITY ACCOUNTS AND FILES

GENERAL

Dining facility accounts are maintained under ARCS. ARCS is used during garrison operations and during peacetime training where overnight billeting in the field is not involved. The dining facility earns a monetary allowance based on headcount and the BDFA against which food costs are charged. The ARCS is a line-item ordering, dollar-accounting system. Under ARCS, the FSS orders subsistence by item, and he must balance expenditures against this allowance. The BDFA is computed monthly by the TISA. The dining facility account is maintained on DA Form 3980-R. The assigned FSO is responsible for ensuring that the FSS maintains all documents involving accountability accurately and efficiently. Table 14-1 (page 14-1) lists the forms used to maintain accountability for food, headcount, and cash in a dining facility.

Table 14-1. Forms and their uses

FORMS	PURPOSE	REFERENCE
DA Form 2970 (Subsistence Report and Field Ration Request)	To report number of assigned and attached personnel authorized to subsist without reimbursement. To report number of authorized personnel provided subsistence. To report issue of operational rations and box lunches. To report meals sold for cash.	AR 30-1
DA Form 3032 (Signature Headcount Sheet)	To record signatures of authorized diners from active Army, other service components, and foreign nationals.	AR 30-1
DA Form 3033 (Headcount Record)	To summarize data from DA Form 3032 and DD Forms 1544.	AR 30-1
DA Form 3034 (Production Schedule)	To report number of personnel provided subsistence. To list items to be served for each meal. To guide food service specialists on how to prepare each item. To provide food service specialists with special instructions and what to do with leftovers.	AR 30-1
DA Form 3034-1 (Sensitive and High Dollar Item Disposition)	To document the disposition of sensitive and high-dollar subsistence items.	AR 30-1

Table 14-1. Forms and their uses (continued)

FORMS	PURPOSE	REFERENCE
DA Form 3034-2-R (Disposition of Subsistence)	To compute, record, and evaluate the results of disposition of subsistence.	AR 30-1
DA Form 3161 (Request for Issue or Turn-in)	To order subsistence. To record receipt of subsistence. To document transfer of subsistence between facilities. To record turn-in of excess items. To document destruction of contaminated food. To transfer cash meal payment books between accountable officers.	AR 30-1 AR 710-2
DA Form 3234-R (Inventory Record)	To record monthly inventory.	AR 30-1
DA Form 3234-1-R (Monthly Inventory Recap Sheet)	To summarize information from DA Forms 3234-R.	AR 30-1
DA Form 3294-R (Ration Request/Issue/Turn-In Slip)	To order subsistence. To record receipt of subsistence. To provide prices for monthly inventory.	AR 30-18 AR 30-1
DA Form 3546-R (Control Record for Dining Facility-DD Form 1544)	To record issue of DD Form 1544 to headcounters or transferred with members of the facility. To record cash discrepancies resulting from errors in making change.	AR 30-1
DA Form 3953 (Purchase Request and Commitment)	To order food from commercial sources (for RC units with authorization from higher headquarters.)	AR 30-1 AR 30-18
DA Form 3980-R (Dining Facility Account Card)	To maintain the dining facility account.	AR 30-18 AR 30-1
DA Form 4697 (Department of the Army Report of Survey)	To obtain relief from accountability for losses.	AR 735-5 AR 30-1
DA Form 5309-R (Operation Ration/Box Lunch Control Sheet)	To record the issue of rations and the issue of box lunches prepared from ingredients drawn and issued from SB 10-540.	AR 30-1
DD Form 362 (Statement of Charges for Government Property Lost, Damaged, or Destroyed)	To obtain relief from accountability for losses when liability is admitted and a report of survey or AR 15-6 investigation is not required.	AR 735-5
DD Form 714 and 714E (Meal Card Control Book)	To show meal entitlements and service components of personnel.	AR 600-38

Table 14-1. Forms and their uses (continued)

FORMS	PURPOSE	REFERENCE
DD Form 1131 (Cash Collection Voucher)	To document cash turned in to the finance and accounting office (FAO). To obtain relief from accountability for losses.	AR 37-103 AR 735-5 AR 30-1
DD Form 1544 (Cash Meal Payment Book)	To record cash payments for meals served. To record the issue of cash sheets. To record cash turned in. To document cash turned in to FAO.	AR 30-1

REVIEW AND RECONCILIATION OF ACCOUNTS

Dining facility accounts of active Army units are maintained at each facility and at the control branch of the TISA. The FA reviews dining facility accounts quarterly, during visits to the facility or when there are problems. Based on his review, the FA provides advice on how to better manage the accounts. FSSs reconcile their accounts with the TISO three times a month. If there are discrepancies, the FA may be asked to help resolve them. If accounts are out of tolerance, the FA may be called on to recommend corrective action. He may also be called on for advice when inventories show that excessive subsistence was requested by the dining facility. Contractor-operated facilities will use contractor resources and contractual remedies to resolve accountability issues.

DELEGATING AUTHORITY

DD Form 577 (Notice of Delegation of Authority--Receipt for Supplies) identifies personnel who are authorized to sign requests and receipt for supplies. These forms must be kept up to date. When there is a change of commanders, new forms must be prepared. Units/contractors must provide the TISA with a memorandum listing those personnel authorized to request or receive subsistence. The same person will not be authorized to sign both requests and receipts unless the dining facility has seven or less personnel assigned. See AR 30-18 for detailed instructions.

REQUESTING SUBSISTENCE

Figure 14-1 (page 14-4) is a chart showing how to order food using the ARCS. The quantity of subsistence desired depends on specific factors. Instructions and procedures for ordering subsistence are outlined below.

Determine the Requirements for Each Food Item for 100 Soldiers

Requirements may be based on the Master Menu or on a locally developed menu. If the Master Menu is used, it is easy to determine how much of each food item is needed to feed 100 soldiers. SB 10-260 contains this information for each menu item. When the Master Menu offers choices among items, quantities of each choice must be adjusted to meet the preferences of the diners.

Review previous DA Forms 3034 to determine which products have been most acceptable. For example, if you are planning to serve roast beef and baked ham in the same meal, you will need 40 pounds of beef to prepare 100 servings of roast beef and 25 pounds of ham to prepare 100 servings of baked ham. If you estimate 75 percent of the diners will choose beef and 25 percent will choose ham, the requirement for 100 soldiers is 30 pounds

of beef (75 percent times 40 pounds) and 6.25 pounds of ham (25 percent times 25 pounds). Figure 14-2 (page 14-5) shows how to determine the requirement for 100 soldiers when using the Master Menu.

If local menus are developed use them and TM 10-412 to determine the requirements for 100 soidiers. The menu shows what products will be served. TM 10-412 shows what items are needed to prepare each product and how much of each item is needed to prepare 100 portions. Compute the requirement for 100 soldiers by multiplying the requirement for 100 portions from the recipe card times the number of portions to prepare. Figure 14-3 (page 14-5) shows how to determine the requirement for 100 soldiers when you are using a local developed menu.

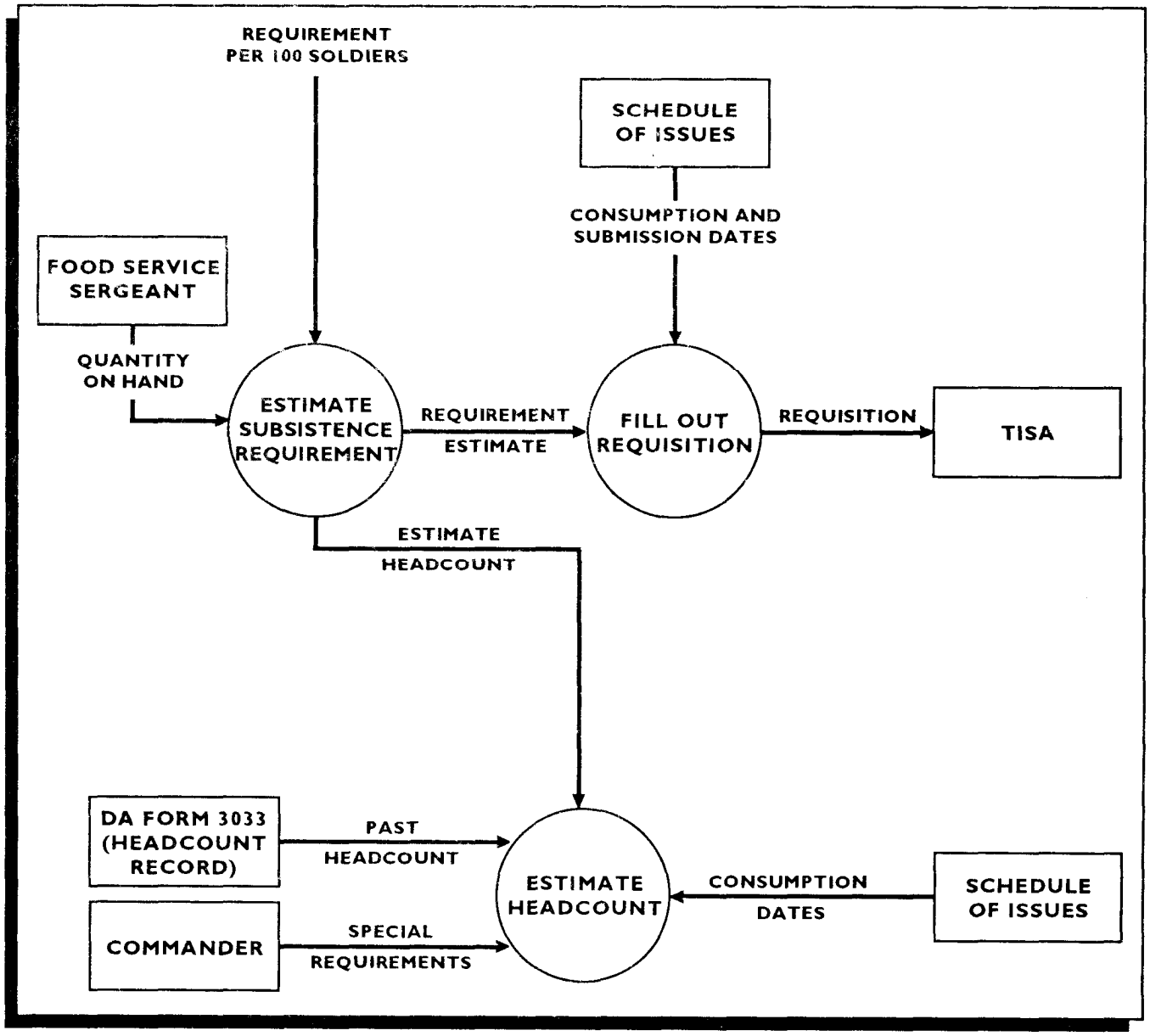


Figure 14-1. Request procedures with ARCS

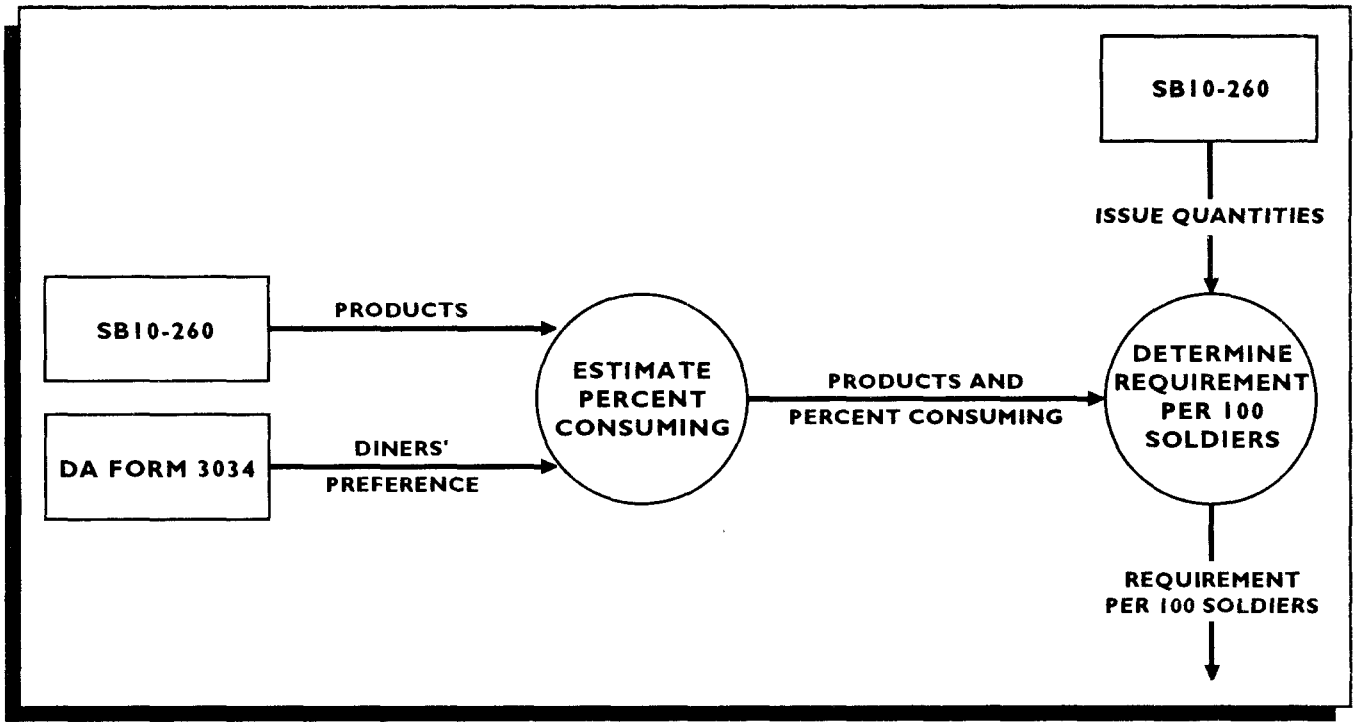


Figure 14-2. Using the Master Menu to determine the requirement for 100 soldiers

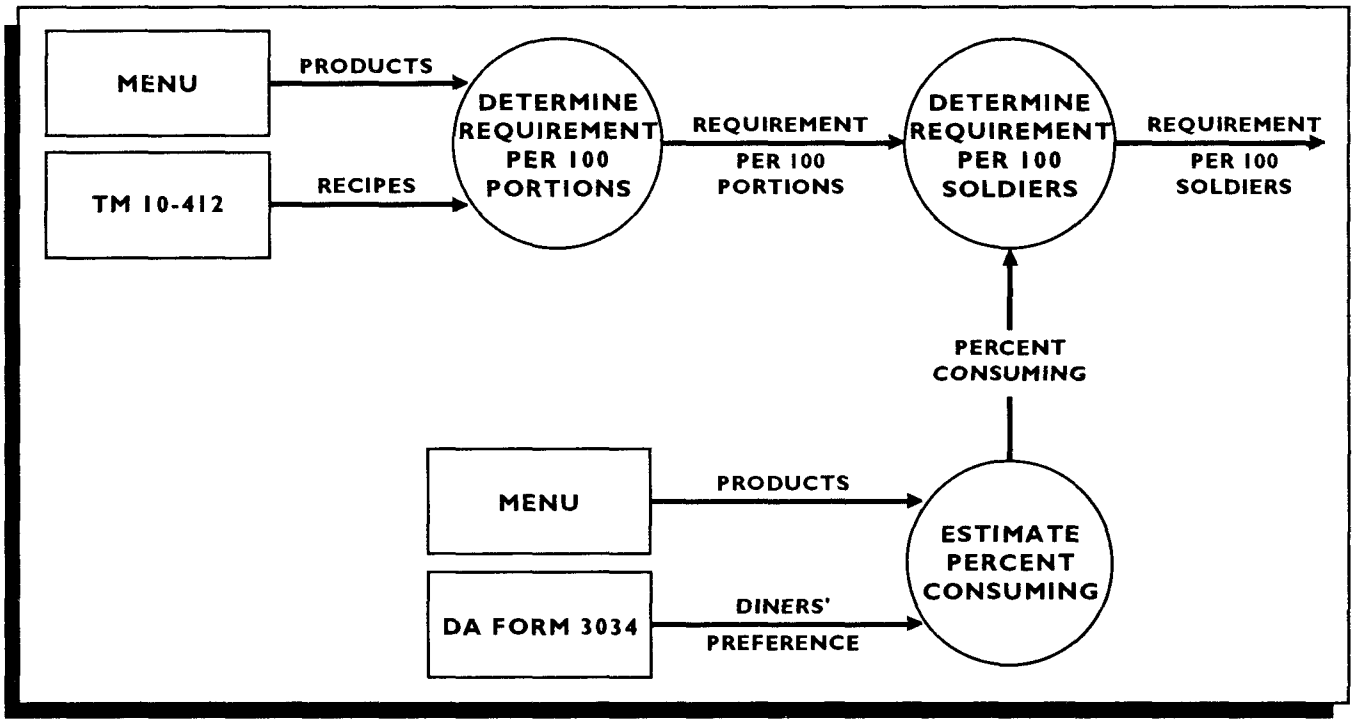


Figure 14-3. Using a locally-developed menu to determine the requirement for 100 soldiers

Estimate the Number of Diners

You can use figures from your headcount records to estimate the number of diners for each meal. However, these figures must be adjusted for holiday meals, alerts, field exercises, weather, time of month, and other special circumstances.

Determine the Quantity of Excess Food on Hand

Review your stockage of items required for upcoming menus, subtract the amount required to prepare meals during the current issue period from the amount on hand. The difference is the amount of excess. This excess may be used in the development of your menus to reduce the excess, reduce expenditures, and to help balance your account.

Figure the Quantity of Food to Order

Subtract the items and amounts which will be used from excess stock from the amount required. The result is the minimum that you must order. Order enough of each item to prepare the number of meals you expect to serve.

Prepare Your Request

Methods to request food vary from installation to installation, so consult the FA or TISO for detailed guidance. Figure 14-4 (page 14-7) is an example of a DA Form 3294-R completed as a ration request. Figure 14-5 (page 14-8) shows a DA Form 3161.

Forward Your Request to the TISA

Requests are submitted per a schedule of ration issues. This schedule is prepared by the TISO and shows when to submit your request for each issue cycle.

RECEIVING SUBSISTENCE

When food is received in the dining facility, it must be inspected as shown in Chapter 13. Subsistence may be received from a TISA or from commercial vendors.

Recording Receipts From a TISA

Record receipts from the TISA on the issue documents. The authorized person counts or weighs the items, verifies the quantity received in the *SUPPLY ACTION* column of the issue document, and signs the issue document. When signed, the request becomes a receipt. Send one copy of each receipt back to the TISA.

Recording Receipts from Commercial Vendors

Since procedures vary from installation to installation, the local TISO will provide guidance.

DOCUMENTING DINING FACILITY TRANSACTIONS

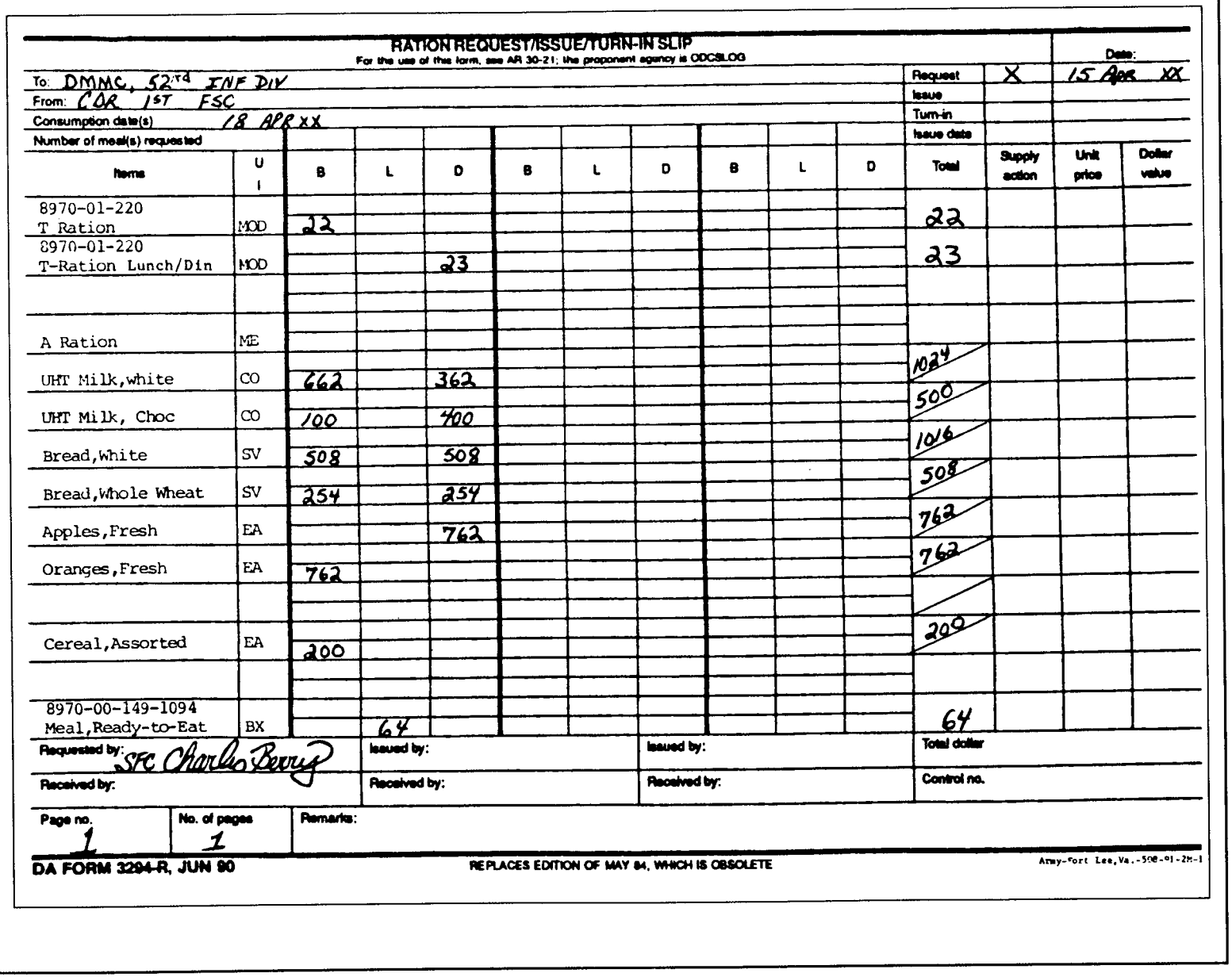
Use DA Form 3980-R to maintain a record of dining facility transactions to monitor the status of the dining facility account. The status is determined by comparing the facility's monetary allowance with the dollar value of subsistence drawn.

BDFA

Each month the TISA publishes the dollar value of the BDFA for the following month. The BDFA is then used to compute meal values. Table 14-2 (page 14-9) lists conversion percentages for each meal. To compute meal values, multiply the BDFA by each conversion percentage. The meal values are posted to DA Form 3980-R as shown in Figure 14-6 (page 14-10). If the conversion results in an odd penny, apply the penny to the dinner meal BDFA value.

Receipts

Post the dollar value of subsistence received to DA Form 3980-R as shown in Figure 14-6 (page 14-10). Ensure that all receipts (expenditures) are posted, to include DVDs.



RATION REQUEST/ISSUE/TURN-IN SLIP

For the use of this form, see AR 30-21; the proponent agency is ODCSLOG

Date: 15 Apr XX

To: DMMC, 52nd INF DIV
From: COR 1ST FSC
Consumption date(s): 18 APR XX
Number of meal(s) requested

Request: X
Issue:
Turn-in:
Issue date:

Items	UI	B	L	D	B	L	D	B	L	D	Total	Supply action	Unit price	Dollar value
8970-01-220 T Ration	MOD	22									22			
8970-01-220 T-Ration Lunch/Din	MOD			23							23			
A Ration	ME													
UHT Milk,white	CO	662		362							1024			
UHT Milk, Choc	CO	100		400							500			
Bread,White	SV	508		508							1016			
Bread,Whole Wheat	SV	254		254							508			
Apples,Fresh	EA			762							762			
Oranges,Fresh	EA	762									762			
Cereal,Assorted	EA	200									200			
8970-00-149-1094 Meal,Ready-to-Eat	BX		64								64			

Requested by: SFC Charles Berry
Received by:

Issued by:
Received by:

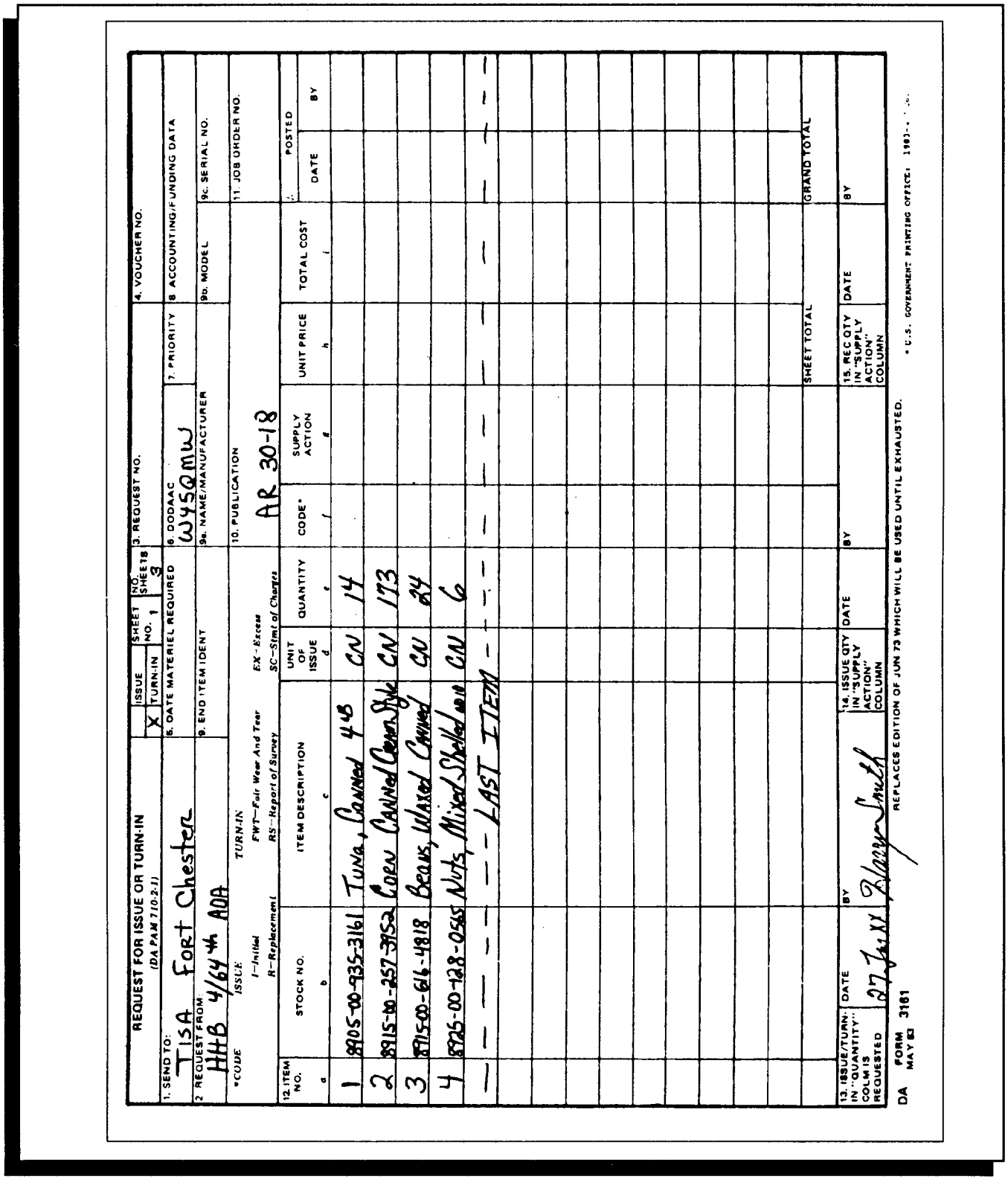
Issued by:
Received by:

Total dollar
Control no.

Page no. 1 | No. of pages 1 | Remarks:

DA FORM 3294-R, JUN 90 — REPLACES EDITION OF MAY 84, WHICH IS OBSOLETE — Army-Fort Lee,Va.-500-01-2M-1

Figure 14-4. DA Form 3294-R completed as a ration request



REQUEST FOR ISSUE OR TURN-IN (DA PAM 710-2-1)

ISSUE: X | TURN-IN: | SHEET NO. 1 | SHEETS NO. 3

1. SEND TO: Tisa Fort Chester
2. REQUEST FROM: HHB 4/64th ADA
3. REQUEST NO.
4. VOUCHER NO.
5. DATE MATERIEL REQUIRED
6. DODAAC W45QMW
7. PRIORITY
8. ACCOUNTING/FUNDING DATA
9. END ITEM IDENT
9a. NAME/MANUFACTURER
9b. MODEL
9c. SERIAL NO.
10. PUBLICATION AR 30-18
11. JOB ORDER NO.

*CODE ISSUE: I—Initial R—Replacement
TURN-IN: FWT—Fair Wear And Tear SC—Strnl. of Charges RS—Report of Survey EX—Excess

12. ITEM NO. a	STOCK NO. b	ITEM DESCRIPTION c	UNIT OF ISSUE d	QUANTITY e	CODE* f	SUPPLY ACTION g	UNIT PRICE h	TOTAL COST i	POSTED DATE	POSTED BY
1	8905-00-935-3161	Tuna, Canned 4lb	CN	14						
2	8915-00-257-3752	Corn, Canned Cream Style	CN	173						
3	8915-00-616-4818	Beans, Waxed Canned	CN	24						
4	8925-00-128-0585	Nuts, Mixed Shelled no in	CN	6						
—	— — — —	— — LAST ITEM — — —								

SHEET TOTAL | GRAND TOTAL

13. ISSUE/TURN-IN "QUANTITY" COLM IS REQUESTED — DATE: 27 Jan XX — BY: Blazyn Smith

14. ISSUE QTY IN "SUPPLY ACTION" COLUMN — DATE — BY

15. REC QTY IN "SUPPLY ACTION" COLUMN — DATE — BY

DA FORM 3161 MAY 63 — REPLACES EDITION OF JUN 73 WHICH WILL BE USED UNTIL EXHAUSTED. — * U.S. GOVERNMENT PRINTING OFFICE: 1983

Figure 14-5. Sample entries on DA Form 3161

Table 14-2. Meal conversion percentages

MEAL	CONVERSION PERCENTAGE
Breakfast	20
Lunch	40
Dinner	40
Brunch	45
Supper	55

Headcount

After each meal, post the cumulative headcount from the DA Form 3032 and DD Form 1544 to the daily DA Form 3033. After the supper meal on the following day, post the headcount to DA Form 3980-R. Then multiply the headcount for each type of meal by the meal value. Add the results, and post the total dollar value to DA Form 3980-R as shown in Figure 14-6 (page 14-10).

BALANCING THE ACCOUNT

The goal should be to keep the dining facility account balanced. A balanced account is one in which the amount of subsistence purchased equals the allowance earned. An overdrawn account can be balanced by turning in excess subsistence, reducing requests, and changing menus. If you have purchased less than you have earned, the account is underdrawn. When an account is underdrawn, the menu can be revised to offer a wider variety or more expensive items more frequently. The account status may be determined as described in these paragraphs.

Determine the Cumulative Allowance

To determine the cumulative allowance, first look at the number in column h of DA Form 3980-R. If it has a plus sign in front of it, add it to the number in column g. If it has a minus sign in front of it, subtract it from the number in column g. Post the result in column h as shown in Figure 14-6 (page 14-10).

Determine the Cumulative Total Value of Subsistence Received

Add the numbers in columns i, j, and k. Post the total to column 1. Add the numbers in column 1 to the number in column m. Post the total to column m as shown in Figure 14-6 (page 14-10).

Determine the Monetary Status

Compare the number in column m to the number in column h. Then compute monetary status and post it to DA Form 3980-R as shown in Table 14-3 (page 14-12).

Convert the Monetary Status to a Percentage

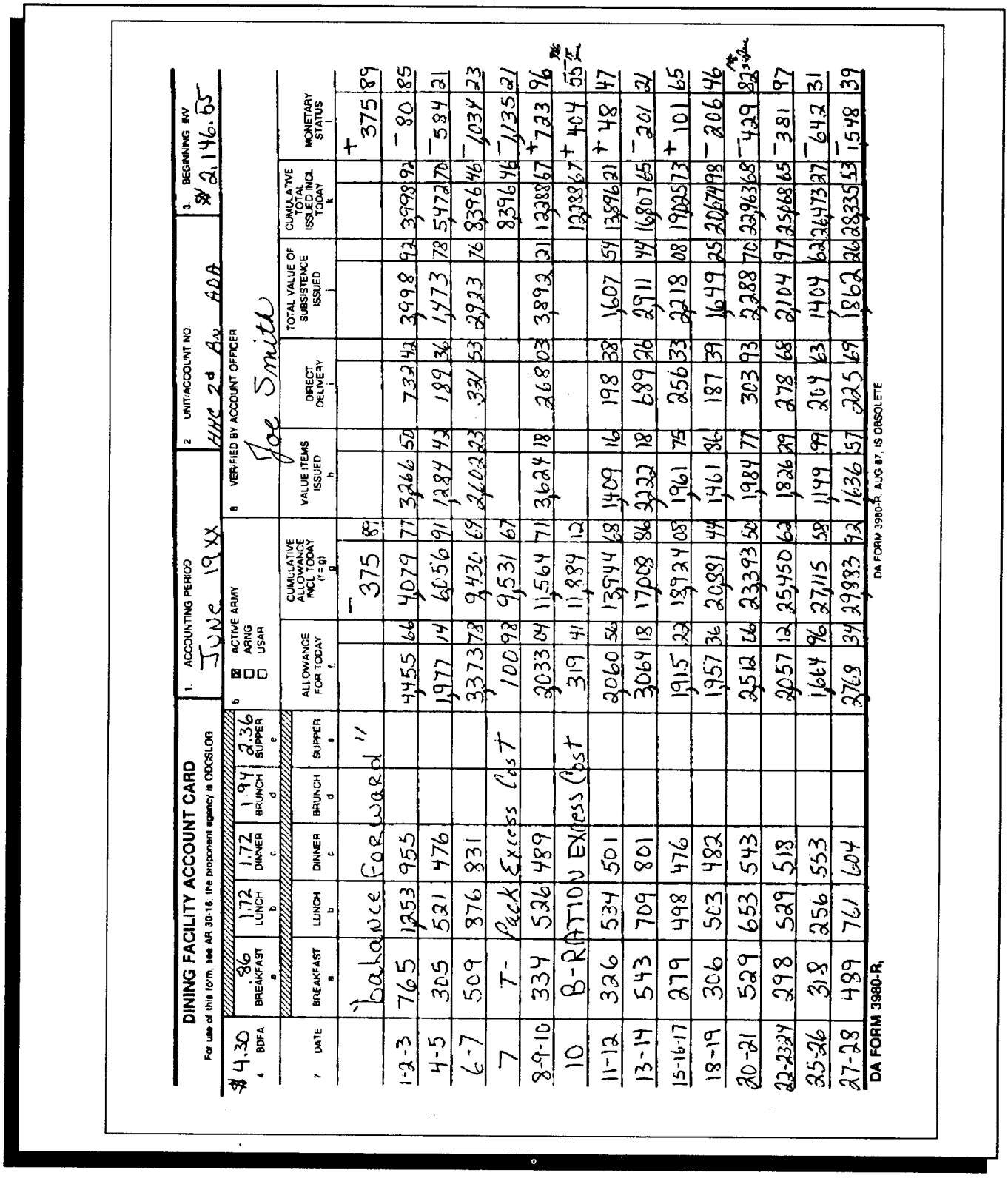
To convert the monetary status to a percentage, divide the figure in column n by the figure in column has shown in Figure 14-6 (page 14-10). If the result is more than 3 percent at the end of the month, take action to get the account back into balance.

ADJUSTING THE ACCOUNT STATUS

You should take actions to adjust a plus or minus account status. These actions are described below.

Overdrawn Account

If the account is overdrawn at the end of a fiscal year, the commander MUST initiate a report of survey to find out whether anyone should be held liable for the overdrawn amount and to return the account to a zero balance. The RS is posted to the DA Form 3980-R as shown in Figure 14-6 (page 14-10). Additional guidance in adjusting overdrawn accounts is in AR 30-1. In contract-operated facilities, the contracting officer will initiate action to determine the limits of the contractor's liability. The contracting officer is responsible for investigating losses in a contracted facility, not the commander. This is according to FAR 45.503, which takes precedence over an AR.



DINING FACILITY ACCOUNT CARD
For use of this form, see AR 30-18; the proponent agency is ODCSLOG

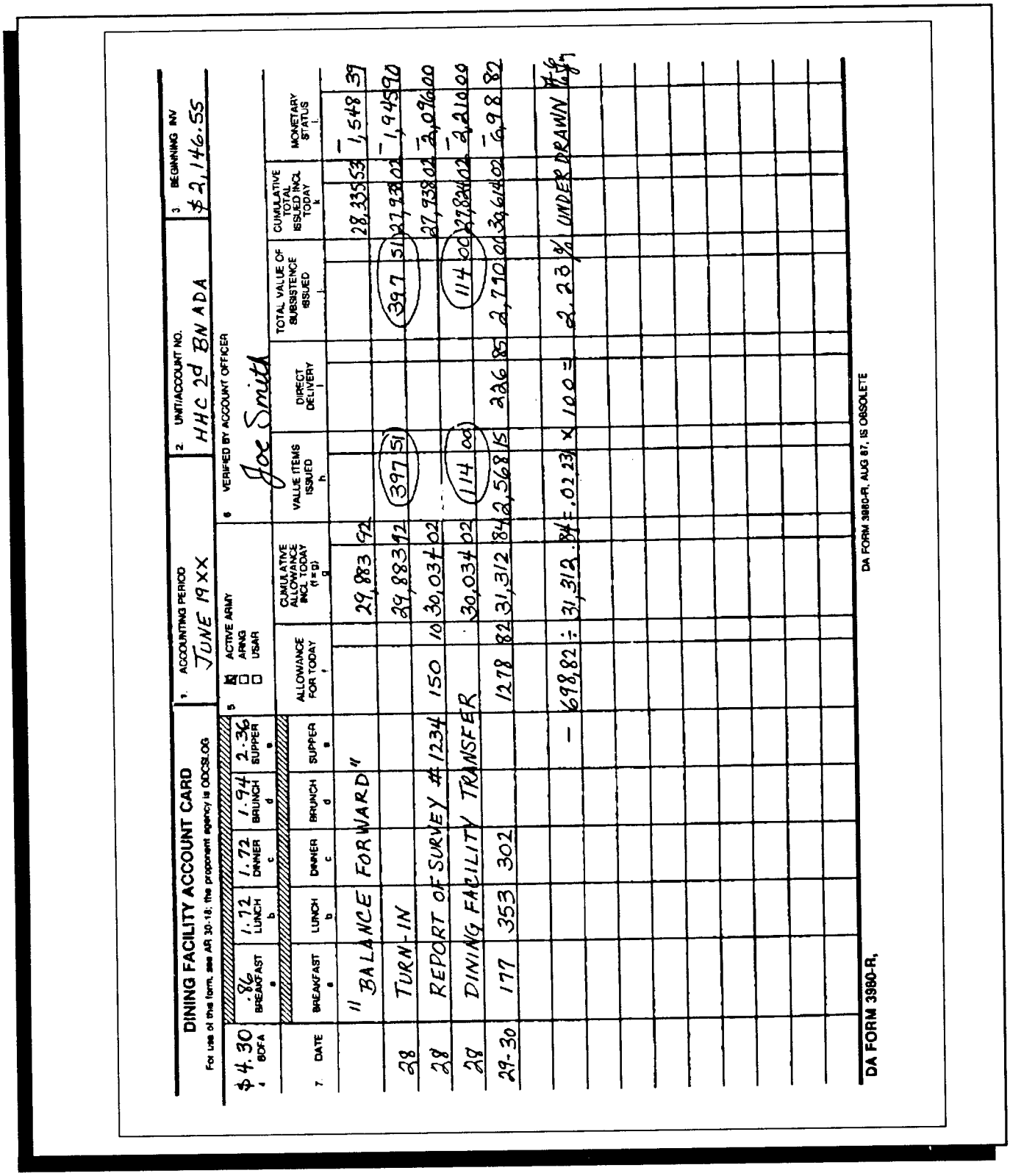
1. ACCOUNTING PERIOD: June 19XX
2. UNIT/ACCOUNT NO: HHC 2d Bn ADA
3. BEGINNING INV: $2,146.65
4. BDFA: $4.30
5. ☒ ACTIVE ARMY ☐ ARNG ☐ USAR
6. VERIFIED BY ACCOUNT OFFICER: Joe Smith

7 DATE	BREAKFAST a	LUNCH b	DINNER c	BRUNCH d	SUPPER e	ALLOWANCE FOR TODAY f	CUMULATIVE ALLOWANCE NET TODAY (f-g) g	VALUE ITEMS ISSUED h	DIRECT DELIVERY i	TOTAL VALUE OF SUBSISTENCE ISSUED j	CUMULATIVE TOTAL ISSUED INCL TODAY k	MONETARY STATUS l
	86	1.72	1.72	1.94	2.36		− 375 89					+ 375 89
	Balance	Forward				4455 66	4079 77	3266 50	732 42	3998 92	3998 92	− 80 85
1-2-3	765	1253	955									
4-5	305	521	476			1977 14	6056 91	1284 43	189 36	1473 78	5472 70	− 584 21
6-7	509	876	831			3373 78	9430 69	2402 23	321 53	2723 76	8396 46	− 1034 23
7	T-	Pack	Excess	Cost		1000 98	9531 67				8396 46	− 1135 21
8-9-10	334	536	489			3033 04	11564 71	3624 18	268 03	3892 21	12288 67	+ 723 96
10	B-	RATION	EXCESS	Cost		319 41	11884 12				12288 67	+ 404 55
11-12	326	534	501			2060 56	13944 68	1409 16	198 38	1607 54	13896 21	+ 48 47
13-14	543	709	801			3069 18	17008 86	3232 18	689 26	2911 44	16807 65	− 201 21
15-16-17	279	498	476			1915 32	18924 08	1961 75	256 33	2218 08	19025 73	+ 101 65
18-19	306	503	482			1957 36	20881 44	1461 84	187 39	1649 25	20674 98	− 206 46
20-21	529	653	543			2512 46	23393 50	1984 77	303 93	2288 70	22963 68	− 429 82
22-23-24	298	529	518			2057 12	25450 62	1826 39	278 68	2104 97	25068 65	− 381 97
25-26	318	256	553			1664 96	27115 58	1199 99	204 63	1404 62	26473 27	− 642 31
27-28	499	761	604			2768 34	29933 92	1636 157	225 69	1862 26	28335 53	− 1548 39

DA FORM 3980-R, AUG 87, IS OBSOLETE

DA FORM 3980-R,

Figure 14-6. Dollar values posted to DA Form 3980-R



DINING FACILITY ACCOUNT CARD
For use of this form, see AR 30-18; the proponent agency is ODCSLOG

1. ACCOUNTING PERIOD: JUNE 19XX
2. UNIT/ACCOUNT NO.: HHC 2d BN ADA
3. BEGINNING INV: $2,146.55
5. ☒ ACTIVE ARMY ☐ ARNG ☐ USAR
6. VERIFIED BY ACCOUNT OFFICER: Joe Smith

$4.30 4. BOFA	.86 BREAKFAST a	1.72 LUNCH b	1.72 DINNER c	1.94 BRUNCH d	2.36 SUPPER e									
7. DATE	BREAKFAST a	LUNCH b	DINNER c	BRUNCH d	SUPPER e	ALLOWANCE FOR TODAY f	CUMULATIVE ALLOWANCE INCL TODAY (f + g)	VALUE ITEMS ISSUED h	DIRECT DELIVERY i	TOTAL VALUE OF SUBSISTENCE ISSUED j	CUMULATIVE TOTAL ISSUED INCL TODAY k	MONETARY STATUS l
	11 BALANCE FORWARD						29,883 92				28,335 53	− 1,548 39
28	TURN-IN						29,883 92	(397 51)		(397 51)	27,938 02	− 1,945 90
28	REPORT OF SURVEY #1234					150 10	30,034 02				27,938 02	− 2,096 00
28	DINING FACILITY TRANSFER						30,034 02	(114 00)		(114 00)	27,824 02	− 2,210 00
29-30	177	353	302			1278 82	31,312 84	2,568 15	226 85	2,710 00	30,534 02	− 698 82
						− 698.82 ÷ 31,312.84 = .02 23				× 100 =	2.23 %	UNDER DRAWN

DA FORM 3980-R, AUG 87, IS OBSOLETE

DA FORM 3980-R,

Figure 14-6. Dollar values posted to DA Form 3980-R (continued)

Table 14-3. How to compute and post monetary status

COMPARE	POST	
COLUMN m WITH COLUMN h, THEN IF THE NUMBER IN COLUMN m IS		THE RESULT IN COLUMN n WITH A
Larger	Subtract h from m = + sign	
Smaller	Subtract m from h = - sign	

Relief From Accountability and Credit

Relief from accountability and credit for losses are explained in AR 30-1 and AR 735-5. When an RS is conducted according to AR 735-5, the person initiating the RS will provide a copy of the RS (DA Form 4697) to the TISO. In contract-operated facilities, the contracting officer will provide the TISO with a copy of the determination detailing the contractor's liability. The TISO will post and credit the dining facility account.

MANAGING DINING FACILITY INVENTORY

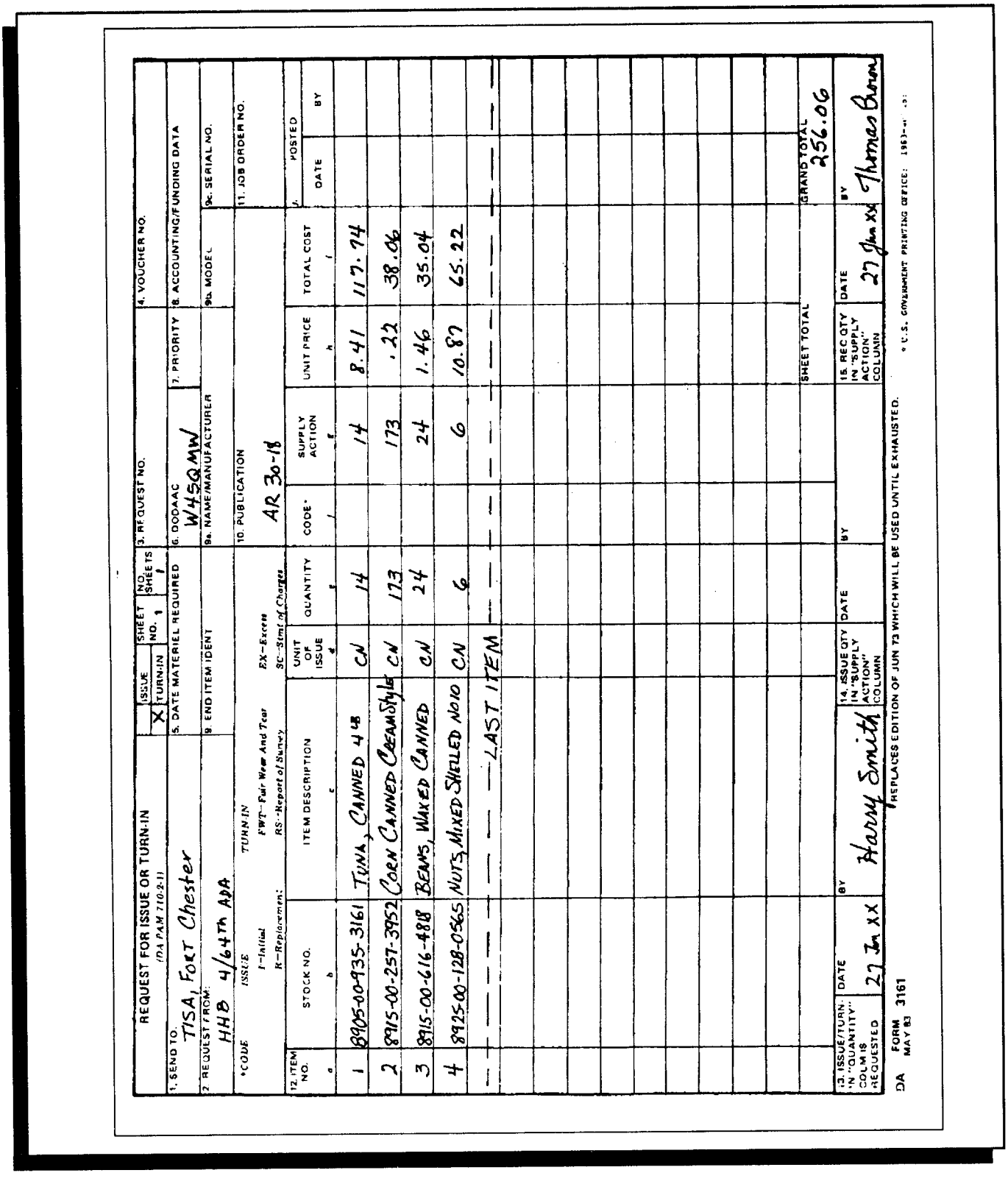
Proper management and inventory control helps to maintain a balanced dining facility account. Unnecessarily large inventories waste space, invite theft, and can lead to waste through spoilage. Generally, excesses should be eliminated by integrating items into the menu or by returning excess items to the TISA for credit. The schedule of ration issues, published by the TISO, shows when food may be turned in. A veterinary food inspection specialist will inspect the food. Only food that is certified fit for reissue will be accepted.

Turn-Ins

Excess food in the dining facility should be turned in, while food that is not fit for consumption must be disposed of by the FSS as described in AR 30-18. Figure 14-7 (page 14-13) is an example of a DA Form 3161 filled out as a request for turn-in. The supporting supply TISA will complete the DA Form 3161 as shown in Figure 14-8 (page 14-14) and will return a copy for the dining facility's records. The completed form will be used to post the value of the turn-in to the dining facility DA Form 3980-R. Turn-ins are posted to the DA Form 3980-R as shown in Figure 14-6 (page 14-10).

Inventory Record

A monthly inventory must be conducted after the dinner meal, on the last day of each month. Use DA Form 3234-R (Figure 14-9, page 14-15) to record the inventory. Consolidate totals from all DA Forms 3234-R on DA Form 3234- l-R (Figure 14-10, page 14-16). A signature and verification date is not required on the monthly inventory, DA Form 3234-R. The consolidated copy of DA Form 3234-l-R, however, will require signatures. During the fiscal year-end inventory, the disinterested person verifying the inventory must sign and date the last sheet of DA Form 3234-R (if more than one sheet is used). Within two working days after the final reconciliation of the DA Form 3980-R, copies of DA Form 3234-R, DA Form 3234-l-R, and DA Form 3980-R are forwarded to the responsible FA for review and appropriate action. The FSS may enter the unit designation in the remarks section of the DA Form 3234- l-R to assist the responsible FA in identification. Also, to assist in the FA's review, the FSS should include the inventory value objective computation, shown in AR 30-1, paragraph 7-6, in the remarks section of the DA Form 3234-l-R.



REQUEST FOR ISSUE OR TURN-IN (DA PAM 710-2-1)

X ISSUE / TURN-IN | SHEET NO. 1 | NO. SHEETS 1

1. SEND TO: TISA, Fort Chester
2. REQUEST FROM: HHB 4/64th ADA
3. REQUEST NO.
4. VOUCHER NO.
5. DATE MATERIEL REQUIRED
6. DODAAC W45QMW
7. PRIORITY
8. ACCOUNTING/FUNDING DATA
9. END ITEM IDENT
9a. NAME/MANUFACTURER
9b. MODEL
9c. SERIAL NO.
10. PUBLICATION AR 30-18
11. JOB ORDER NO.

*CODE ISSUE: I-Initial R-Replacement; TURN-IN: FWT-Fair Wear And Tear, RS-Report of Survey, EX-Excess, SC-Stmt of Charges

12. ITEM NO.	STOCK NO.	ITEM DESCRIPTION	UNIT OF ISSUE	QUANTITY	CODE*	SUPPLY ACTION	UNIT PRICE	TOTAL COST	POSTED DATE	POSTED BY
a	b	c	d	e	f	g	h	i	j	j
1	8905-00-935-3161	TUNA, CANNED 4 LB	CN	14		14	8.41	117.74		
2	8915-00-257-3952	CORN CANNED CREAMSTYLE	CN	173		173	.22	38.06		
3	8915-00-616-488	BEANS, WAXED CANNED	CN	24		24	1.46	35.04		
4	8925-00-128-0565	NUTS, MIXED SHELLED NO10	CN	6		6	10.87	65.22		
		---LAST ITEM---								
							SHEET TOTAL		GRAND TOTAL	256.06

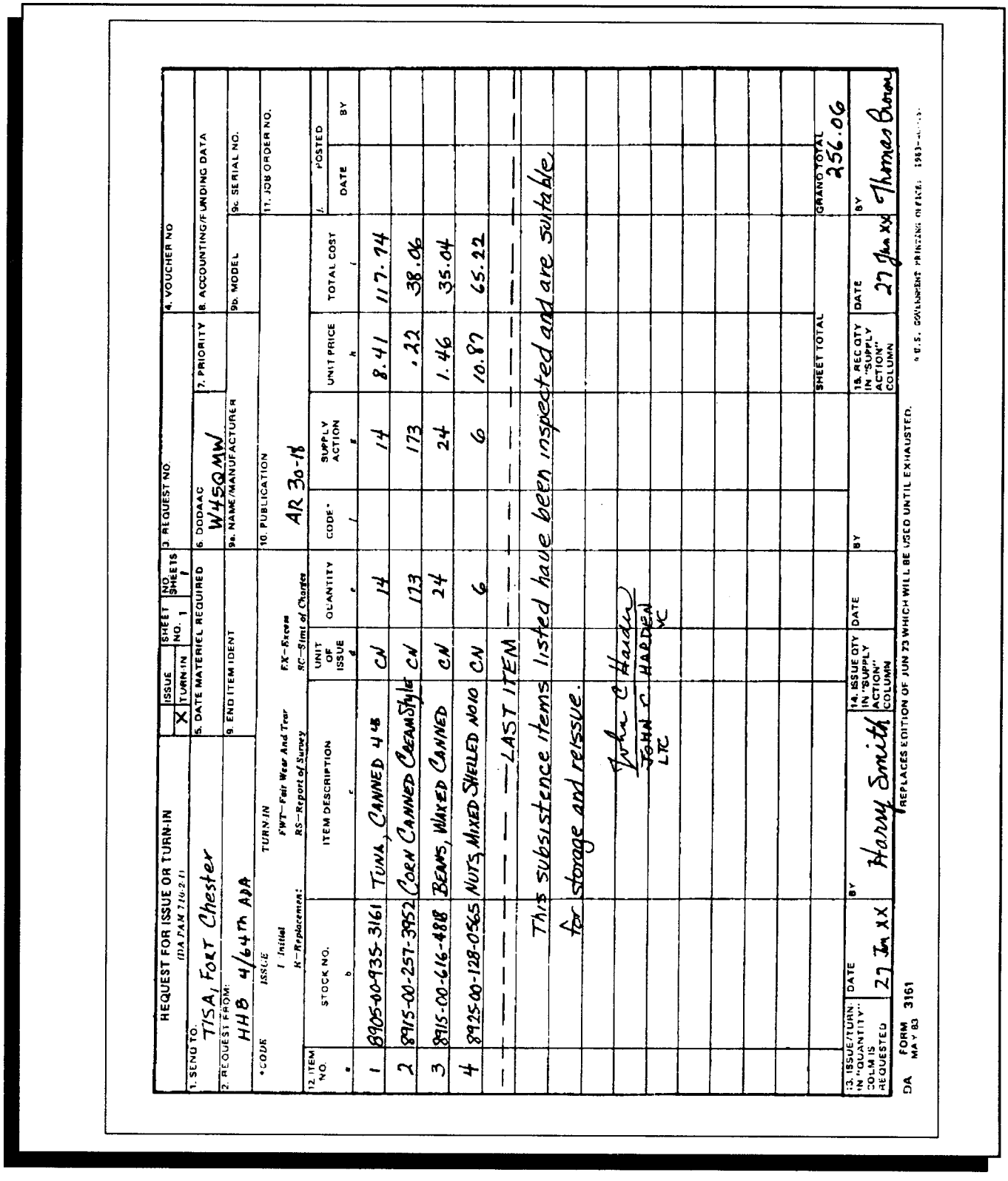
13. ISSUE/TURN-IN "QUANTITY" COLM IS REQUESTED — DATE: 27 Jan XX — BY: Harry Smith

14. ISSUE QTY IN "SUPPLY ACTION" COLUMN — DATE — BY

15. REC QTY IN "SUPPLY ACTION" COLUMN — DATE: 27 Jan XX — BY: Thomas Brown

DA FORM 3161 MAY 83 — REPLACES EDITION OF JUN 73 WHICH WILL BE USED UNTIL EXHAUSTED. — * U.S. GOVERNMENT PRINTING OFFICE: 1983—

Figure 14-7. DA Form 3161 completed as a request for turn-in



REQUEST FOR ISSUE OR TURN-IN (DA PAM 710-2-1)

1. SEND TO: TISA, Fort Chester	ISSUE: X	TURN-IN:	SHEET NO. 1	NO SHEETS 1	3. REQUEST NO.	4. VOUCHER NO
2. REQUEST FROM: HHB 4/64th ADA	5. DATE MATERIEL REQUIRED		6. DODAAC W45QMW		7. PRIORITY	8. ACCOUNTING/FUNDING DATA
	9. END ITEM IDENT		9a. NAME/MANUFACTURER		9b. MODEL	9c. SERIAL NO.
			10. PUBLICATION AR 30-18			11. JOB ORDER NO.

*CODE — ISSUE: I Initial, K Replacement; TURN-IN: FWT Fair Wear And Tear, RS Report of Survey, FX Excess, SC Limit of Charges

12. ITEM NO.	STOCK NO.	ITEM DESCRIPTION	UNIT OF ISSUE	QUANTITY	CODE*	SUPPLY ACTION	UNIT PRICE	TOTAL COST	POSTED DATE	POSTED BY
a	b	c	d	e	f	g	h	i	j	j
1	8905-00-935-3161	TUNA, CANNED 4 LB	CN	14		14	8.41	117.74		
2	8915-00-257-3952	CORN CANNED CREAMSTYLE	CN	173		173	.22	38.06		
3	8915-00-616-488	BEANS, WAXED CANNED	CN	24		24	1.46	35.04		
4	8925-00-128-0565	NUTS, MIXED SHELLED NO10	CN	6		6	10.87	65.22		
		— — — — — — LAST ITEM — — — — — —								
		This subsistence items listed have been inspected and are suitable for storage and reissue.								
		John C Harden JOHN C. HARDEN LTC MC								

SHEET TOTAL — GRAND TOTAL 256.06

13. ISSUE/TURN-IN "QUANTITY" COLM IS REQUESTED	DATE	BY	14. ISSUE QTY IN "SUPPLY ACTION" COLUMN	DATE	BY	15. REC QTY IN "SUPPLY ACTION" COLUMN	DATE	BY
	27 Jun XX	Harry Smith					27 Jun XX	Thomas Brown

DA FORM 3161 MAY 83 — REPLACES EDITION OF JUN 73 WHICH WILL BE USED UNTIL EXHAUSTED. — U.S. GOVERNMENT PRINTING OFFICE: 1983—

Figure 14-8. DA Form 3161 with entries showing turn-in has been accepted

INVENTORY RECORD

For use of this form, see AR 30-1; the proponent agency is DCSLOG.

PAGE NO: 6 | NO. OF PAGES: 6

ORGANIZATION: USMA PREP SCHOOL, FT BELVOIR, VA 22103

MONTH: JANUARY | YEAR: 19XX

a. ITEM	b. UNIT	c. UNIT PRICE		d. LAST DAY QTY	d. LAST DAY VALUE	
BEEF	XX	XX	XX	XX	XXX	XX
GRILL STEAK	LB	3	55	56	198	80
GROUND BEEF	LB	1	19	112	133	28
POT ROAST	LB	1	96	44	86	24
SWISS STEAK	LB	2	35	35	82	25
HAMBURGER PATTIES	LB	1	10	108	118	80
POULTRY	XX	XX	XX	XX	XXX	XX
TURKEY, BONELESS ROLL	LB	1	19	26	30	94
CHICKEN WH RTC	LB		67	112	63	84
PORK	XX	XX	XX	XX	XXX	XX
BACON	LB	1	29	48	61	92
HAM, SMKD, BONELESS	LB	1	63	62	101	06
VEGETABLES, FRZ	XX	XX	XX	XX	XXX	XX
CORN, WHOLE KERNEL	LB		58	60	34	80
PEAS	LB		41	33	13	53
MIXED VEGETABLES	LB		51	48	24	48
CONDIMENTS	XX	XX	XX	XX	XXX	XX
SUGAR, GRANULATED	BG	2	84	15	42	60
COFFEE, ROASTED, #3 CAN	LB	1	75	12	21	00

SHEET TOTAL: $1,013.54

SIGNATURE OF VERIFYING OFFICER | DATE VERIFIED

DA FORM 3234-R, AUG 84 EDITION OF SEP 79 IS OBSOLETE

Figure 14-9. Inventory recorded on DA Form 3234-R

MONTHLY INVENTORY RECAP SHEET for DA FORM 3234-R

For use of this form see AR 30-1, the proponent agency is DCSLOG.

DATE: 31 JULY 19XX

PAGE of PAGES	PERISHABLES	SEMI-PERISHABLES	TOTAL
1. of 6	$	$ 1,327.90	$ 1,327.90
2. of 6	$ 995.66	$	$ 995.66
3. of 6	$ 1,001.82	$	$ 1,001.82
4. of 6	$ 1,044.63	$	$ 1,044.63
5. of 6	$ 980.75	$	$ 980.75
6. of 6	$ 949.94	$ 63.60	$ 1,013.54
7.	$	$	$
8.	$	$	$
9.	$	$	$
10.	$	$	$
11.	$	$	$
12.	$	$	$
13.	$	$	$
14.	$	$	$
15.	$	$	$
16.	$	$	$
TOTALS	$ 4,972.80	$ 1,391.50	$ 6,364.30

A.L. Davis — FSS SIGNATURE

Harold E. Richard, CPT QM — FSO SIGNATURE

$ 6,364.30 — GRAND TOTAL

REMARKS:

GRAND TOTAL OF INVENTORY $ 6,364.30
DOLLAR VALUE OF FIRST ISSUE (-) 3,998.92
NET INVENTORY VALUE $ 2,365.38

HHB 4/64th ADA

DA FORM 3234-1-R, AUG 87 EDITION OF AUG 84 IS OBSOLETE

Figure 14-10. Recapitulation of totals from DA Forms 3234-1-R

CHAPTER 15

HEADCOUNT PROCEDURES

GENERAL

Each person entering the dining facility to consume a meal must show proper identification and sign a headcount form. Proper headcount procedures ensure that the correct amount of credits are applied to the dining facility account.

HEADCOUNT

The headcount is the record of attendance at each meal. During the meal period, the FSS or contractor must be available to give advice when it is needed and to help in special situations. After the meal, he must consolidate the information gathered by the headcounter and post it to the accounting records.

Instructions

Usually, headcounters are unit members chosen from a duty roster or contractor employees. The FSS or contractor must brief them and give them written instructions. The briefing and instructions should cover routine duties and any special situations. AR 30-1, Appendix E contains sample SOPS for headcounters. All standing operating procedures must be updated as changes occur, such as changes in meal prices.

Routine duties. Headcounters must check all personnel to ensure that they are authorized to dine in the facility and that they sign the proper headcount forms. They must also identify those diners who are required to pay cash for the meal and collect the correct amount of money. DA Form 3032 is used to record the signatures of diners who are authorized to eat meals without paying. A separate DA Form 3032 is used for each category of diner (permanent, transient, or common service reimbursement). The DD Form 1544 is used to record cash payments from diners not authorized to eat meals at government expense. The DA Form 4808-R shows the food cost and any applicable surcharge for each category of diner. To make the headcounters' job easier, the FSS or contractor can give them a job aid, such as a decision matrix, as part of the written instructions. A job aid is a guide that can help the user make routine decisions, such as what form to use and whether to collect a surcharge. Procedures vary from installation to installation, so job aids should be developed to fit your needs.

Special situations. Prepare the headcounters for special situations. For example, if you expect a group to be recorded on headcount records with a one-line entry, tell the headcounters when the group will arrive, who will be in charge, and how to handle the paperwork. If diners who are not unit members are expected, tell the headcounters how to record their attendance as well. If possible, give the headcounters a list of such diners' names. Give them a list of meal card numbers for meal cards that have been reported lost or stolen. Tell them to confiscate these cards and to notify you immediately should someone attempt to use a card that had been reported as lost or stolen. You cannot anticipate every contingency, so tell the headcounters to contact you when situations arise which have not been covered in the briefing instructions.

CHANGE FUND

If your dining facility receives cash payments frequently, the commander may want, or the contract may require, a change fund established. This fund will be kept in the safe and used by the headcounter to make change. Except for contractor-operated facilities, the local FAO can assist in establishing a change fund.

CASH RECEIPTS

The DA Form 3546-R, DD Form 1131, and DD Form 1544 are used to account for cash and the cash sheets. The DD Form 1544 is a booklet of cash sheets and a cash meal payment sheet register. The unit's FSO, designated official, or the contractor issues cash sheets to the FSS or contract manager or his designated representative. The cash sheets must be guarded carefully. If one is lost, there wil be a formal investigation. When a sheet is issued to the headcounter, have the headcounter sign DA Form 3546-R next to the sheet number. After the meal period has ended, the headcounter must return the cash sheet along with the cash that has been collected. The cash is then counted and recorded in the *CASH-TURNED-IN* column. Next, check the cash sheet. Add together the food costs and surcharges for the meal. The total should equal the amount of cash turned in. If there is a difference, record the difference in the CASH +/- column of DA Form 3546-R, and explain the difference in the *REMARKS* block of the cash sheet and on the back of DA Form 3546-R. The FSS must then ensure that cash is secured in a safe until it is returned to the FSO according to requirements of AR 30-1. The FSO or contractor turns cash in to the local FAO in accordance with AR 30-1 or the food service contract. The cash is turned in with DD Form 1131, which is stamped by the finance officer. The FAO will give the FSS or contractor a copy of the stamped DD Form 1131 which will be kept in the dining facility files in accordance with AR 25-400-2.

CONSOLIDATION AND POSTING

Consolidate information from the DD Form 1544 cash sheets and DA Forms 3032 onto DA Form 3033. Figure 15-1 (page 15-2) shows how this information is consolidated. At the end of each issue cycle, post the data from DA Form 3033 to DA Form 2970 as shown in Figure 15-2 (page 15-3) and to DA Form 3980-R as shown in Figure 14-6 (page 14-10). The DA Form 2970 is forwarded to the TISO for posting to the dining facility account and use in reporting to MACOMs. Instructions for completing the DA Form 2970 are in AR 30-1.

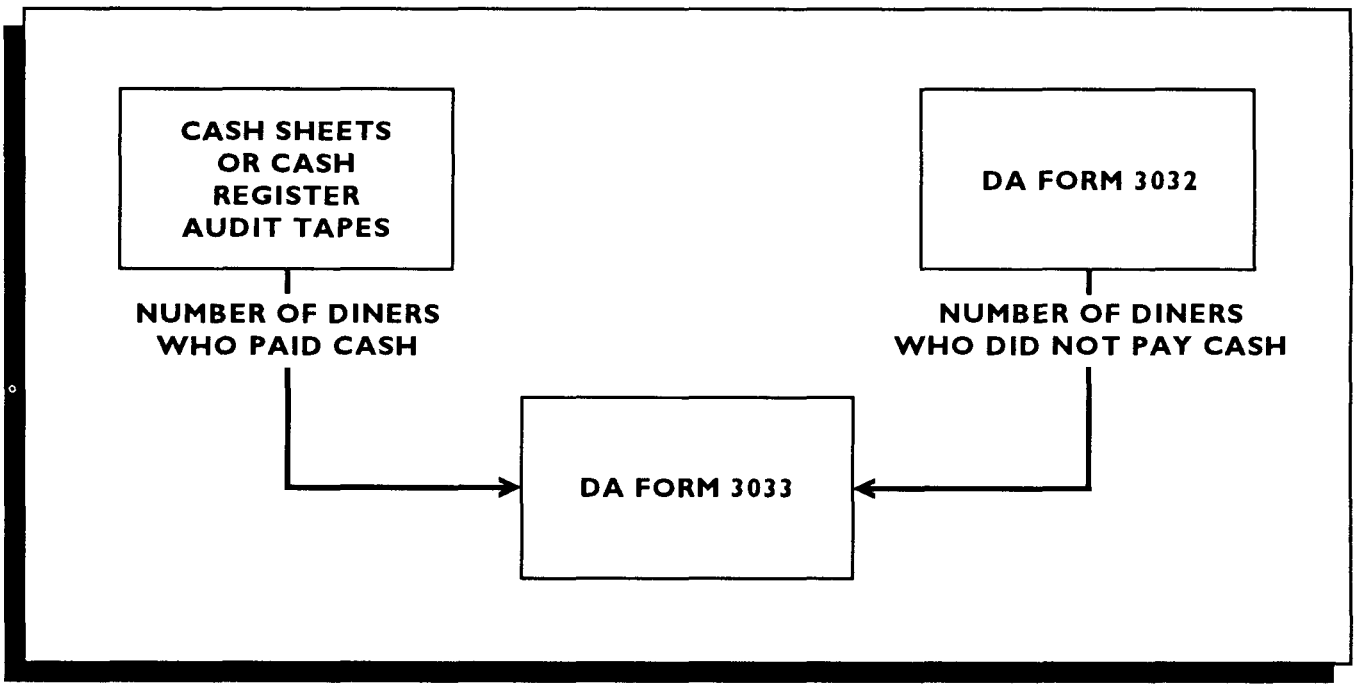


Figure 15-1. Headcount posted to DA Form 3033

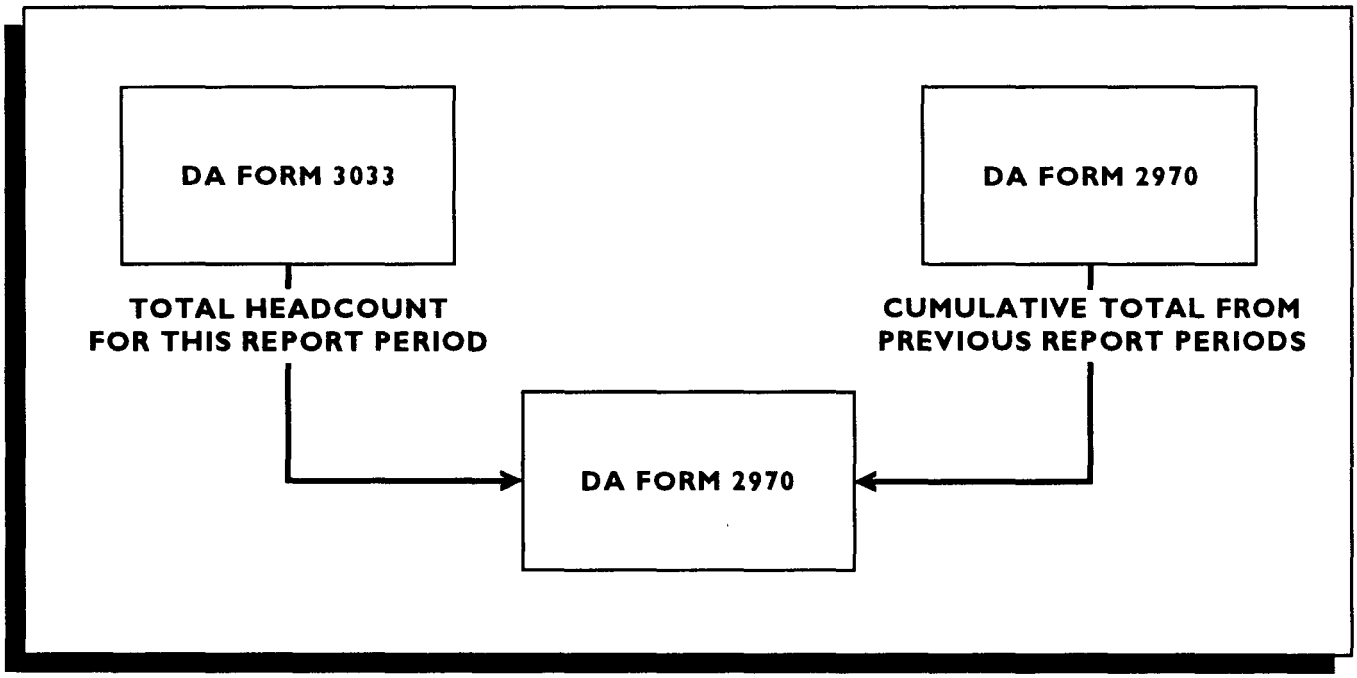


Figure 15-2. Headcount posted to DA Form 2970

CHAPTER 16

PRODUCTION

GENERAL

Production schedules, recipes, cooking methods, and procedures and the use of herbs and spices are discussed in this chapter. Also covered are the use and care of kitchen utensils.

PRODUCTION SCHEDULE

The primary tool used for the daily scheduling of meals is the DA Form 3034. This form provides all the information a cook needs for preparing a meal. Figure 16-1 (page 16-2) is a sample production schedule which illustrates the following:

- Food items to be prepared and served.
- Name of cook who is to prepare each item.
- Portions to prepare.
- Portions actually prepared.
- Recipe numbers from TM 10-412 or other source.
- Time to start preparing or cooking each item.
- Special instructions for preparing, cooking, or serving a particular item.
- Leftovers to be used in subsequent meals.
- Leftovers to be discarded.
- Comments on how saved leftovers will be used, why leftovers were discarded, or number of seconds served.
- Any other information not covered.

SENSITIVE AND HIGH-DOLLAR ITEM DISPOSITION

The FSS must document the use of sensitive (coffee) and high-dollar (meat) items each day. DA Form 3034-1 is used to record the disposition of all meat, fish, poultry, commercial pastries, and coffee. MACOM and installation commanders may require the addition of other items when considered necessary. The DA Form 3034-1 is prepared by the FSS at the same time that the production schedule is prepared. (See AR 30-1.) Figure 16-2 (page 16-4) is a sample DA Form 3034-1.

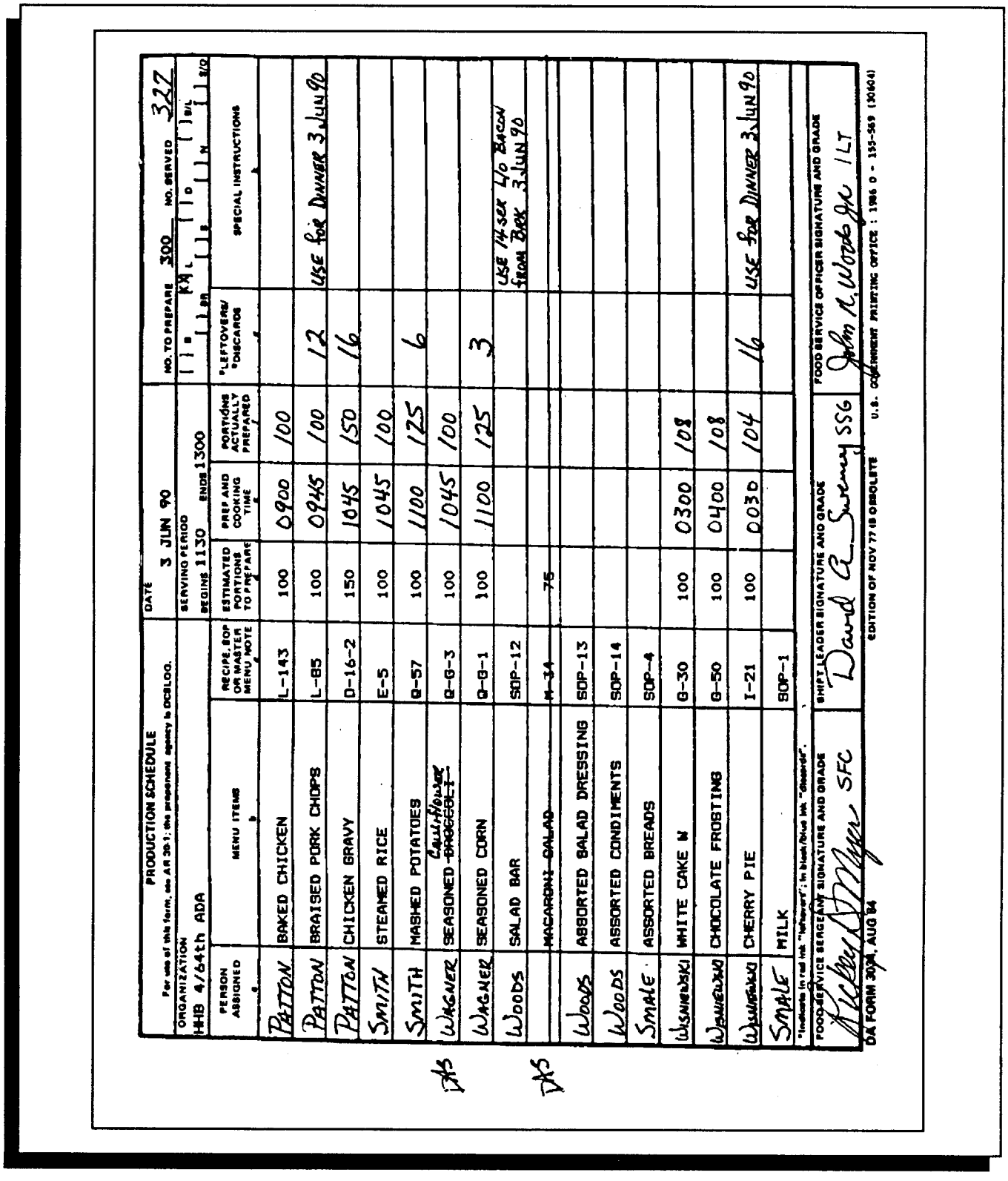
RECIPES

Recipes are instructions that explain how to prepare a food product. Army recipes are in TM 10-412. The Master Menu also includes additional recipes and supplemental instructions for preparing items not contained in TM 10-412. Food service personnel must refer to these recipes and instructions for quantities of ingredients; methods of combining; cooking methods, times, and temperatures for cooking; and the number and size of servings the recipes will yield. They also must be able to convert measurements in recipes to prepare a desired number of servings. Many recipes contain informational notes on how to prepare an item or a variation using alternate methods or equipment. The FSS should indicate any notes that the cook is to follow in the special instructions column of the production schedule.

Using Recipe Cards

Recipes should be followed carefully. Use the following procedures as a guide:

- Read the recipe card before starting to cook. If any cooking terms or methods are new, ask for assistance.
- Assemble all utensils and ingredients you need. Measure or weigh the ingredients accurately.
- Preheat cooking equipment only long enough to reach the temperature given on the recipe card.
- Follow the recipe card in setting up the equipment you are going to use.
- For successful results, follow preparation procedures exactly as stated on the recipe cards.
- Follow directions for removing cooked products from the cooking utensil. Be careful while handling and serving the finished product.



PRODUCTION SCHEDULE

For use of this form, see AR 30-1; the proponent agency is DCSLOG.

DATE: 3 JUN 90

NO. TO PREPARE: 300 — NO. SERVED: 327

ORGANIZATION: HHB 4/64th ADA

SERVING PERIOD: BEGINS 1130 ENDS 1300

PERSON ASSIGNED	MENU ITEMS	RECIPE, SOP OR MASTER MENU NOTE	ESTIMATED PORTIONS TO PREPARE	PREP AND COOKING TIME	PORTIONS ACTUALLY PREPARED	LEFTOVERS/ DISCARDS	SPECIAL INSTRUCTIONS
PATTON	BAKED CHICKEN	L-143	100	0900	100		
PATTON	BRAISED PORK CHOPS	L-85	100	0945	100	12	USE for DINNER 3 JUN 90
PATTON	CHICKEN GRAVY	D-16-2	150	1045	150	16	
SMITH	STEAMED RICE	E-5	100	1045	100		
SMITH	MASHED POTATOES	Q-57	100	1100	125	6	
WAGNER	SEASONED ~~BROCCOLI~~ Cauliflower	Q-G-3	100	1045	100		
WAGNER	SEASONED CORN	Q-G-1	100	1100	125	3	
WOODS	SALAD BAR	SOP-12					USE 14 ser 4/o Bacon from Brk 3 JUN 90
	~~MACARONI SALAD~~	M-34	~~75~~				
WOODS	ASSORTED SALAD DRESSING	SOP-13					
WOODS	ASSORTED CONDIMENTS	SOP-14					
SMALE	ASSORTED BREADS	SOP-4					
WISNIEWSKI	WHITE CAKE W	G-30	100	0300	108		
WISNIEWSKI	CHOCOLATE FROSTING	G-50	100	0400	108		
WISNIEWSKI	CHERRY PIE	I-21	100	0030	104	16	USE for DINNER 3 JUN 90
SMALE	MILK	SOP-1					

"Indicate in red ink "leftovers"; in black/blue ink "discards".

FOOD SERVICE SERGEANT SIGNATURE AND GRADE: Richard T. Miller SFC

SHIFT LEADER SIGNATURE AND GRADE: David A. Sweeney SSG

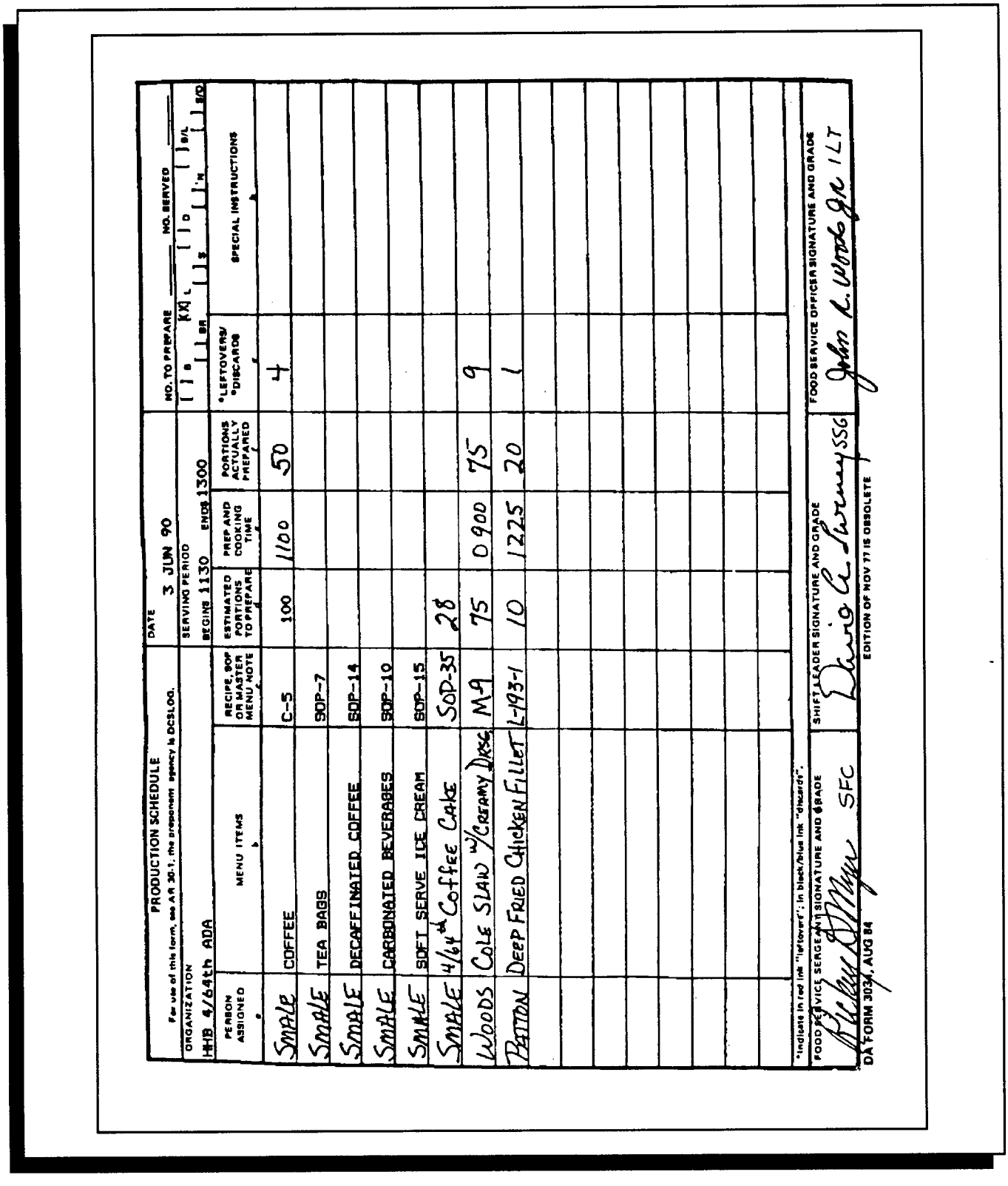
FOOD SERVICE OFFICER SIGNATURE AND GRADE: John M. Woods Jr 1LT

DA FORM 3034, AUG 84 EDITION OF NOV 77 IS OBSOLETE U.S. GOVERNMENT PRINTING OFFICE : 1986 0 - 155-569 (30604)

DAS

DAS

Figure 16-1. Sample production schedule



PRODUCTION SCHEDULE

For use of this form, see AR 30-1; the proponent agency is DCSLOG.

DATE: 3 JUN 90

ORGANIZATION: HHB 4/64th ADA

SERVING PERIOD: BEGINS 1130 ENDS 1300

NO. TO PREPARE: [ ] B [X] L [ ] D [ ] S/L [ ] BR [ ] S [ ] M [ ] S/D

NO. SERVED: _____

PERSON ASSIGNED	MENU ITEMS	RECIPE, SOP OR MASTER MENU NOTE	ESTIMATED PORTIONS TO PREPARE	PREP AND COOKING TIME	PORTIONS ACTUALLY PREPARED	*LEFTOVERS/ *DISCARDS	SPECIAL INSTRUCTIONS
SMALE	COFFEE	C-5	100	1100	50	4	
SMALE	TEA BAGS	SOP-7					
SMALE	DECAFFINATED COFFEE	SOP-14					
SMALE	CARBONATED BEVERAGES	SOP-10					
SMALE	SOFT SERVE ICE CREAM	SOP-15					
SMALE	4/64th Coffee Cake	SOP-35	28				
WOODS	Cole SLAW w/Creamy Dsg	M9	75	0900	75	9	
PATTON	Deep Fried Chicken Fillet	L-193-1	10	1225	20	1	

*Indicate in red ink "leftovers"; in black/blue ink "discards".

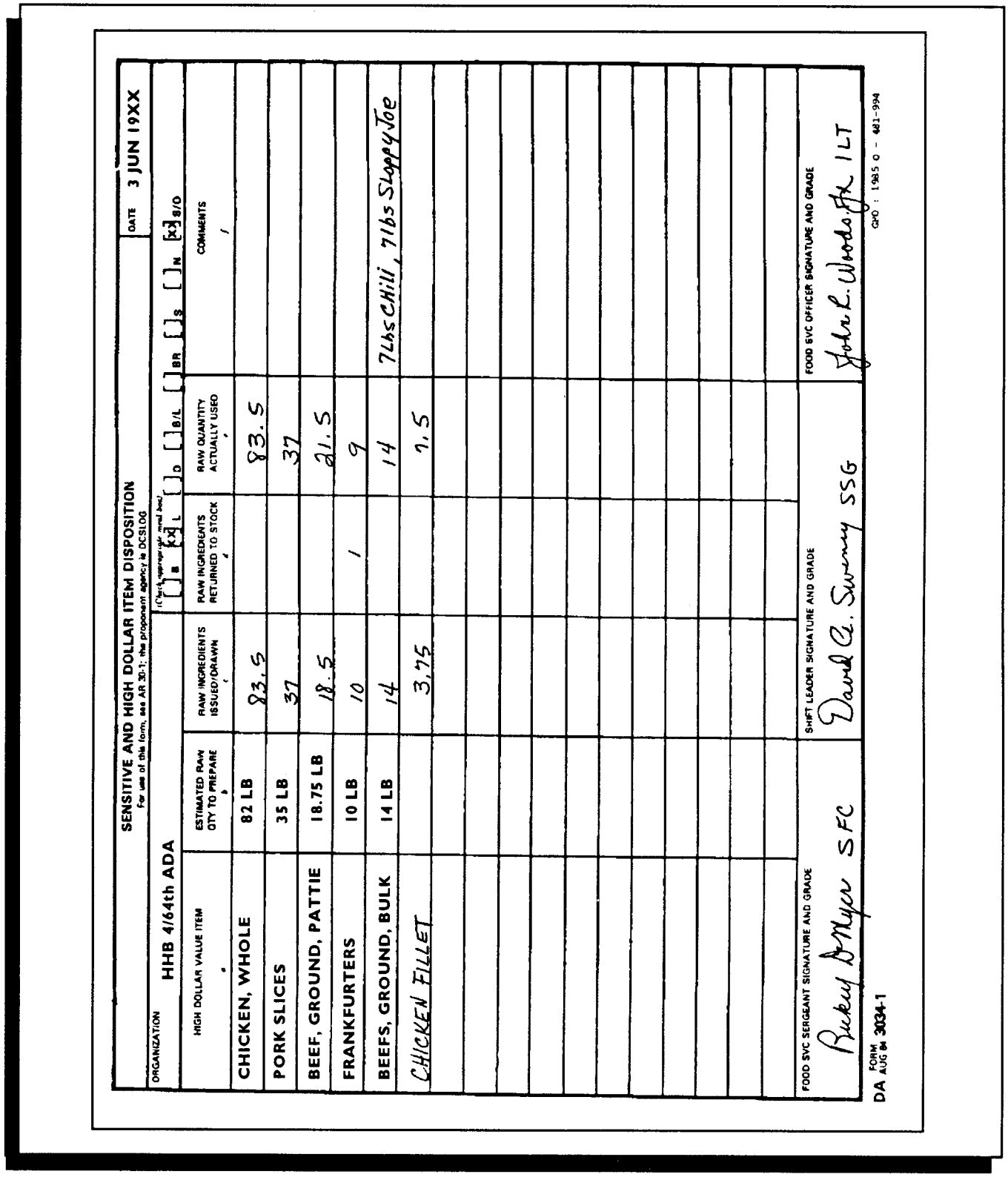
FOOD SERVICE SERGEANT SIGNATURE AND GRADE: SFC

SHIFT LEADER SIGNATURE AND GRADE: SSG

FOOD SERVICE OFFICER SIGNATURE AND GRADE: 1LT

DA FORM 3034, AUG 84 EDITION OF NOV 77 IS OBSOLETE

Figure 16-1. Sample production schedule (continued)



SENSITIVE AND HIGH DOLLAR ITEM DISPOSITION
For use of this form, see AR 30-1; the proponent agency is DCSLOG

DATE: 3 JUN 19XX

ORGANIZATION: HHB 4/64th ADA

[ ] B [X] L [ ] D [ ] B/L [ ] BR [ ] S [ ] N [X] S/O

HIGH DOLLAR VALUE ITEM	ESTIMATED RAW QTY TO PREPARE	RAW INGREDIENTS ISSUED/DRAWN	RAW INGREDIENTS RETURNED TO STOCK	RAW QUANTITY ACTUALLY USED	COMMENTS
CHICKEN, WHOLE	82 LB	83.5		83.5	
PORK SLICES	35 LB	37		37	
BEEF, GROUND, PATTIE	18.75 LB	18.5		21.5	
FRANKFURTERS	10 LB	10	1	9	
BEEFS, GROUND, BULK	14 LB	14		14	7lbs Chili, 7lbs Sloppy Joe
CHICKEN FILLET		3.75		1.5	

FOOD SVC SERGEANT SIGNATURE AND GRADE: Bucky Dwyer SFC

SHIFT LEADER SIGNATURE AND GRADE: David C. Swamy SSG

FOOD SVC OFFICER SIGNATURE AND GRADE: John L. Woodcliff 1LT

DA FORM AUG 84 3034-1

GPO : 1985 O - 481-994

Figure 16-2. Sample DA Form 3034-1

Adjusting Quantities

The recipes in TM 10-412 are based on 100 servings. Recipes may be increased or decreased by following the conversion charts in TM 10-412 under general information. The cook may calculate the quantities of ingredients required and write the adjusted quantities on the recipe card in pencil.

Changing Seasonings

The FSS may change seasonings or specified quantities of seasonings in a recipe based on experience, training, and diner preference. Always make sure the changes will be acceptable to the diners.

Using Standardized Measurements

Success in cooking requires accuracy at all times. Table 16-1 (page 16-6) shows units of measure commonly found in recipes, lists their abbreviations, and shows their equivalents in other units of measure. Table 16-2 (page 16-7) shows you how to convert measurements from one to another. Accuracy results when ingredients are carefully weighed or measured. To ensure accuracy, scales should be properly calibrated. If scales are not available, ingredients can be measured using the procedures below.

Dry ingredients. Place dry ingredients, such as flour, granulated sugar, and dried milk, in the measuring utensil. Level the ingredients with the straight edge of a knife. If using a recipe that calls for sifted flour or when measuring by volume, sift the flour first. If a sifter is not available, loosen the flour with a hand whip before you measure it. Stir dried milk and meal lightly with a fork or spoon, but do not sift them. Sift granulated sugar only if it is lumpy.

Brown sugar. Pack brown sugar firmly into the measuring utensil. If the sugar is lumpy, break lumps with a rolling pin before measuring it.

Baking powder and spices. Stir baking powder and spices lightly before measuring them. First overfill the spoon, then level the contents of the spoon with the straight edge of a knife.

Solid shortening. Press shortening firmly into the measuring utensil. Level the contents of the spoon with the straight edge of a knife. An alternative method for measuring solid shortening is to use a larger-than-required utensil in which a portion of liquid has been added. Then add the shortening required by the recipe.

Liquids. When measuring liquids, place the measuring utensil on a level surface and fill to the mark which indicates the amount required. Do not overfill this type of utensil.

Using Mixing Methods

Use the mixing method given in the recipe. If you substitute one method for another, the results may not be satisfactory.

Stirring. Stirring is moving ingredients in a circle with a utensil such as a spoon or paddle. Use mechanical mixers for mixing large batches. Set the mixer for slow or medium speed so that the speed of the beaters will be equivalent to the speed of hand stirring. Select a low speed for mixing a thin liquid into a thick one. Also, make sure the mixing container is large enough to prevent spilling.

Beating. Beating is making a mixture smooth by moving a utensil in a fast, regular, circular motion to incorporate air into a product. Products can also be beaten in a mixing machine with the beater accessory.

Whipping. Whipping is combining ingredients rapidly with a wire whip to increase the volume by incorporating air.

Folding. Folding is incorporating an ingredient into a mixture by gentle turning the item over without stirring or beating the mixture.

Table 16-1. Measurement equivalents

UNIT	ABBREVIATION	EQUIVALENT
gallon	gal	4 quarts
quart	qt	2 pints
pint	pt	2 cups
cup	c	8 fluid ounces
fluid ounce	fl oz	1/8 cup, 2 tablespoons
tablespoon	tbsp	1/2 fluid ounce, 3 teaspoons
teaspoon	tsp	1/6 fluid ounce, 1/3 tablespoon

STANDING OPERATING PROCEDURES

SOPs must be written to provide detailed instructions for those menu items not listed in TM 10-412. For many FSSs this can be a difficult, time-consuming task. Many things must be taken into consideration when preparing an SOP for dining facility operations.

SOPs must be based on the type of equipment available. While some facilities may have bread dispensers, soft-serve ice cream dispensers, automatic meat slicers, and so forth, others may not. Each SOP would have to address the conditions of the facility for which it was developed.

SOPs must also consider the number of personnel that the facility supports. The average number of personnel subsisted in the facility will indirectly define the amounts of a particular item with which the FSS will want to start the serving period. If your facility serves 300 per meal and the item you are preparing is frozen orange juice (32-ounce can), you might indicate to prepare 12 cans for the start of the meal serving period and then replenish as needed. However, if your facility serves 35 per meal, you would most likely start with only two cans of juice.

Appendix C provides a sample SOP that can be tailored for use in your dining facility to save time and effort. Remember, each operation is somewhat different. Think out your instructions and make them as simple and direct as possible. The newest most inexperienced member of your team must be able to understand how you want each item prepared. When preparing your SOP, group together similar items such as butter patties with melted butter; jams, jellies, individual servings of dressings with jar types and sizes; bulk milk with 1/2 pints and eggnog, and so on.

SOPs must be updated as changes occur. For example, include changes in meal service hours, prices, or number of diners supported.

COOKING METHODS

The two basic methods used to cook foods are moist heat and dry heat. You may also have to combine methods to prepare a food item. For example, some recipes call for panfrying followed by braising. These methods are introduced below and discussed in Chapter 18. Terms are fully explained in the glossary.

Moist Heat

Foods cooked by this method are simmered, stewed, boiled, or steamed. This type of cooking is done in a liquid (except fat) or in steam.

Dry Heat

Foods cooked by this method are broiled, roasted, baked, grilled, panfried, deep-fat fried, or panbroiled. This type of cooking is done without adding a liquid (except fat).

KITCHEN UTENSILS

Use the correct utensils for best results. The following guidance will help in utensil selection:

Pots and Pans

Pots and pans come in many sizes and types. Select the proper size and type for the recipe you are using. Clean them thoroughly before and after each use.

Table 16-2. Measurement conversion

FROM / TO	GAL	QT	PT	C	FL OZ	TBSP	TSP
GAL		Divide by 4	Divide by 8	Divide by 16			
QT	Multiply by 4		Divide by 2	Divide by 4			
PT	Multiply by 8	Multiply by 2		Divide by 2			
C	Multiply by 16	Multiply by 4	Multiply by 2		Divide by 8	Divide by 16	
FL OZ		Multiply by 32	Multiply by 16	Multiply by 8		Divide by 2	Divide by 6
TBSP				Multiply by 16	Multiply by 2		Divide by 3
TSP					Multiply by 18	Multiply by 3	

HOW TO USE THIS TABLE

To convert a measurement from one unit to another, find the given unit in the top row and the desired unit in the left column. Find the box where the row and the column meet, and perform the mathematical computation. The result is an equal amount in the desired unit. For example, to convert 6 ounces to tablespoons, find the block where the FL OZ column meets the TBSP row. The instruction is to multiply by 2.

Example: 6x2 = 12, so 6 FL OZ equal 12 tablespoons.

Knives

Each knife is designed for a certain job and should be used only for that job. Table 16-3 (page 16-8) shows the knives most frequently used.

Sharpening. Sharpen knives on a medium-fine-grade Carborundum oilstone. Never grind a knife on a power- or hand-driven stone because this treatment will remove the temper from the cutting edge. The correct way to sharpen a knife with a mounted sharpening stone is shown in Figure 16-3 (page 16-9). If the entire stone is used for sharpening the knife, the stone will not "hollow-out" at a particular spot. Do not use a newly sharpened knife until the blade and handle are thoroughly cleaned.

Steeling. After the knife is sharpened on a stone, the blade must be trued with a butcher's steel. There is a technique to handling the steel, which you can master with practice. Procedures for steeling a knife are shown in Figure 16-4 (page 16-9).

Thermometers

Thermometers take the guesswork out of cooking. The recipes indicate when you should use them.

Avoid using mercury-filled glass thermometers in storing, handling, preparing, or serving subsistence in any dining facility. If the glass breaks, mercury and glass could contaminate the food. There are many types of metal thermometers available for use in dining facilities.

Oven thermometer. Ranges are equipped with regulators and thermostats. They control the oven temperature so foods can be baked at an even heat. However, the oven thermostat should be calibrated periodically to verify the temperature. Even if an oven has a thermostat, place an oven thermometer inside it during the baking process to make sure that correct temperatures are used.

Deep-fat thermometer. Use a deep-fat thermometer for deep-fat frying. The thermometer will show when the fat has reached the correct temperature for cooking a particular food. It will also show the temperature of the fat throughout the cooking process. During the cooking process, use a thermometer to verify the accuracy of the thermostat on the deep-fat fryer. Place the probe below the surface of the melted fat, but do not let it touch the bottom of the container.

Refrigerator thermometer. Use a metal thermometer in refrigerators to determine if the proper temperature is being maintained. TB MED 530 gives allowable temperature ranges. Glass thermometers should not be used.

Meat thermometer. A meat thermometer is the most dependable way to determine when a meat or poultry food item has reached the desired degree of doneness. When the center of the meat reaches the temperature specified in the recipe, the meat is done.

Surface temperature thermometer. Use the surface temperature thermometer to check grill surface cooking temperatures. Check the temperature at several spots on the grill to make sure the temperature is uniform across the entire grill surface.

NOTE: *DO NOT use mercury-filled glass thermometers in your dining facility!*

Table 16-3. Knives used in a dining facility

KNIFE	TYPE	USE	DESCRIPTON
	Boning knife	Cutting through joints. Cutting close around bones to separate the meat from the bones.	Short, narrow, stiff blade; narrow bevel*.
	Steak knife	Cutting steaks and roasts.	Long, wide blade; wide bevel*
	Paring knife	Peeling fruits and vegetables.	Small, narrow blade; narrow bevel*.
	Cooks' knife	Cutting, slicing, dicing, or chopping.	Large, wide blade; wide bevel*.
*The bevel is the part of the blade sharpened to make the cutting edge of the knife.			

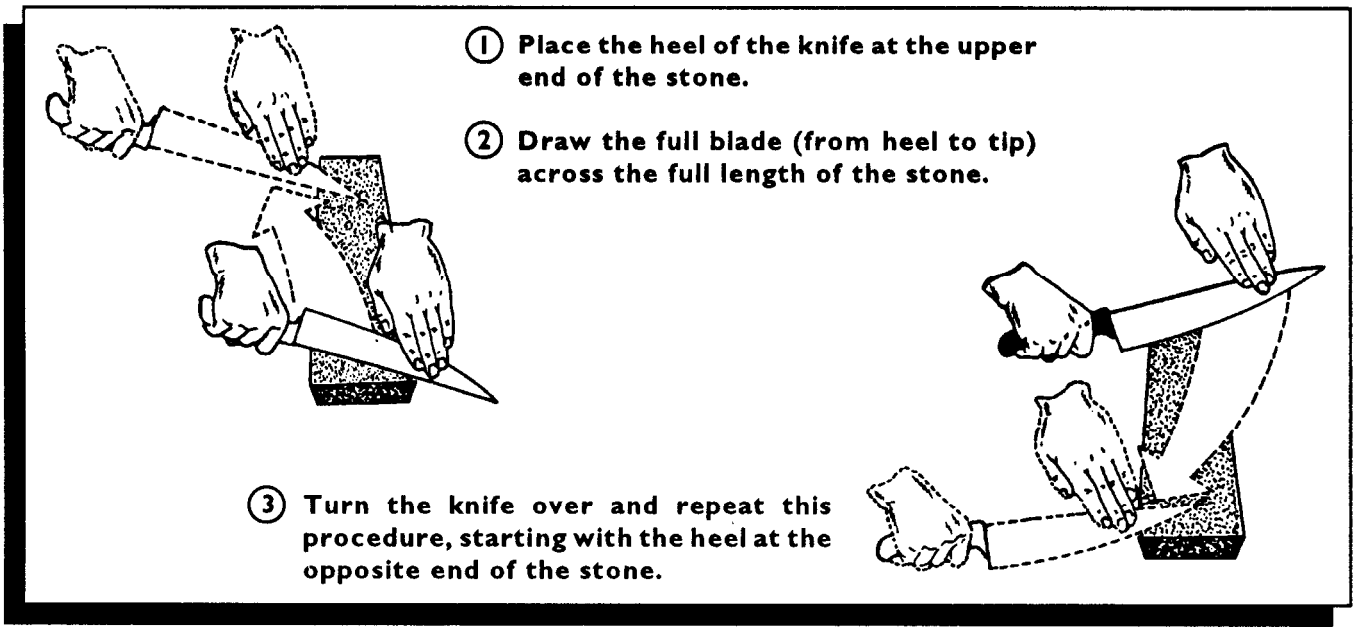


Figure 16-3. Sharpening a knife

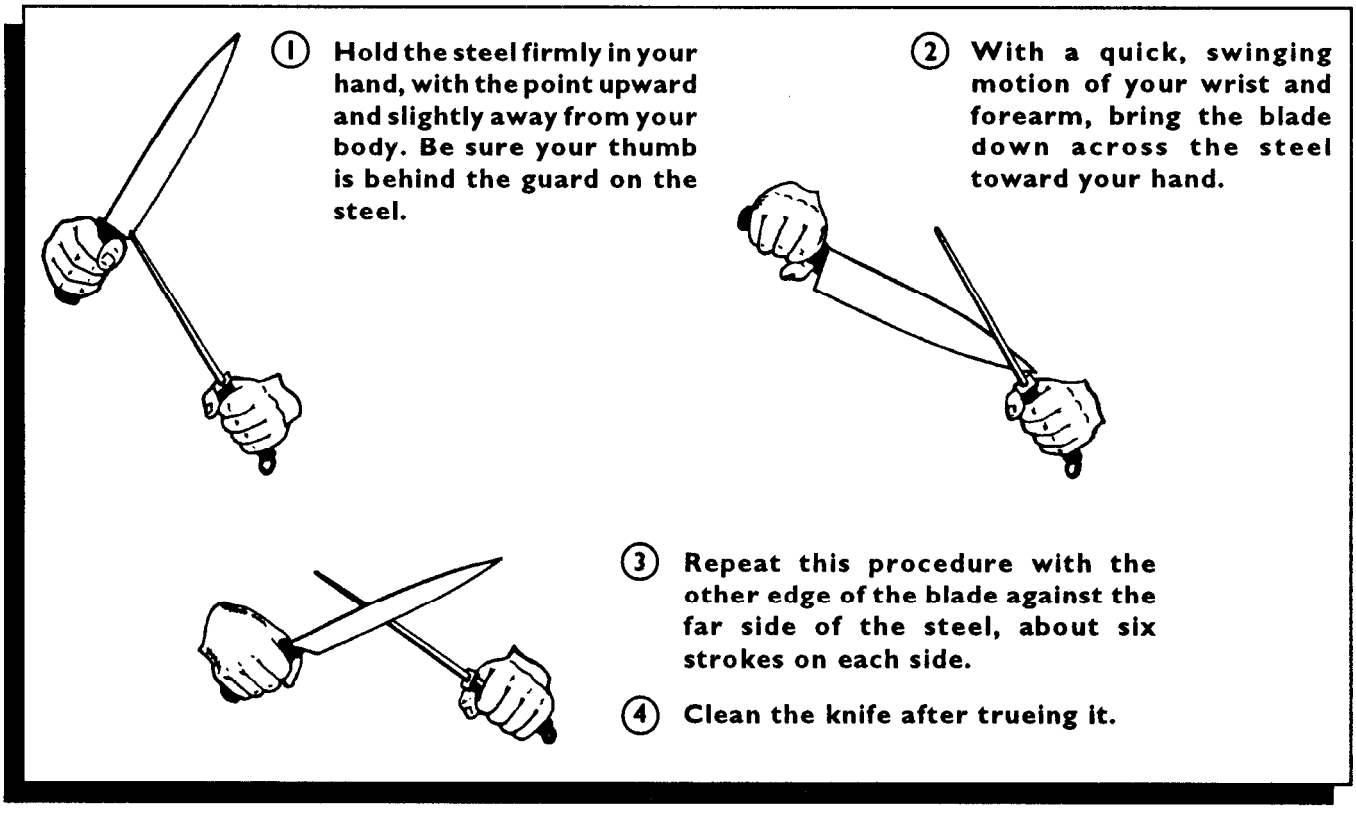


Figure 16-4. Steeling a knife

Miscellaneous Kitchen Items

Miscellaneous kitchen items and their care are described below.

Wire whips, meat tenderizers, vegetable graters, sieves, rolling pins, and colanders gather food particles easily. Wash these items in hot water and detergent, then rinse, sanitize, and let them air-dry.

Use only authorized cleansers on stainless steel or chromium-plated utensils. Do not use harsh scouring powder. You can remove mild discoloration on stainless steel with vinegar and salt or with lemon juice.

To calibrate the 10-pound scale, keep the scale tray on the scale and remove the scale plate by turning it counterclockwise. Add or remove metal pellets to balance the scale.

GARNISHES

Garnishes do much to make a meal attractive. Information on making specific garnishes may be obtained from the USAQMC&S. In garnishing food, there are several guidelines to follow:

- Plan and prepare garnish ahead of time. Do not wait until the food is ready to go to the serving line and then toss on a garnish as an after thought.
- Use a garnish that is eye-appealing in shape, color, and texture.
- Always use a garnish that is edible.
- Do not overgarnish.
- Do not garnish foods that have a "built-in" garnish. For example a tossed vegetable salad or a cake iced with a frosting that complements the color and flavor of the cake needs no garnish.
- Garnish only food items, not the serving line or service table.

SEASONING

Use salt, spices, and herbs to enhance the flavor of foods. These are described in this paragraph.

Salt

Salt is an important seasoning used in preparing foods. It is a standard ingredient in most recipes. Salt brings out the natural food flavor. Even carbohydrate foods, such as candy, require some salt. Foods that have distinctive flavors require less salt than those that do not. Exercise caution and do not overseason.

Flavored Salts

Flavored salts are a blend of ground seasoning and table salt. Celery salt is a blend of salt and ground celery seed. Onion salt is a blend of salt and onion powder, a ground product of dehydrated onions. Garlic salt is a blend of garlic powder, a ground product of dehydrated garlic. Use flavored salts in salads, salad dressings, stews, tomato dishes, sauces, and soups. With meat dishes, use garlic and onion salts; with fish dishes, use celery salt.

Spices and Herbs

Tables 16-4 (page 16-1 1) and 16-5 (page 16-12) list some popular spices, blends, and herbs and give their uses.

LEFTOVERS

Careful menu planning, preparation, and serving should keep leftovers to a minimum. If practical, do not serve a leftover item in its original form. For example, you can slice baked ham and roast turkey or beef and use them as cold cuts. Or you may add turkey, veal, and other meat items to salads. You can also combine leftover meats with sauces or gravies or with other leftover vegetables for individual pot pies, stews, or casseroles. Potatoes may be used in these dishes as well as in potato salads or potato pancakes. You can combine vegetables as stated above, or you can serve them with a sauce or mixed with other vegetables. Leftover salad vegetables may be kept crisp and served as part of the salad bar or combined with other vegetables to form a salad.

Table 16-4. Spices

SPICE	GENERAL USES
Allspice:	
Whole	Pickling, spicing meats, seasoning gravies.
Ground	Puddings, pies, cakes, relishes, tomato sauces, dressings.
Anise	Baked products, candies, puddings, sweet sauces, beverages.
Caraway seed	Breads and rolls, cottage and soft mild cheeses, new cabbage, turnips, chowders, pickling.
Cardamon	Baked products, vegetables, pickling.
Cayenne	Meats, sauces, fish, eggs, gravies, seafoods, salads.
Celery seed:	
Whole	Pickling, coleslaw, potato salad, salad dressings.
Ground	Soups, stews, tomato dishes, fish.
Chili powder *(blend)*	Mexican dishes, cocktail sauces, stews, hamburgers, egg dishes, barbecue sauces.
Cinnamon:	
Stick	Pickling, preserving.
Ground	Puddings, baked products, stewed fruits, whipped cream, hot cereals, mincemeat, mashed sweet potatoes, cinnamon toast.
Cloves:	
Whole	Garnishes for ham and pork roasts, pickling, preserving, spiced syrups, beverages.
Ground	Baked products, puddings, stews, applesauce.
Cumin seed	Soups, deviled eggs, cheese dishes, meat pies, canapes, Mexican and Oriental dishes.
Curry powder *(blend)*	Salad dressings, chowder, scalloped tomatoes, curry sauce, curries of meat, fish, eggs, chicken.
Dill seed	Pickling, fish dishes, soups, sauces, salad dressings, sauerkraut.
Fennel seed	Soups, sauces, gravies, salads.
Garlic powder	Roasts, soups, stews, salads.
Ginger	Baked products, roast chicken, pot roasts, canned pears.
Horseradish	Condiments, sauces, pickling, dressings, gravies, oyster stew, fish and meat dressings, sweet sauces, chocolate desserts.
Mace	Baked products, pickling, fish sauces, gravies, oyster stew, fish and meat dressings, sweet sauces, chocolate desserts.
Mustard:	
Ground	Sauces, gravies.
Prepared	Salad dressings, ham, frankfurters, cheese.
Seed	Pork products, dressings, boiled beets, garnish for vegetable salads.
Nutmeg	Puddings, sauces, custards, baked products, pot pies, applesauce, doughnuts.
Paprika	Garnishes for salads, vegetables, meats, fish, goulash, salad dressings.
Pepper	General culinary purposes.
Poppy seed *(whole)*	Baked products, vegetables, vegetable salads, salad dressings.
Poultry seasonings	Meat and poultry dressings, meat loaves, omelets, hamburgers, biscuit doughs.
Pumpkin pie spice *(blend)*	Pumpkin dishes, cookies, buns, gingerbread, sweet potato pies.
Sausage seasonings	Meat loaves, sausages, pork products.
Sesame seed *(whole)*	Baked products, salads, sauces, fish, meat dishes.
Tumeric	Pickling, salads, mustard sauce, meat and egg dishes.

Table 16-5. Herbs

HERB	GENERAL USES
Basil *(sweet)*	Tomato paste and sauces, soups, stews, meat pies, lamb dishes.
Bay leaves	Pickling, sauces, stews, soups, tomato mixtures, meat dishes, fish, chowders, boiled potatoes.
Marjoram	Poultry dressing, lamb dishes, stews, soup, hash, meat pies, scalloped potatoes, cheese dishes, sauces, sausage products.
Oregano	Pork dishes, stews, soups, meat sauces, omelets, gravies, vegetables, salads, salad dressings.
Parsley *(dried flakes)*	Garnishes, general culinary purposes.
Rosemary	Lamb dishes, stews, soups, dressings, fish, basting for roasts, egg dishes, potatoes, salads, salad dressings.
Saffron	Baked products, candies, stews, vegetables, sauces, coloring for beverages and foods.
Sage	Poultry and meat dressings, tomato and cheese dishes, dried beans, baked fish, salad greens, chowders, salad dressings.
Salad herbs	Salads, salad dressings, soups, stews, sauces.
Savory	Egg dishes, salads, soups, pea-bean dishes, poultry dressing, meat dishes, stews, gravies, chowders, salad dressings.
Tarragon	Sauces, salads, chicken, meats, egg dishes, tomato dishes.
Thyme	Sauces, dressing, stews, soups, chowders, salad dressings, poultry and meat (especially veal and pork) dishes.

Minimize the Size

Use small-batch preparation, progressive cooking, and knowledge of diner preferences to keep leftovers to a minimum.

Retaining Foods

Before you retain foods as leftovers, they must meet certain criteria. Food must--

- Be maintained at a safe temperature during preparation, holding, and service.
- Be protected against contamination during service by use of sneezeguards.
- Be served by an authorized individual using the proper utensils, or be individually wrapped or packaged.
- Be washed (especially hard-skinned fruit) before re-service.

Discarding Foods

Although foods may meet the above criteria to be retained as leftovers, some of these foods are unfit for re-serving. *DO NOT* retain the following items as leftovers:

- Foods which have been creamed or handled considerably (such as hashes, creamed meats, and most gravies and dressings).
- Highly perishable foods (such as most seafood).

Limitations on Leftovers

In addition to meeting criteria for retention as a leftover, there are several stipulations and limitations for holding, preparing, and serving leftovers.

Label leftover PHFs with DA Label 178 showing the date and time they were removed from service.

Retain PHF leftovers for no more than 24 hours if they are chilled to 45° F or below and no more than 5 hours if they are maintained hot (140° F or above.)

Reheat chilled leftovers intended for service to an internal temperature of 165° F. Offer leftovers one time, and then discard them.

Rules for Cooling

Potentially Hazardous Foods. Cool foods requiring refrigeration after preparation to an internal temperature of 45° F or below within four hours. Rapid cooling brings product temperatures to 70° F within two hours. Use one of the following rapid cooling methods when cooling PHFs:

- Place the food container in an ice bath and stir the food every 20 to 30 minutes.
- Portion food in shallow pans (3 inches or less) or small containers (2 gallons or less).
- Circulate cold water in a steam-jacketed kettle (where feasible).
- Store and stir food for a short time in a walk-in freezer.
- Immerse the cooking container in cold, running water while stirring the food.
- Distribute the food among several refrigerators.

During all handling, use an appropriate cover to protect food from contamination. Cover hot food to preclude any insulating dead space that would slow cooling.

FOOD-BORNE ILLNESS

Food must be protected from contamination, stored properly, and kept at the proper temperature. If it is not, the food may deteriorate and cause food-borne illness or result in loss from spoilage. Foods contaminated with disease-carrying microorganisms, toxins, or chemicals can cause illness or death.

Illness Factors

The eight most frequently cited factors involved in outbreaks of food-borne illness are--

- Failing to refrigerate foods properly.
- Failing to heat or cook foods thoroughly.
- Allowing infected food service workers to work in the facility.
- Preparing foods too far in advance of serving.
- Using raw or contaminated ingredients in foods that receive no further cooking.
- Allowing foods to remain at bacteria-incubating temperatures.
- Failing to reheat cooked foods to temperatures that kill bacteria.
- Allowing cross-contamination of cooked foods with raw items either by workers who mishandle foods or through improperly cleaned equipment.

Hazards

There are three main types of hazards associated with storing and handling foods. They are biological, chemical, and physical. The biological hazard is the most serious in the dining facility.

Biological. Bacteria will multiply quickly in the temperature "danger zone" of 45° F to 140° F. Therefore, foods susceptible to bacterial contamination should be kept outside this range as much as possible. Some food-borne illnesses and their causes are shown in Table 16-6 (page 16-14). Harmful bacteria can be killed by cooking foods to proper internal temperatures. See TB MED 530 for further guidance.

Chemical. These hazards result from the improper use of additives, poisonous metals, preservatives, and pesticides. Chemicals and metal products should be used only for their intended purpose. They should be stored properly and away from food-storage areas. Use proper containers for storing and preparing foods.

Physical. Faulty equipment can contaminate foods or be a safety hazard. Also, foods may be physically contaminated (dirt, glass fragments, and

wood splinters) when received in the dining facility. Food service personnel must constantly guard against physical contamination.

Table 16-6. Food-borne illnesses and their causes

ILLNESS	CAUSE
Staphylococcus	Improper refrigeration. Food handlers with cuts, wounds, coughs, or colds.
Botulism	Damaged cans or jars. Improper canning methods.
Salmonellosis	Poorly cooked poultry and poultry products, meats, eggs and egg products, fish, and dairy products. Cross-contamination from raw to cooked foods.
Streptococcus	Poor personal sanitation. Food handlers with coughs or colds. Food stored at the wrong temperature.
Bacillary Dysentery (Shigellosis)	Food contaminated by people, water flies, roaches, and rats.
Trichinosis	Pork or pork products not cooked to an internal temperature of 150 °F.
Clostridum Perfringens Food poisoning	Inadequately cooled and reheated meats.

Food Preparation

Food service personnel preparing foods and combining ingredients often make mistakes that can cause contamination. If temperatures are not controlled when food is prepared, held, and served, food-borne illness may result. Things to watch are described below.

Thawing. Thaw foods under refrigeration at temperatures of 45° F or below, under potable running water, or as part of the conventional cooking process. (See TB MED 530 for specific procedures.)

Correct Cooking Temperature. Although 140° F is adequate to prevent further bacterial growth, different products must reach certain internal temperatures to ensure that bacteria have been killed. Check thermometers for accuracy, and use them to ensure that proper temperatures have been reached. See Figure 16-5 (page 16-14) for required internal temperatures.

Breading. Discard all ingredients after breading food. They will have become contaminated. They should not be used again.

Poultry, poultry stuffings	165° F
Pork, pork products	150° F
Beef	145° F
Ground Beef	155° F
Seafood	140° F

Figure 16-5. Required internal temperatures

PART FIVE

FOOD PREPARATION AND SERVING IN GARRISON FACILITIES

CHAPTER 17

APPETIZERS, SOUPS, SAUCES, AND GRAVIES

APPETIZERS

Appetizers are small, tasty portions of food or drink that are attractively designed to whet the appetite. They are rarely included in the Master Menu except on special occasions such as Thanksgiving Day and Christmas.

Types

There are several different types of appetizers. Some of them are listed below.

Canapes. These are thin pieces of bread or toast which are topped with cheese, caviar, anchovies, meat spreads, or other food.

Hors d'oeuvres. These are small, tasty portions of food, which may be served hot or cold.

Dips. These are creamy mixtures of savory foods for scooping with potato chips, crackers, and vegetables.

Cocktails. These are portions of mixed fruit, fruit or vegetable juice, or seafood.

Recipes

TM 10-412 contains recipes and suggestions for serving chilled fruit cups, fruit or fruit juice cocktails, and shrimp cocktails. These appetizers are made from fresh, frozen, or canned foods. TM 10-412 also provides recipes for seasoned fillings for stuffed celery and recipes for chilled tomato juice cocktails. When preparing an appetizer that is meant to be served cold, start far enough in advance to allow time for chilling.

STOCKS

Stocks form the base for soups, sauces, and gravies. A stock can be made by simmering beef, pork, veal, or poultry and vegetables in water. Various soup and gravy bases may also be used to prepare a stock. While freshly prepared stocks are highly perishable and must be refrigerated, the commercially prepared soup and gravy bases are more shelf stable. General procedures for preparation and use of in-house prepared stock are described in this paragraph.

Making Stock

Proper preparation and use of stocks is vital to a quality product. Simmer beef, ham, or veal trimmings; chicken or turkey bones; or vegetables with seasonings added to make stock. Cooking times will vary according to the ingredients used. Strain the stock, cool it as quickly as possible, and remove the surface layer of hardened fat before you use the stock.

Using Stock

Stock that has been seasoned and thickened with cornstarch produces a sauce. Stock that has been thickened with a roux produces a gravy. Juices or pan drippings from meats are often used in gravy preparation. It is imperative that the right stock be used for a particular soup, gravy, or sauce. For example, a poultry stock would produce the best chicken or turkey rice soup, while a stock produced from ham would produce the best base for bean soup.

SOUP

Soup provides nourishment and stimulates the appetite. There are soups that should be served hot and others that should be served cold. They can be served as part of the short order, lunch, and dinner meals. Some specific types of soup are described in this paragraph.

Meat and Vegetable Soups

These soups are normally composed of a natural stock with or without a very limited quantity of a thickening agent to provide a base.

Bean and Potato Soups

These soups are normally self-thickened by the main ingredient (bean or potato).

Cream Soups

These are normally thickened with a flour-and-milk mixture. These soups require special handling as overheating or improper mixing procedures can cause curdling. When making a cream soup, add the milk just before serving. Heat the soup only to serving temperature. Do not let the mixture boil. Boiling causes the milk to curdle. When making cream of tomato soup, add the tomato mixture to the milk base to prevent curdling.

Dehydrated Soups

Dehydrated soups are normally quick and easy to prepare. They should be prepared according to the manufacturer's instructions for best results.

GRAVIES

Gravy is an important part of meat and poultry dishes. It brings out the flavor of the meat and provides many nutrients from the meat drippings and stock that make up its base. The recommended thickening agent is a cooked fat-and-flour mixture called roux. Good gravy has the characteristic flavor of the meat with which it is served. Serve the gravy hot. Never keep gravy as a leftover.

Gravy with Braised or Stewed Meat

If the braised or stewed meat was dredged in flour before it was browned, you will need little or no thickening in the gravy.

Brown Gravy

Make brown gravy from the drippings left from roasted meat following the steps in the TM 10-412 recipe. There are many variations of the basic recipe for brown gravy. For example, to make onion gravy, add sliced onions to the brown particles and fat, and cook the mixture slightly before adding the flour. Make cream gravy by substituting warmed, reconstituted nonfat dry milk for the stock which is usually added to the drippings. Make tomato gravy by substituting hot tomato juice for part of the stock.

Pan Gravy

Make pan gravy from drippings left from roasted or fried meat. Add hot water to the drippings. Scrape the browned particles from the sides and bottom of the pan. Heat and stir the gravy until the particles are dissolved. Season the gravy as necessary, but do not thicken the liquid.

SAUCES

Sauces are served as components of meat, poultry, and fish dishes; as meat, poultry, and fish accompaniments; and with vegetables and desserts. Sauces are used chiefly to bring out the flavor and to improve the appearance of foods. Often they add nutritive value. As a rule, the color, flavor, and consistency of the sauce should contrast with the food with which it is served.

White Sauce

White sauce has many uses. Its consistency may be thin, medium, or thick, depending on the

amount of flour you use in proportion to the other ingredients. Use medium white sauce in creamed dishes and casseroles and as a base for cheese sauce and egg sauce. Use thick white sauce with coquettes. Because white sauce is perishable, make it close to serving time. Discard leftover white sauce or leftover dishes containing white sauce.

Special Sauces

Some special sauces and the dishes with which they are used are given below:

- Use barbecue sauce with frankfurters, chicken, beef, and pork. TM 10-412 contains a recipe for barbecue sauce and various recipes for dishes made with it.
- Use pineapple and raisin sauce with meat and tartar sauce with fish. Recipes for these and other sauces listed in the Master Menu are contained in TM 10-412.

CHAPTER 18

MEAT, POULTRY, AND SEAFOOD

Section I

Meat

SERVING MEAT

Several types of meat are served in the dining facility. They are discussed below.

Fresh (Frozen) Meat

Army dining facilities use mostly portion-controlled, boneless beef. After the beef is boned, it is broken down and portioned into cuts such as steaks, roasts, diced beef, formed beef patties, and ground beef. Boneless beef requires less storage space, weighs less, and is easier to handle and prepare. Other meats served in dining facilities are portioned and formed cuts of veal, lamb, and pork.

Variety Meat

Liver and chitterlings, although meat, are classified as variety meat or meat specialities.

Prepared Meat

Luncheon meat, frankfurters, and sausages are examples of prepared or ready-to-serve meats served in dining facilities.

Cured or Smoked Meat

Cured meat is treated with salt or with some other natural or chemical curing agent (for example, corned beef). Smoked meat is meat cured with smoke. Smoking adds to the keeping qualities and flavor of the meat. The principal types of smoked meat are ham, bacon, and dried beef. (Most dried beef is smoked, although some is cured.)

Dehydrated Meat

Dehydration is the process of preservation through water removal, such as freeze dehydration. Examples of available products include beef patties, beef steaks, chicken, and pork chops as used in the B Ration.

COOKING MEAT

Meat is an important part of the soldier's diet and nutritional needs. For this reason, it must be prepared, cooked, and served properly. Less-tender cuts of meat can be highly acceptable when prepared according to the proper recipe. Care must be taken, as meat can be ruined by overcooking, which results in excessive shrinkage and loss of valuable nutrients.

Cooking Temperatures

Meats must be cooked at the temperature prescribed in the recipe. Meat cooked at a moderate temperature has less cooking loss, is juicier, and produces a better finished product than meat cooked at a higher temperature. Table 18-1 (page 18-1) presents ranges of cooking temperatures.

Table 18-1. Ranges of cooking temperatures

TEMPERATURES	CATEGORY
250°-275° F	Very slow
300°-325° F	Slow
350°-375° F	Moderate
400°-425° F	Hot
450°-475° F	Very hot
500°-524° F	Extremely hot

Degree of Doneness

The desired degree of doneness varies with the type of meat cooked. Beef and lamb can be served rare, medium, or well-done; veal can be medium to well-done; and pork must be well-done. Fresh pork must be cooked to an internal temperature of 150 degrees to kill the organisms that cause trichinosis. The exact temperature to which you cook pork will depend on the recipe card. Cook rare roast beef or rare beefsteak to an internal temperature consistent with the schedule in TB MED 530. Consult TB MED 530 for additional guidance in the preparation of rare roast beef. There are three methods of checking the degree of doneness.

Meat thermometer. Always use a thermometer, if available, to check the internal temperature of the meat. Meat should be cooked until the internal temperature reaches the temperature given in the recipe.

Time-weight ratio. If a thermometer is not available, doneness can be determined by cooking the product at the prescribed temperature for a given number of minutes for each pound of meat.

Fork test. Stick a steel fork into the center of the meat. Note the color of the juices that come out of the meat. Red means the meat is rare, and pink means it is medium. Brown means well done. Do not puncture the meat too much or too much juice will be lost. This test is acceptable but is not recommended. It is best used along with the time-weight ratio-method.

Seasoning

Some meats are seasoned before cooking, and others are seasoned during the cooking process. Season all meats cooked by moist heat and meat dishes, such as meat loaf and Salisbury steak (cooked with dry heat), before cooking. This allows the seasoning to cook into the meat and improve the flavor of the finished product. Lightly season a roast cooked by dry heat before you cook it. Never season meat to be grilled before you cook it, because salt tends to draw out the meat juices. When juices are drawn from the meat, the meat must be overcooked to develop the color. When grilling or frying, season the browned side, then cook the other side and season it.

THAWING AND TEMPERING FROZEN MEAT

Recipes in TM 10-412 are for thawed or tempered meat unless otherwise indicated. Thawing means to raise, under controlled conditions, the internal temperature of frozen meat to a level above 30° F. Tempering means to raise, under controlled conditions, the internal temperature of frozen meat to about 26° F to 28° F. This temperature range allows you to separate and handle frozen meat. Thaw or temper meat before cooking it to shorten the cooking time and to improve the quality of the finished product. Keep meat covered while thawing or tempering, and make sure there is ample room between the frozen pieces to permit good air circulation. Meat should be thawed in a manner that does not permit cross contamination. Do not thaw or temper meat at room temperature.

NOTE: *DO NOT refreeze thawed or tempered meat.*

COOKING MEAT BY DRY HEAT

As indicated in Chapter 16, dry-heat cooking is achieved when the product is cooked without the addition of an outside liquid. Methods of dry heat cooking are described in this paragraph.

Roasting and Baking

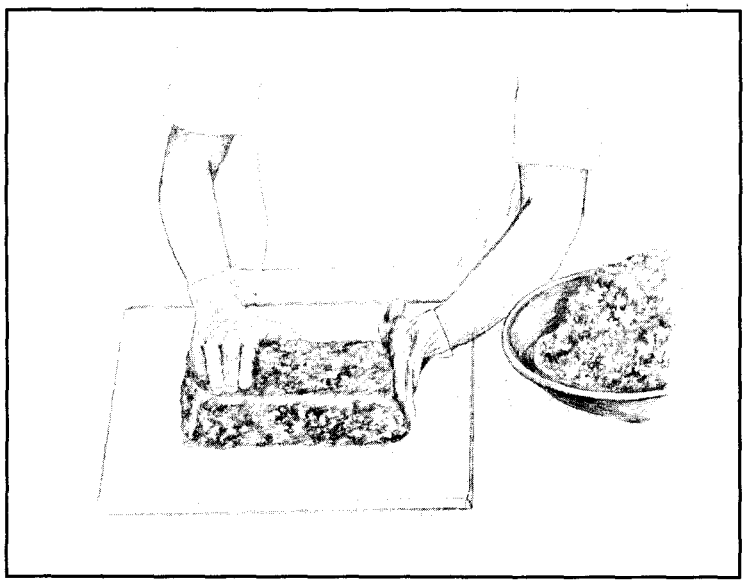
Both of these terms refer to cooking by dry heat in an oven. The meat is usually uncovered in roasting. The meat may be either covered or uncovered in baking. The term used in specific cases depends on the type of meat being cooked. For example, the term baked is used with meat loaf, Salisbury steak, and ham (smoked and nonsmoker). Figure 18-1 (page 18-3) and Figure 18-2 (page 18-4) show the steps for shaping and panning meat

loaf and Salisbury steak. Roasting is used with most nonsmoked meats cooked in the oven by dry heat.

For roasting, place the roast fat-side up so that the fat will baste the meat as it cooks. If possible, cook roasts or hams that are about the same size so that all of them will finish cooking at the same time.

Insert a meat thermometer in the thickest part of a roast. When it is necessary to cook roasts or hams of varying sizes at the same time, insert the thermometer in the thickest part of the smallest roast. Keep the thermometer probe away from fat pockets and bone. Either may cause an incorrect reading. When the thermometer registers the desired temperature (rare, medium, or well-done), remove the smallest roast to prevent overcooking. Then insert the thermometer in the thickest part of the smallest roast remaining in the oven. Repeat this procedure until all of the roasts are done.

Remove roasts from the oven 20 minutes before serving so that the meat can firm up before it is carved or sliced.



Shape mixture into 5-pound loaves. Smooth the loaves to prevent cracking during the baking period.

Bake meat loaves in a roasting pan in a 325° F oven. Drain excess fat as necessary. Do not let meat loaves cook in fat.

NOTE: ***Because of the danger of fire, move the pan away from the range before draining the fat.***

Allow meat loaves to cool slightly before slicing.

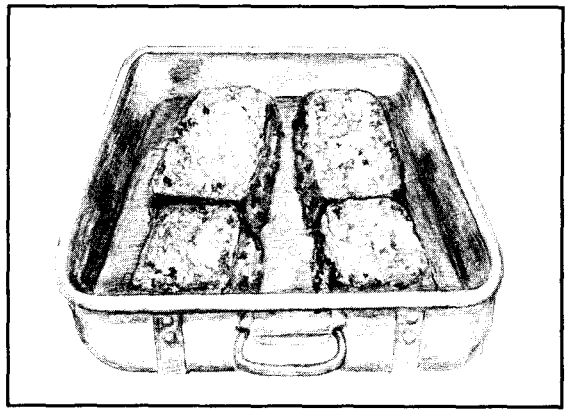
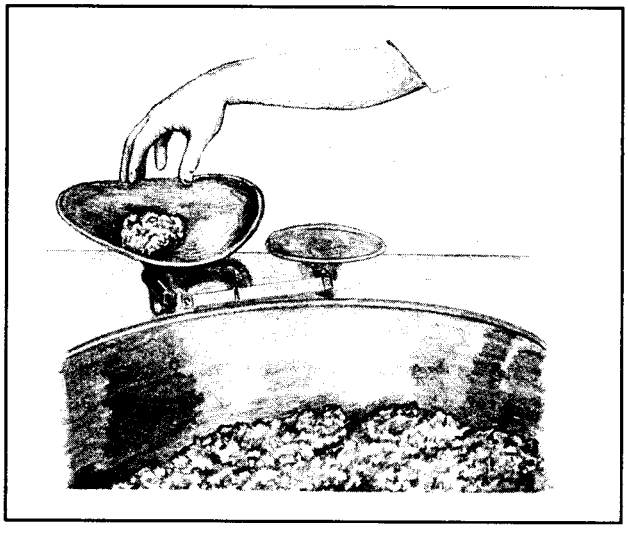
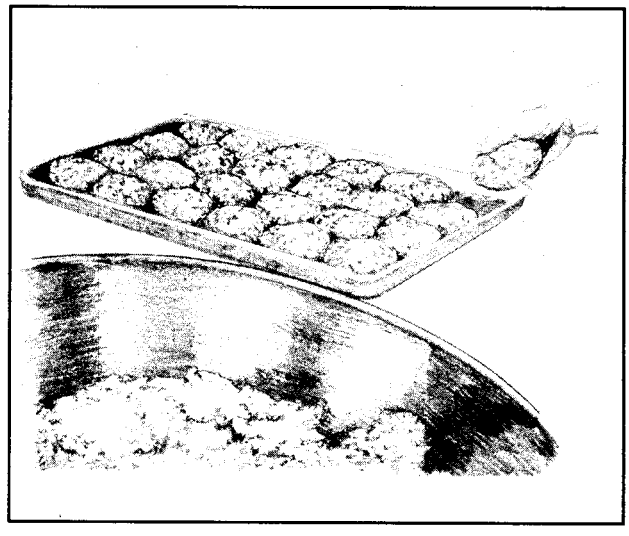


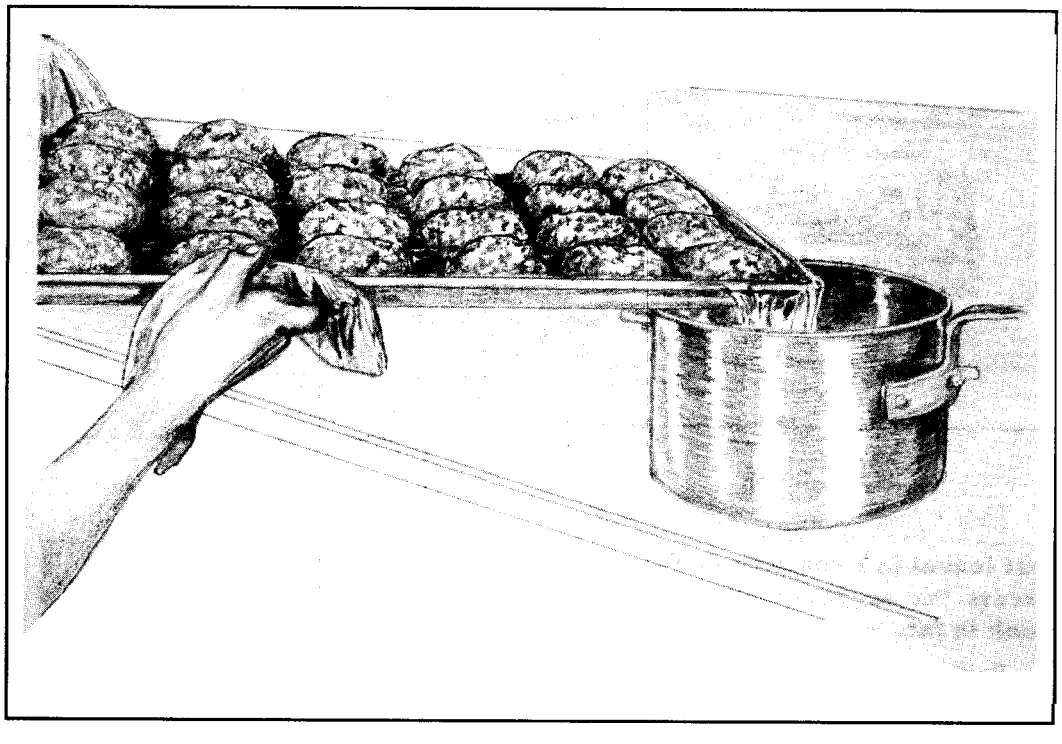
Figure 18-1. Shaping and panning meat loaf



After mixing Salisbury steak according to the recipe, divide the meat into 6-ounce portions.



Shape the meat into oval patties about 1 inch thick. Place them on a sheet pan.



Bake at 325° F about one hour. Drain fat as it accumulates.

NOTE: ***Because of the danger of fire, move the pan away from the range before draining the fat.***

Figure 18-2. Shaping and panning Salisbury steak

Grilling

Grilling can be accomplished on a grill, on a range, or in a tilting fry pan. The grill should be heated to the temperature prescribed in TM 10-412 for the product being prepared. The temperature is checked by use of a grill thermometer. Drain excess grease and other accumulations frequently for best product results.

Deep-Fat Frying

Meat that is to be deep-fat fried is coated with batter or some kind of breading material. It is then cooked in fat heated to a temperature of between 350° F and 360° F. Some meat items, such as breaded veal steaks or cutlets and breaded pork chops, are browned in deep fat, drained, and then placed in an oven to finish cooking by baking. For example, cook breaded pork chops as shown in Figure 18-3 (page 18-6). Use a wire basket to lower the food into the fat and to remove the food when it is done. Do not overfill the wire basket because loose breading will fall into the fat. Always lower a filled basket into the fat slowly to prevent chilling the fat. If the fat is too hot, the outside of the food will scorch and the food will not cook through. If the fat is not hot enough, the outside of the food will become greasy and unpalatable even though the item may be cooked. Cooking fats break down for a variety of reasons. Some of these are--

- Fat is allowed to get too hot during cooking.
- Fatty foods, like bacon, are cooked.
- Breading materials or food particles are allowed to accumulate in the fat. (Filter the fat after each meal.)
- Fat is allowed to get too old before it is replaced.

Panfrying

Panfry meat by cooking it slowly and uncovered on top of the range. Use only enough fat to keep the meat from sticking or burning. Slice meat thinly for frying. Cook it at a moderate temperature, and turn it occasionally. Some recipes call for the meat to be rolled in seasoned flour before frying.

COOKING MEAT BY MOIST HEAT

Simmering is cooking in a liquid at a temperature just below the boiling point. Meat cooked by moist heat is simmered, not boiled. Boiling toughens meat and destroys its flavor, food value, and shape. This method is used to cook large, nonbrowned pieces of meat such as corned beef.

Braising

To braise meat, first brown it either in its own fat or in a small amount of added fat. Then simmer it in a small amount of additional liquid. The recipe may or may not call for the meat to be rolled in seasoned flour before browning. Meat can be braised on top of the range, in the oven, in a tilting fry pan, or in a steam-jacketed kettle. After adding a small amount of liquid, cover the pan to keep in the moisture. Braised liver (Figure 18-4, page 18-8) is an example of braised meat.

Stewing

For stewing, meat is cut in small, uniform pieces. The recipe specifies if the meat is to be browned before adding the liquid. Browned meat may or may not have to be rolled in seasoned flour. More liquid is required for stewing than for braising. Cover the meat, and simmer it on top of the range or in a steam-jacketed kettle. After the meat is tender, add diced or sliced raw vegetables, if required. Figure 18-5 (page 18-9) shows the steps for preparing beef stew.

PREPARING DEHYDRATED MEAT

Dehydrated meat includes uncooked beef patties, diced beef, beefsteaks, and pork chops. You can rehydrate meat ahead of cooking time and keep it in the refrigerator, or you can cook it immediately

after dehydration. Dehydration is done following the manufacturer's instructions. The temperature of the water used and the time required for dehydration varies with each product. After the meat has been dehydrated, it is drained and handled as fresh meat to prevent spoilage.

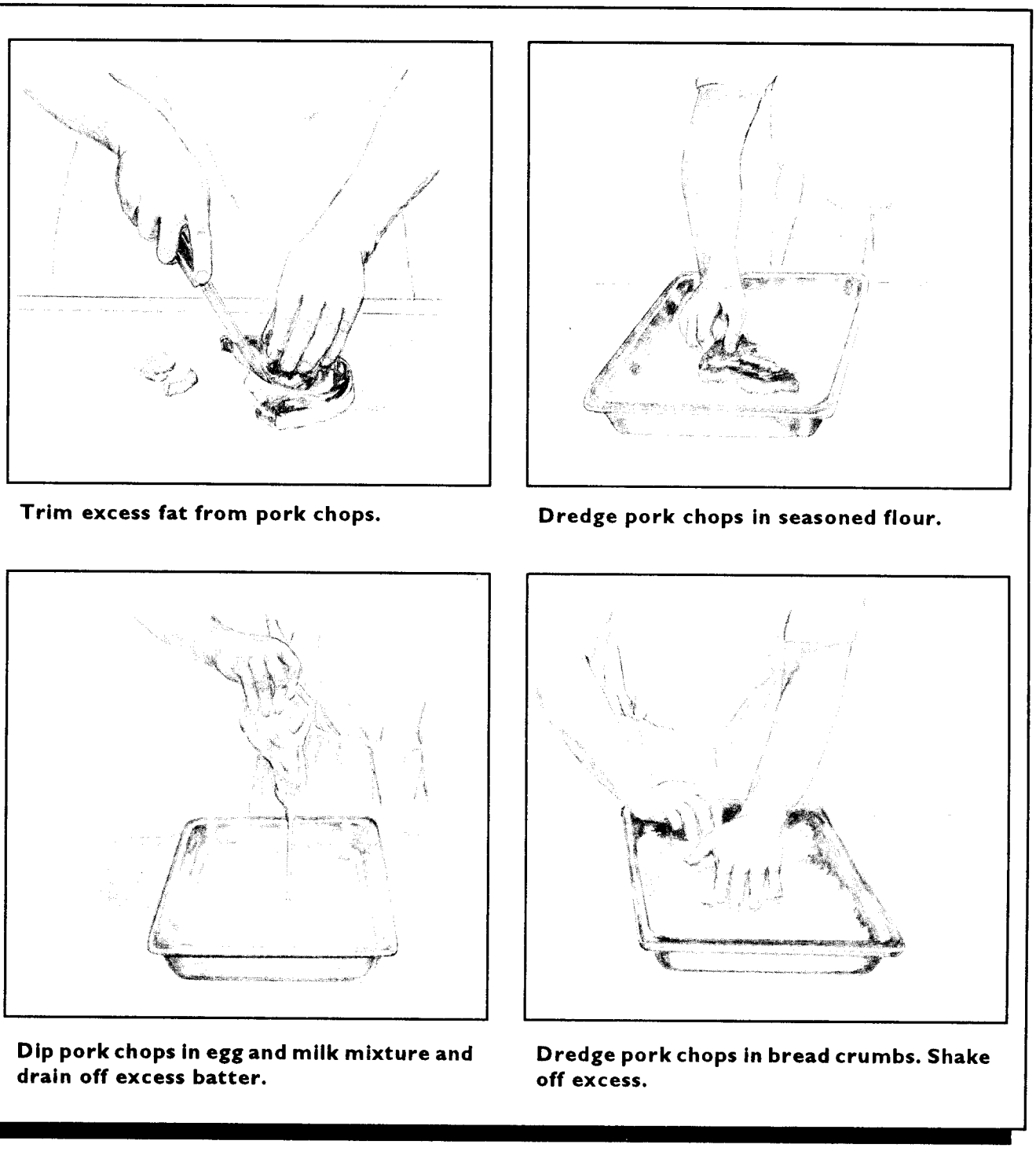
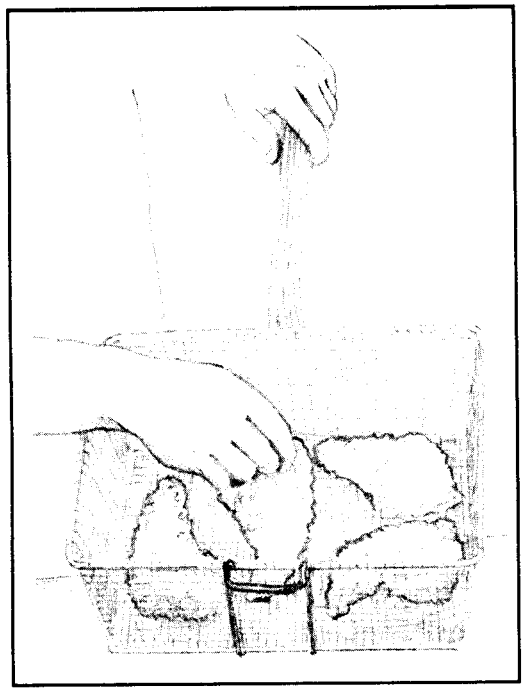
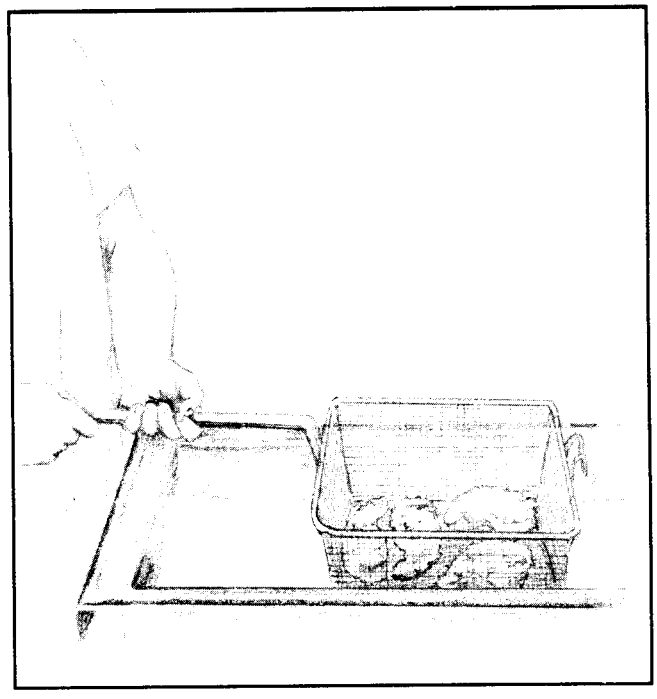


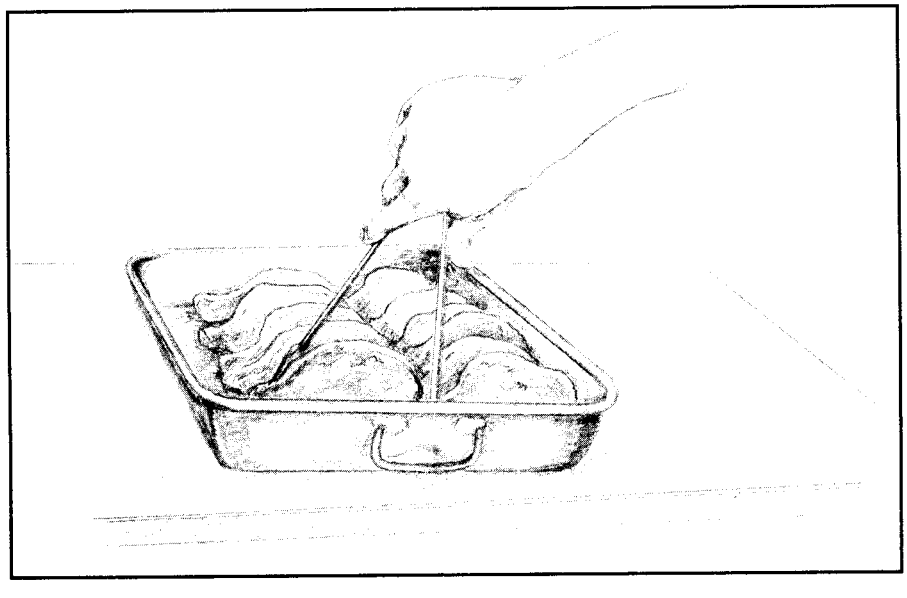
Figure 18-3. Preparing breaded pork chops



Place pork chops in basket, one layer deep.

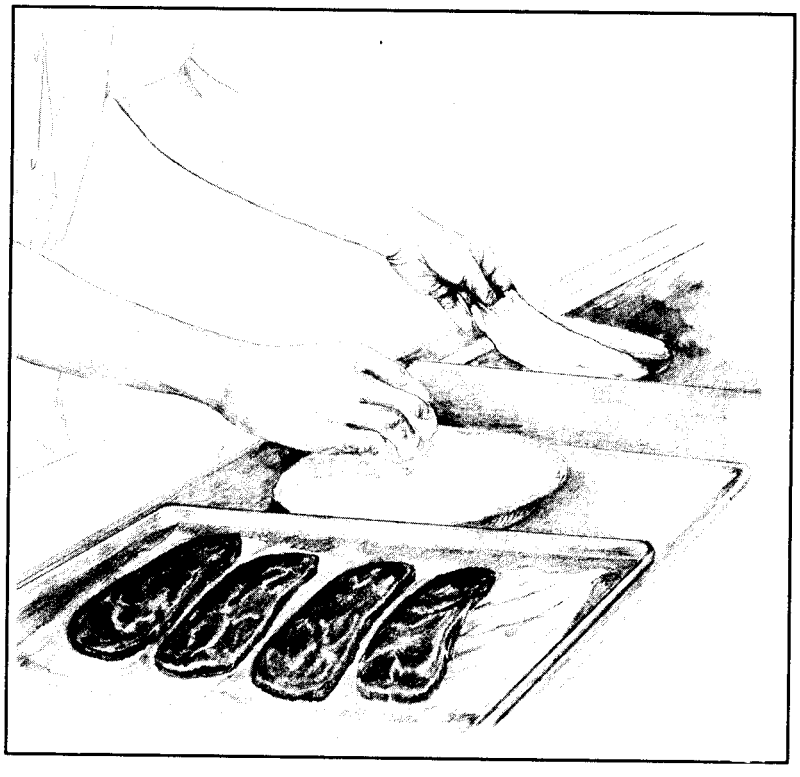


Brown pork chops by cooking in deep fat five to eight minutes or until golden brown. Drain thoroughly.



Arrange pork chops in rows beginning on edge of roasting pan. Finish cooking in oven according to recipe card.

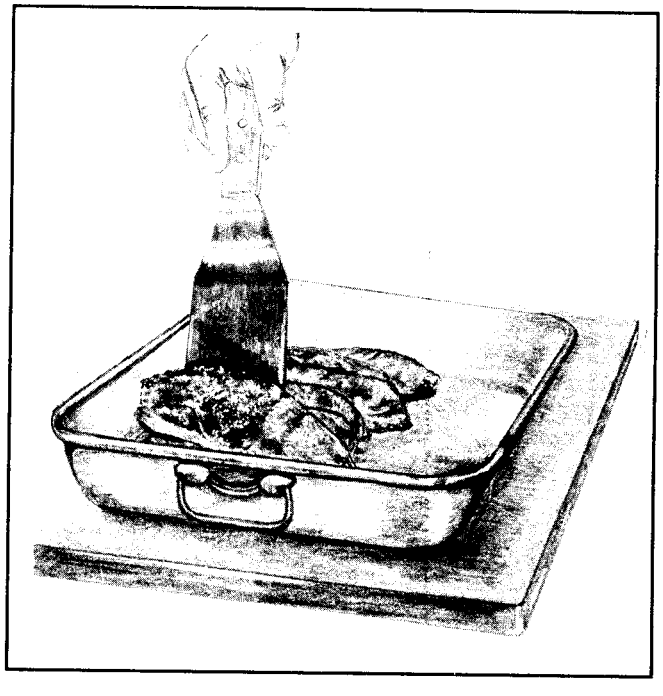
Figure 18-3. Preparing breaded pork chops (continued)



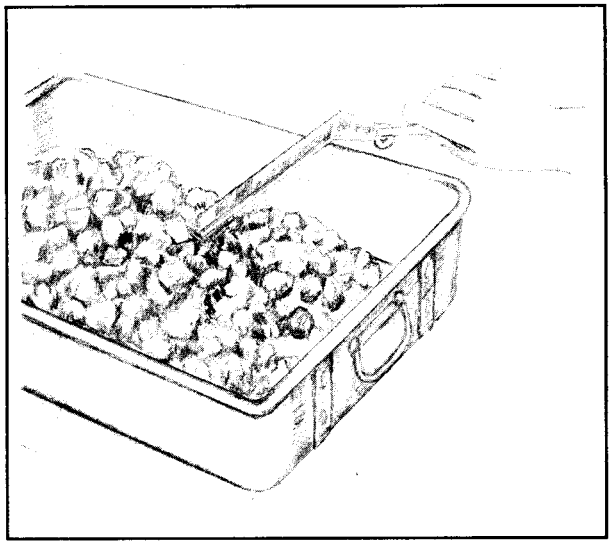
Dredge liver in seasoned flour.

Brown evenly on both sides in shortening on the griddle or in a pan on the range.

Place the liver in a roasting pan, add sauteed onions, pour water over liver and onions, and cover pan. Bake in the oven or cook over low heat for 30 minutes or until tender.

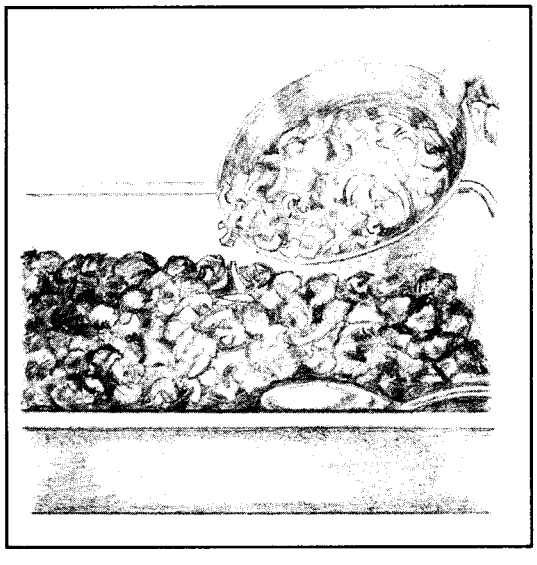


18-4. Preparing braised liver

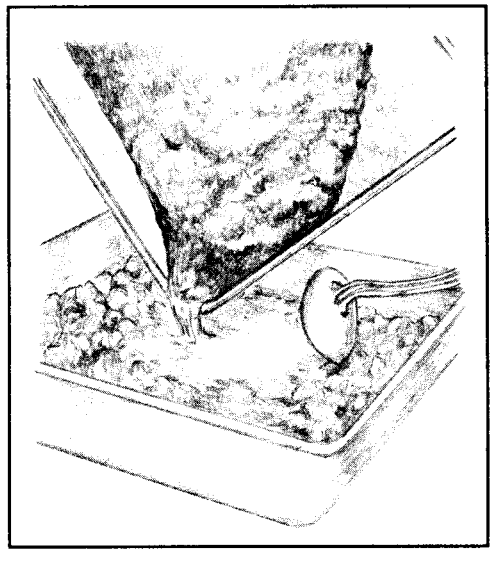


Brown diced beef in shortening in a roasting pan on top of the range.

Add water, tomatoes, and spices and simmer two hours.



Add cut vegetables as specified in the recipe.



Stir in browned flour mixture during the last 20 minutes of cooking.

Figure 18-5. Preparing beef stew

Section II
Poultry

SERVING POULTRY

The two main types of poultry served in dining facilities are chicken and turkey. Broiler-fryer chickens are received frozen, either in whole or cut-up condition. Turkeys are received frozen, in either whole (ready to cook) or boneless condition. The whole, ready-to-cook turkey has the giblets (liver, heart, and gizzard) and neck wrapped in the cavity of the carcass. Boneless turkeys are received cooked, molded, encased, or raw-tied and netted. Other types of poultry that are served infrequently include duck and cornish hens.

COOKING POULTRY

Poultry is always served well-done. The methods used to cook poultry are basically the same as those used to cook meat. Use moderate heat to develop maximum flavor, tenderness, color, and juiciness, regardless of the type and age of the bird. High heat will harden and toughen the protein, shrink the muscles, and drive out the juices. This produces a less palatable product. As a rule, cook young, tender birds by dry heat. Cook mature, less tender birds by moist heat. However, TM 10-412 contains several recipes for cooking young chickens and turkeys by moist-heat methods.

THAWING AND TEMPERING FROZEN POULTRY

Allow enough time for poultry to temper before it is to be prepared. Temper frozen poultry in the rapid thaw or tempering refrigerator in the same manner as meats (see Section I). Separate and cover the birds, and place them on trays. Set the trays on refrigerator shelves so that the air can circulate around the birds to thaw them. Frozen 3-pound broiler-fryers require 18 to 20 hours to thaw in the refrigerator. Frozen turkeys weighing more than 16 pounds thaw in three to four days. Turkeys under 16 pounds thaw in two to three days. Although complete thawing before cooking is preferable, you may cook turkeys before they are completely thawed if you lower the oven temperature and allow more cooking time.

NOTE: *DO NOT refreeze thawed or tempered poultry.*

COOKING POULTRY BY DRY HEAT

Frying and roasting are two dry-heat methods for cooking poultry. Some specific guidance is given in this paragraph.

Cutting Chicken for Frying

Whole broiler-fryers must be cut into frying-size pieces. To quarter a broiler-fryer, follow the steps in Figure 18-6 (page 18-1 1). To cut it into serving-size pieces, follow the steps in Figure 18-7 (page 18-13).

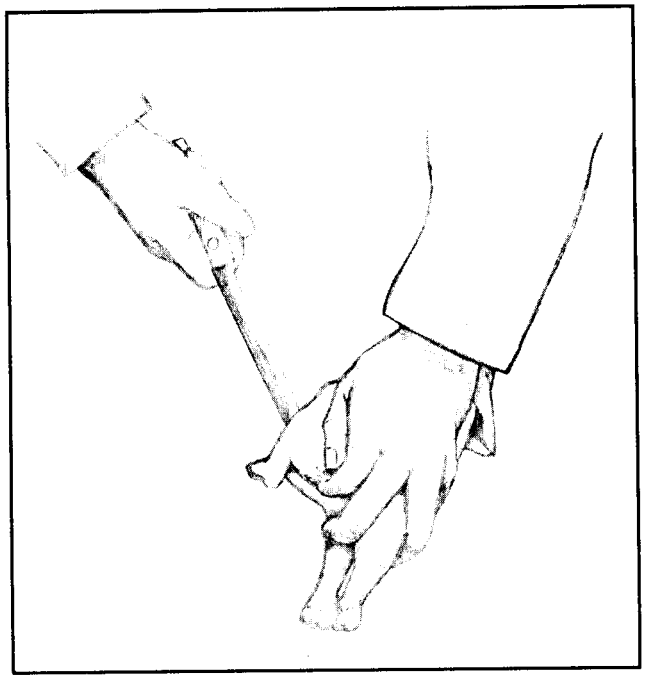
Roasting a Whole Turkey

Wash the turkey inside and out under cold, running water, and drain the turkey thoroughly (Figure 18-8, page 18-14). Rub the turkey cavity with salt and pepper and rub the exterior with oil or shortening. Preheat the oven to 325° F. Insert the meat thermometer in the center of the inside thigh muscle. Roast the turkey uncovered and without added water until the thermometer registers 170° F to 175° F. Baste it occasionally with drippings.

COOKING POULTRY BY MOIST HEAT

Braising or stewing are moist-heat cooking methods. Moist heat is usually used to cook poultry that is not tender enough to fry or roast. Recipes,

such as country-style chicken, call for braising young, tender chickens. This is done to vary the menu, not to tenderize the meat. Boneless, cooked, frozen turkeys are also cooked by moist heat.



Place the chicken on its side. Place the knife under the tail and cut close to the backbone from vent to neck, freeing one side of the backbone.

Place the knife above the tail and cut close to the backbone from vent to neck. Then remove the backbone.

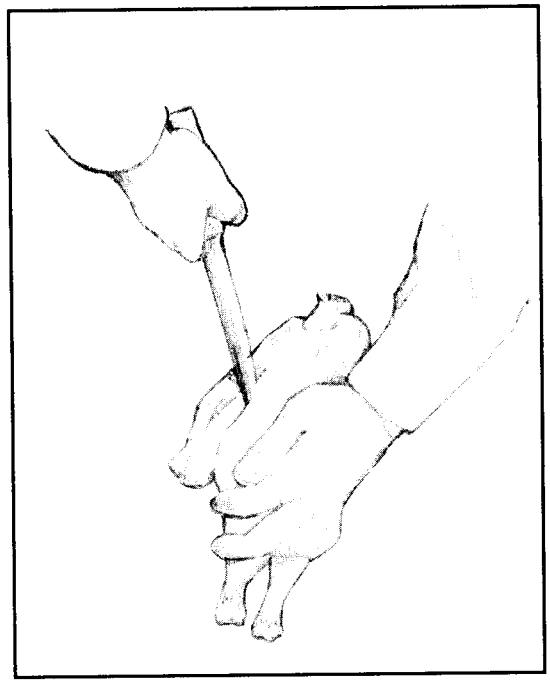


Figure 18-6. Quartering a broiler-fryer

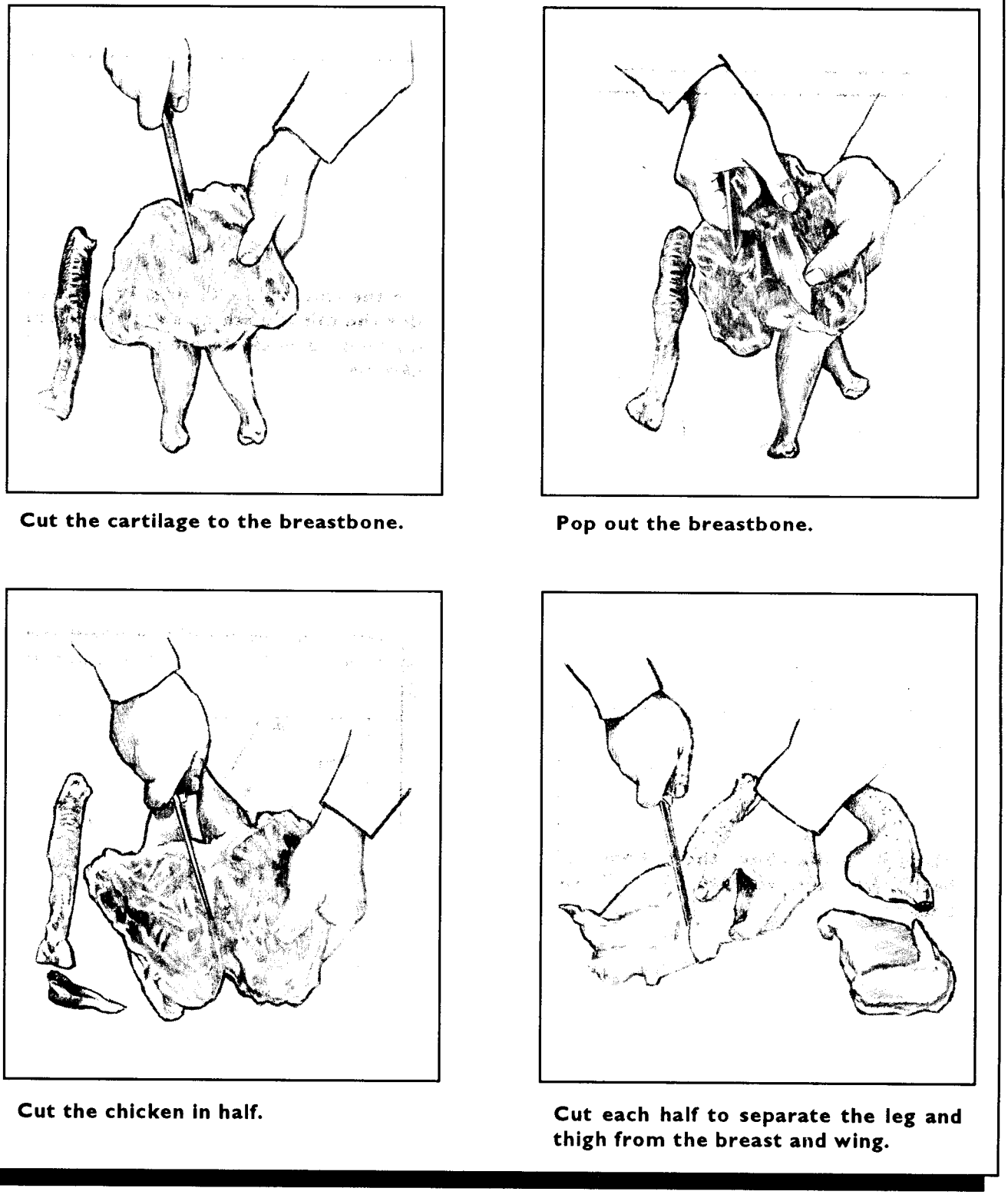
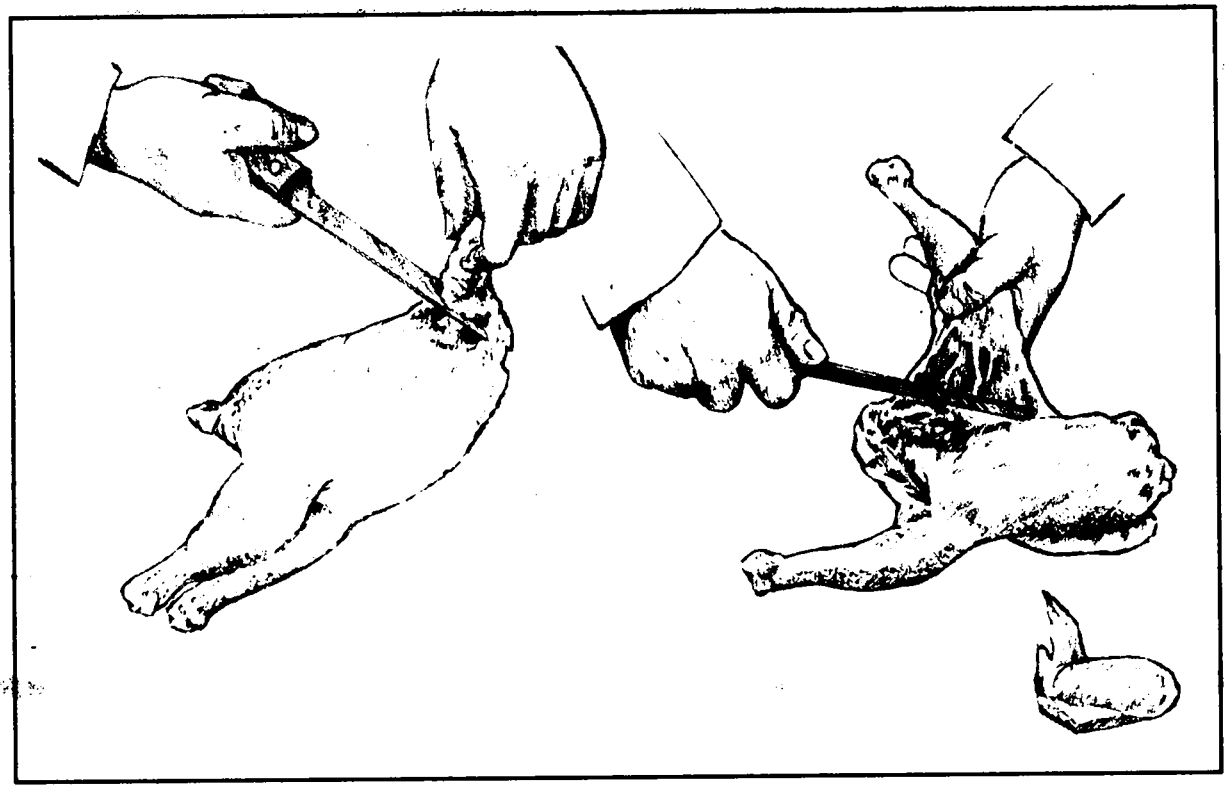
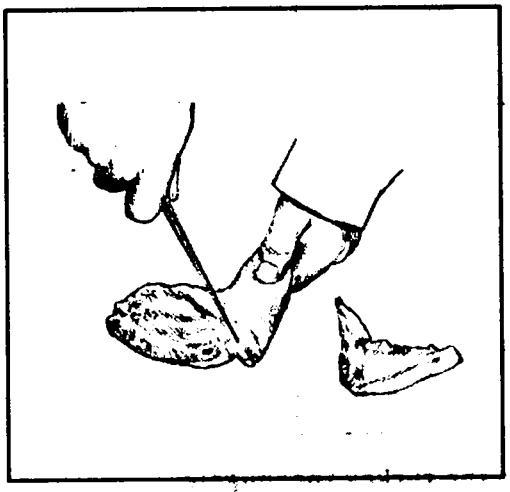


Figure 18-6. Quartering a broiler-fryer (continued)

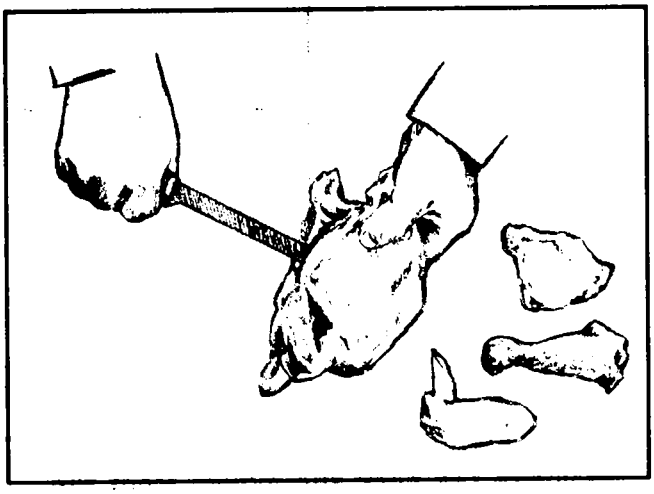


Place the chicken on its side. Then remove the wing at the joint.

Remove the leg and thigh section at the joint. Then turn the chicken over and remove the other leg and thigh section and wing.

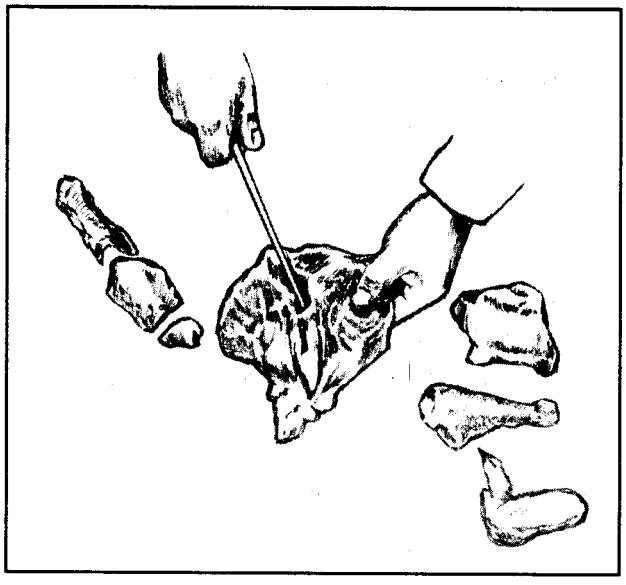


Separate the legs and thighs at the joints.

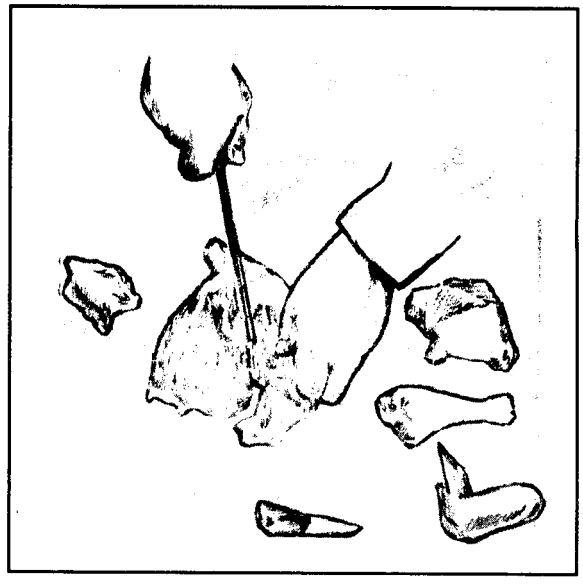


Remove the back. Then cut the tail from the back and break the back in half.

Figure 18-7. Cutting up a broiler-fryer

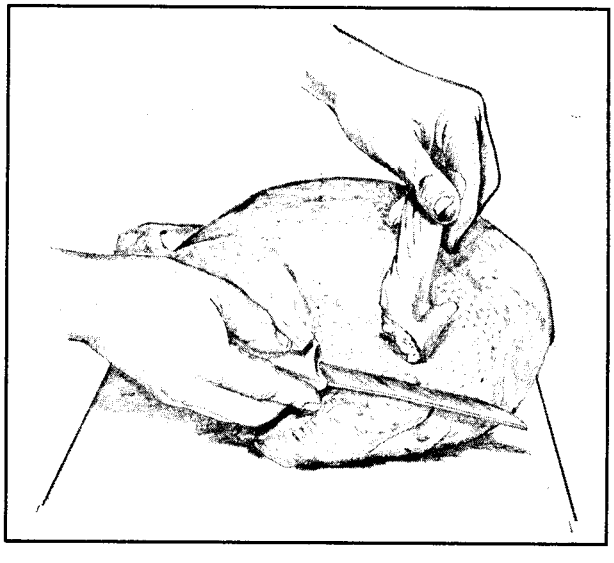


Cut the cartilage and pop out the breast bone.



Cut the breast in half.

Figure 18-7. Cutting up a broiler-fryer (continued)



Remove the neck and giblets from the cavity. Cut off wing tips. Wash the turkey inside and out under cold running water.

Drain the turkey thoroughly.
Rub the cavity with salt and pepper.
Rub the turkey with oil or shortening.

Figure 18-8. Preparing a turkey for roasting

Braising

Braising poultry is similar to braising meat. First, dredge drained pieces in seasoned flour, and shake off the excess. Brown the chicken pieces in shortening, then finish the cooking process according to the recipe.

Stewing

When poultry is to be used in recipes such as salad, potpie, or a la king, it is stewed first. The item is then cooled and the meat removed from the bones and cut into pieces. The size of the pieces will vary from 1/2 to 1 inch, depending on the recipe you follow. Keep the stock to use in sauce, gravy, or soup. If boneless, frozen, cooked turkey is used, thaw it and dice it into l-inch pieces.

PREPARING DEHYDRATED COOKED CHICKEN

Chicken pieces are dehydrated according to the manufacturer's instructions. After dehydrated cooked chicken pieces are rehydrated, use them the same as fresh cooked and boned chicken.

Section III

Seafood

SERVING SEAFOOD

Fish and seafood are generally purchased in frozen or canned form. Fresh fish are highly perishable. For this reason, the Armed Forces purchases them only in limited quantities.

Frozen Fish

Frozen fish include fish sticks, fish fillets, and fish steaks. Some come breaded and ready to cook. Others require preparation in the dining facility. Fish steaks are cross sections of a large dressed fish. A fish steak may be boneless, or it may contain the cross section of the backbone in the center of the steak. Fillets are the meaty sides of fish cut lengthwise away from the backbone and are practically boneless.

Crustaceans and Shellfish

Crustaceans and shellfish are delivered frozen. They include shrimp (crustacean), oysters, and scallops (shellfish).

Dehydrated Fish and Seafood

Dehydrated fish and seafood do not require refrigeration until after they have been dehydrated. Follow manufacturer's preparation instructions for best results.

COOKING FISH

Usually, fish is cooked by the dry-heat method. For variety, some recipes use the moist-heat method. Cook fish so that the required cooking time ends as close to the serving time as possible. When fish is overcooked or kept warm in an oven after it has been cooked, it becomes hard and dry and loses its flavor. Fish is done when the flesh separates or flakes easily with a fork.

HANDLING FROZEN SEAFOOD

Cook frozen, breaded seafood items from the frozen state. Nonbreaded steaks and fillets must be tempered in the refrigerator so that the pieces can be separated. TM 10-412 contains numerous recipes for preparing nonbreaded frozen seafood as well as the breaded items.

COOKING SEAFOOD

Generally, it is best to fry lean fish, such as haddock or flounder, and broil or bake fat fish,

such as salmon or mackerel. However, lean fish can be baked if it is basted frequently with melted fat or if it is cooked with a sauce. TM 10-412 contains several recipes for preparing canned salmon and tuna. Since these items are already cooked, they can be used in a variety of salads.

COOKING DEHYDRATED AND FREEZE-DRIED FISH AND SHRIMP

Dehydrated seafood items are high-quality products when handled properly. The two primary items in the Army system are fish squares and shrimp.

Fish Squares

To rehydrate the fish squares, follow the manufacturer's instructions. The item is then prepared according to TM 10-412 the same as for a like fresh item. Once cooked, however, the product must be handled with care as it will fall apart more easily than a fresh item.

Shrimp

Rehydrate cooked shrimp according to the manufacturer's instructions. Prepare dehydrated shrimp by the recipes in TM 10-412 recipe in the same manner as you would prepare the fresh item.

Section IV
Carving

CARVING RULES

Let roasts and poultry stand for 15 to 30 minutes before carving them so that the meat will be firm and not fall apart. During carving, meat should be trimmed in the kitchen and carved on the serving line. Follow the rules below:

- Always use clean, sanitized equipment.
- Use the proper knives for the job.
- Keep knives sharp.
- Use a meat fork.
- Arrange meat portions in a serving pan so that you can easily remove slices without breaking them.

CARVING METHODS

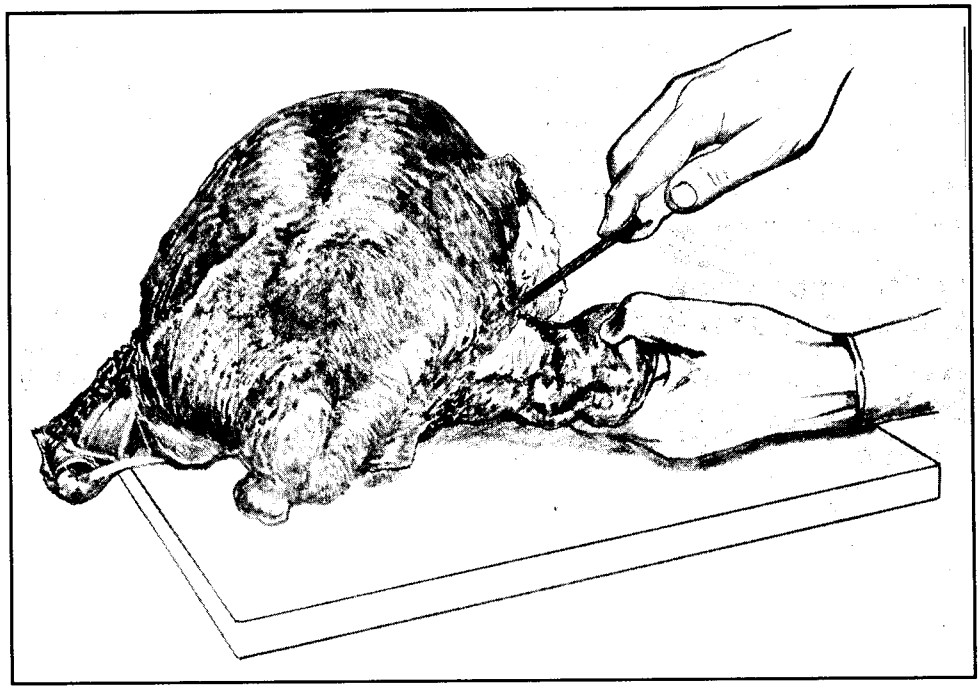
The two carving methods are by hand or by a mechanical device. Hand-carving on the serving line provides the best product presentation but requires skill and training to carve slices of equal size.

Hand Carving

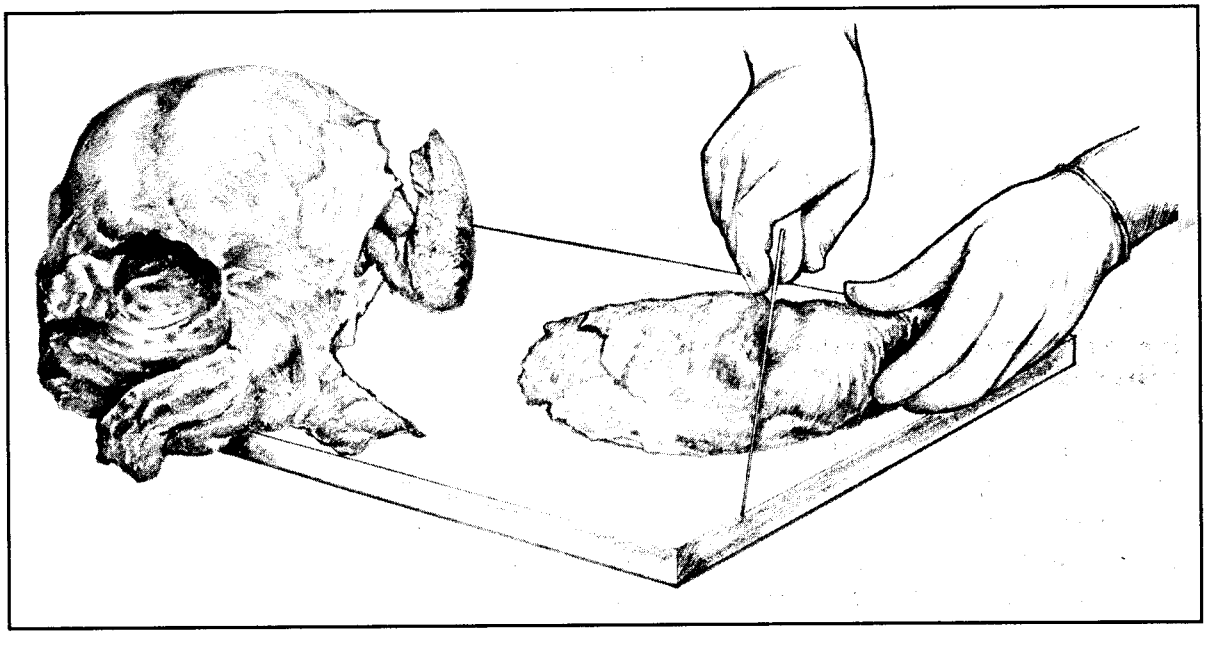
Meat, fish, and poultry recipes indicate serving size portions. Always cut across the grain of the meat and away from the body. Steps you should follow when carving a roast turkey are shown in Figure 18-9 (page 18-17).

Mechanical Carving

As an alternate to hand carving, a mechanical slicing machine may be used. Use Table 18-2 (page 18-19) as a guide in determining the thickness of the slices.

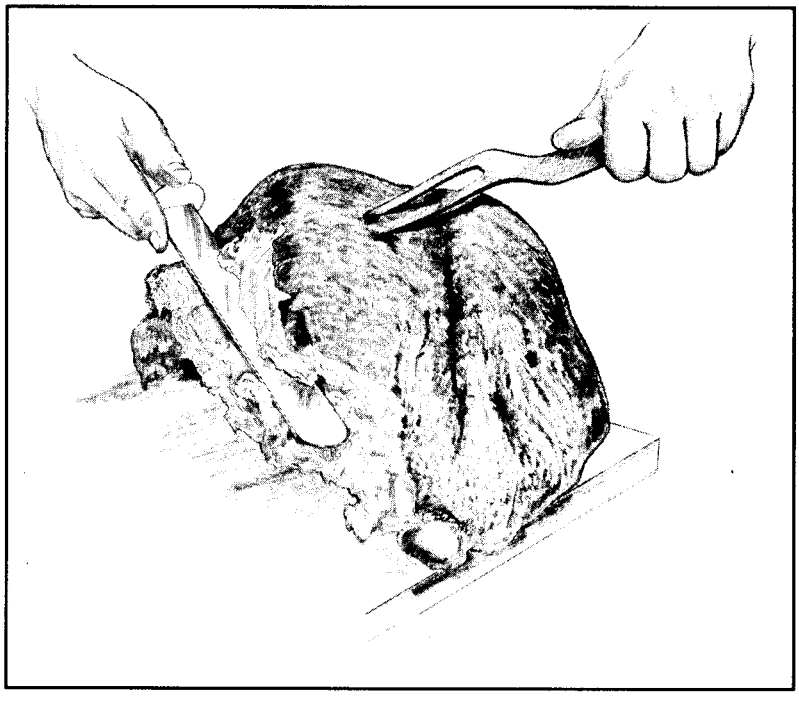


Remove a leg.



Separate the thigh from the drumstick.
Remove a wing.

Figure 18-9. Carving a roast turkey



Make a cut toward the ribs on a line between the wing and thigh so that slices will fall free when you cut the breast.

Slice the breast parallel to the breastbone.

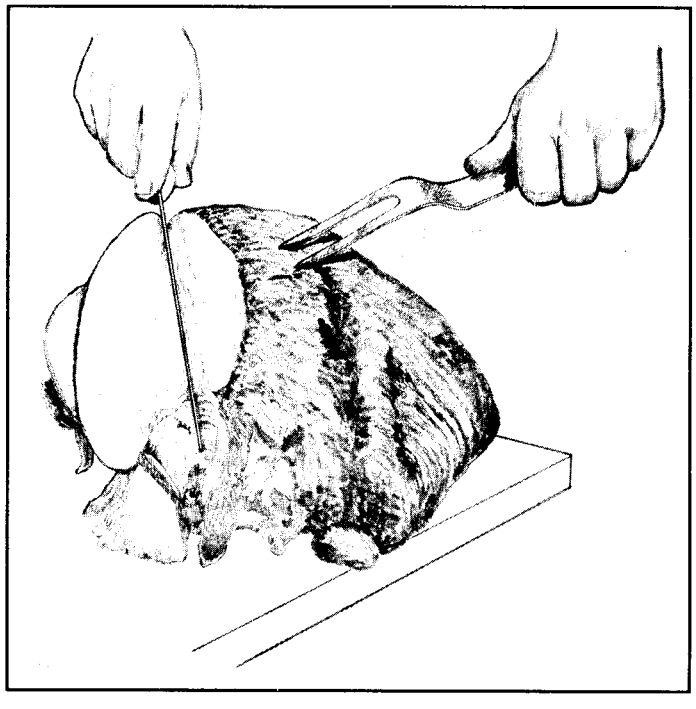


Figure 18-9. Carving a roast turkey (continued)

Table 18-2. Slice thickness

FOOD ITEM	DIAL SETTING	FOOD ITEM	DIAL SETTING
Bacon	2 1/2	Meat loaf	2 1/2
Beef:		Mutton, hot	5
Corned, canned	5	Pork, hot	5
Corned, cooked	1 1/2	Sausage, liver	2 1/2
Dried	1/2	Turkey breast	3
Roast, hot or cold	5	Tongue, beef	1
Bologna:			
Lebanon	1		
Assorted, soft	1 1/2		
Ham:			
Boiled	1 /12		
Minced	2 1/2		
Raw	6		

CHAPTER 19

RICE, PASTA PRODUCTS, AND DRESSINGS

RICE

Rice is served with dishes such as chili con carne, chop suey, and creole beef balls. It may also be added to some soups. Rice can be substituted for potatoes or added to the menu as an alternative starch for diners. To preserve valuable vitamins and minerals, do not blanch, wash, or rinse rice after it is cooked. To prevent gumminess, never uncover the rice cooking pot or pan during the simmering period. There are several ways to prepare and cook rice. The most common is steaming it. Other ways to prepare rice are the oven method and use of the pressure cooker. These methods are covered in TM 10-412.

PASTA PRODUCTS

Macaroni, noodles, and spaghetti are popular pasta products. They are not substituted for potatoes as often as rice, but they can be used in many different ways. Because pasta products have a bland flavor, they require seasonings or sauces. Macaroni is used in dishes such as chili and macaroni, macaroni and cheese, or macaroni salad. Noodles are used in beef noodles, chow mein, noodles Jefferson, and lasagna. Spaghetti and meat balls or meat sauce are a standard, yet dishes such as Yakisobo provide a highly acceptable alternative. Some rules for cooking and serving pasta products are as follows:

- Cook as close to serving time as possible.
- Slowly add the macaroni, noodles, or spaghetti to rapidly boiling water to which salt and salad oil have already been added. Stir constantly until the water begins to boil again.
- Stir the product occasionally.
- Cook the product only until tender. Do not overcook. (Overcooking makes the texture soft and unappetizing.)
- Test frequently for doneness. To test, press a piece against the side of the pot, using a fork or spoon. The piece will break evenly and clearly when done.
- Rinse the macaroni or spaghetti in cold water. Rinsing is not necessary if you serve the macaroni or spaghetti immediately with a sauce or butter.
- To reheat the pasta before serving, place the desired quantity in a wire basket. Lower the basket into boiling water for two to three minutes. Drain well. Place in a greased steam table insert.

DRESSINGS

Serve dressings as an accompaniment to poultry, meats, and fish. Bake dressing in a roasting pan in a moderate oven. Do not stuff the cavity of poultry. Dressing should be moist but never soggy. ***NOTE:*** *To prevent sogginess, never use hot stock.*

Poultry stuffings (dressings), stuffed meats, and stuffings containing meat must be cooked immediately after preparation to heat all parts of the food to at least 165°F (74°C) with no interruption of the cooking process. All such products should be cooked separately.

The two basic types of dressings prepared in Army dining facilities are corn bread dressing and savory bread dressing. Guidance on how to prepare these products is provided in TM 10-412, Section O.

CHAPTER 20

FRUITS AND VEGETABLES

GENERAL

Fruits and vegetables are a good source of fiber and provide a large part of the vitamins and minerals needed in a well-balanced diet. Therefore, they should be prepared so that they retain maximum nutritive value. Fruits and vegetables may be eaten raw, but they are often cooked to improve digestibility, palatability, and acceptability.

FRUITS

Fruits of all kinds are excellent for salads or dessert and should be served fresh at every meal in the dining facility. Fruits are purchased, canned, frozen, and dehydrated for use as toppings and fillings and in gelatins. Fruits are a large part of the breakfast fitness bar. When certain fresh fruits are out of season, canned or frozen fruits can be served for variety. Water-packed or unsweetened fruits should be offered when possible.

VEGETABLES

Vegetables are purchased fresh, frozen, canned, and dehydrated for use in dining facilities. Various methods of serving can be used. Table 20-1 (page 20-2) contains some of the most popular ways to add variety to your vegetables.

PREPARATION

Follow certain procedures to prepare fruits and vegetables for cooking or serving raw. If there is a delay between the preparation and cooking or serving times, they must be cleaned, prepared, cut, and preserved. These procedures are discussed below.

Cleaning

Thoroughly clean all fresh fruits and vegetables before using them. Trim vegetables, and remove all undesirable leaves and coarse stems. Wash usable leaves several times to remove sand and grit. Wash greens in a sink with enough cool water to cover the vegetables. If greens have insects, add 1 tablespoon of salt per gallon of water. Wash the vegetables by lifting in an up-and-down motion. Since some minerals and vitamins in fresh fruits and vegetables are water soluble they should not be left in the water for more than six to seven minutes. Use a vegetable brush to clean celery, carrots, beets, and potatoes when they are not peeled. Also, use disinfectant on fruits and vegetables purchased in oversea areas where unapproved fertilizers are used. To use the disinfectant, follow the instructions on the disinfectant container.

Preparing

Fruits and vegetables are prepared for serving by simply washing, peeling, or chopping. Vegetables can be peeled manually or with a mechanical vegetable peeler.

Cutting

Recipe directions may call for vegetables to be sliced, diced, cubed, shredded, or cut in some other manner before serving or cooking.

Preserving

Do not use sulfiting agents to preserve food. Refrigerate vegetables until cooked or served.

COOKING METHODS

During cooking, care must be taken to preserve the color, texture, and nutritional value of vegetables. They should be cooked only until tender, at which point nutritional value, flavor, and appearance are maximized. Cook them in small batches as close to serving time as possible.

Stagger the starting time of each batch to maintain a continuous cooking operation up to and throughout the serving period. Use various seasonings as directed in the recipe.

Table 20-1. Ways of adding variety to vegetables

METHOD	PROCESS
With Fats	Margarine or bacon or pork is added.
With Sauce	Sauce may be combined with, poured over, or served on the side.
Panfried	Vegetables, cooked or uncooked, may be panfried. Some vegetables may be rolled in seasoned flour before being put in the frying pan.
Scalloped	Layers of raw vegetables are placed in a buttered baking dish and sprinkled with seasoning, margarine, and flour. Milk is then added, and the vegetables are baked. If vegetables are already cooked, white sauce is used.
Au Gratin	White sauce with cheese added is poured over cooked vegetables in a baking pan. The mixture is sprinkled with buttered bread crumbs and baked at the temperature specified on the recipe card.
Fritters	Chopped or diced vegetables are mixed with a thick batter and deep-fat fried.
Glazed	Vegetables are sliced and placed in a baking or roasting pan. Syrup is poured on top. Vegetables are baked in a moderate oven and basted several times during cooking.
Stuffed	Various mixtures may be used to stuff vegetables. Stuffed vegetables are baked until tender or served fresh (for example, stuffed celery and stuffed tomato salad).
Deep-fat Fried	Vegetables to be deep-fat fried may be raw, precooked, frozen, or blanched. They may be sliced, crinkle cut, french-fry cut, sectioned, or preformed, depending upon the type of vegetable.

Boiling and Simmering

Both boiling and simmering are methods commonly used to cook vegetables. Guidelines for boiling and simmering vegetables are in TM 10-412 series. The amount of liquid needed and the approximate cooking time are also given. If cooked vegetables must be held for any length of time, they should be refrigerated. Liquids from cooked vegetables should be used in soups, sauces, or gravies for added flavor and to prevent loss of nutrients from the vegetables. Additional hints for cooking vegetables include the following:

- Green vegetables can be cooked covered or uncovered. Follow the cooking times in the appropriate recipe.
- Yellow vegetables such as squash, wax beans, and corn, should be covered. This reduces the cooking time and reduces the loss of nutritional value and color in the vegetables.
- White vegetables should be cooked covered or uncovered as required by the recipes in TM 10-412. Overcooking may cause them to turn a grayish or brownish color.
- Red cabbage should be cooked uncovered. Cook beets in their skins. Beets will retain their color if the taproots and about 2 inches of stem are left intact. The skin is easily removed after cooking. Also, adding a small amount of vinegar or lemon juice to beets or red cabbage, after cooking, can improve the flavor and color.

Baking

Baking vegetables in their skins preserves their flavor and nutrients. Do not overbake as this destroys nutrients and flavor. Proper peeling of vegetables also helps reduce the loss of nutrients. White potatoes, sweet potatoes, and tomatoes are particularly adaptable to baking. Potatoes should be scrubbed thoroughly, dried, and pricked with a fork before baking. Follow baking temperatures in TM 10-412.

Panfrying or Sauteing

Panfrying or sauteing is recommended for cooking juicy vegetables, particularly those that are

shredded. Place them in a covered pan with a small amount of fat. This way they will cook more or less in the steam from their own juices. Serve the liquid with the vegetables so that any minerals and vitamins are consumed with the vegetables. You may panfry or saute vegetables such as cabbage, corn, onions, mushrooms, squash, tomatoes, and white potatoes on top of the range. Do not overcook or cook at too high a temperature or you will destroy vitamins and lose minerals.

Steaming

When vegetables are cooked under pressure in a steam cooker, there is minimal loss of minerals or vitamins. Another advantage of steaming is that the vegetables keep their original shape. Steam them only until they are slightly undercooked. The remaining heat in the vegetables will complete the cooking. TM 10-412 gives guidelines for using steam cookers.

Deep-Fat Frying

Potatoes, onions, and eggplant are often deep-fat fried. These items may be fried without first partially cooking them. Some recipes, such as that for rissole potatoes, call for browning the vegetable in deep fat and then placing them in the oven to finish cooking.

FROZEN VEGETABLES

A variety of frozen vegetables is available year-round. The vegetables come ready to cook. No time is required for cleaning, peeling, or other preparation. Usually, they are boiled or steamed. Some rules for cooking frozen vegetables are given below.

Preparing

Frozen vegetables are perishable. Keep them frozen until cooking time except for leafy green vegetables and corn on the cob. Let these vegetables thaw partially so the outside will not overcook before the inside defrosts.

Cooking

Add frozen vegetables to boiling, salted water. Start the cooking time when the water comes to a boil the second time. Break up solid blocks of vegetables by tapping the package lightly before opening. This will shorten defrosting time in the water. Follow the guidelines on the package or in TM 10-412 for the cooking time and the amount of water to use. Do not overcook.

CANNED VEGETABLES

Commercially canned vegetables are harvested at the peak of their maturity and are processed within a few hours of harvesting. The vegetables are high quality; therefore, with proper heating and seasoning, they are highly acceptable. Canned vegetables require no further cooking. Prepare them in small batches to keep them from breaking up and becoming discolored, For further information on preparing canned vegetables, see TM 10-412.

DRIED LEGUMES

Dried legumes, such as navy beans, kidney beans, lima beans, and black-eyed peas, are a source of protein. Legumes should be simmered and not boiled. Boiling will toughen the protein. TM 10-412 has several recipes for dishes made with dried legumes.

DEHYDRATED VEGETABLES

Vegetables such as white potatoes, peppers, cabbage, and green beans can be dehydrated. Prepare these vegetables as discussed below. Additional information on the use of dehydrated vegetables is on recipe cards Q-G-5 and A-11.

Onions

Dehydrated chopped onions can be used in any recipe which specifies onions, dry or chopped. To use them as raw onions, reconstitute them by adding warm water and letting them stand for 20 to 30 minutes. For seasoning, dehydrated onions can be added directly to stews, soups, and sauces without reconstitution. Reconstituted onions can

be added to meat loaves and coquettes. One pound (1 1/2 quarts loose) of dehydrated onions is equivalent to 8 pounds of prepared onions.

White Potatoes

Dehydrated white potatoes are available in ground, flaked, diced, and sliced form. The methods for preparing potatoes are given below.

Ground or flaked. To prepare instant potatoes from granules or flakes, blend potato granules and nonfat dry milk together. Combine boiling water, butter or margarine, and salt in a mixing bowl. Stir to blend. Rapidly add dry mixture to the liquid, and mix on a low speed for 30 seconds. Stop the machine, and scrape the sides and bottom of the bowl. Add pepper. Whip on high speed for about two minutes or until the potatoes are light and fluffy. Serve mashed potatoes hot.

Diced or sliced. Reconstitute dehydrated sliced potatoes by adding them to salted boiling water. Cover and simmer them for 15 to 25 minutes, until tender. One number 10 can makes 20 servings. They can then be grilled or a sauce added for such items as potatoes au gratin.

Sweet Potatoes

Reconstitute dehydrated sweet potatoes in hot water with butter. One number 10 can makes 40 servings.

Peppers

Dehydrated peppers can be used in any recipe calling for sweet diced peppers or sweet chopped peppers. Dehydrated peppers used in salads or other uncooked dishes, must be soaked in cold water for two to six hours. They can then be used as fresh peppers. Dehydrated peppers used in soup, stew, or in any other cooked dish containing a large amount of liquid, can be added directly to the other ingredients. They do not need to be soaked first. When used in a cooked dish that contains only a small amount of liquid, they must be soaked in cold water for one hour before they are combined with other ingredients. One pound of dehydrated peppers is equivalent to 6 pounds of fresh, trimmed, sweet peppers. One ounce (three-fourth cup) of dehydrated peppers, when reconstituted, yields 6 ounces (1 2/3 cups) of diced peppers.

Peas

To reconstitute dehydrated, cooked, compressed peas, place them in a pan with salt and butter. Add enough boiling water to cover them. Stir the peas to moisten them, cover the pan, and let them stand for 10 minutes before serving. A number 2 1/2 can yields 25 servings.

Cabbage

Reconstitute dehydrated raw cabbage by soaking it in cold water for three hours. Drain the water before using the cabbage. A number 2 1/2 can equals 2 1/2 pounds of fresh cabbage.

Green Beans

Dehydrated green beans are frozen before dehydration to preserve the natural color, nutrients, and flavor. To reconstitute, place the beans in water, and cook them for 22 minutes.

CHAPTER 21

SALADS AND SALAD DRESSINGS

GENERAL

Green, leafy vegetables provide a balance of nutrients in our diet and should be a part of the lunch and, dinner meal. Salads are vitamin-rich, high in fiber, and low in calories, and they add color to the meal. Salad bars are an excellent way to provide a wide variety of fresh or canned vegetables and permit diners to select those that they desire.

SALADS

Salads increase the variety, acceptability, and nutritional content of the meal. Salads and salad bars should be offered twice a day in the dining facility as an accompaniment to the main course. Recipes for salads listed in the master menu are in TM 10-412. Some general rules for preparing salads are:

- Make salads simple, but orderly and neat.
- If the recipe calls for ingredients to be sliced, make the slices thin and even. If the recipe calls for the ingredients to be cut in wedges or chunks, cut all the pieces the same size.
- Do not mince the principal ingredients. Dice or chop them into pieces approximately one-fourth of an inch long to give texture to the salad.
- Use highly flavored foods such as green peppers and onions sparingly. The strong flavors tend to overpower the more delicate flavors of the other ingredients.
- Store and chill salad ingredients in covered containers.
- Have the dressing compliment the salad, both in type and flavor. Use a rich dressing for a light salad and a light dressing for a heavy salad. Coleslaw may have either a light or heavy dressing, depending on how it best compliments the rest of the menu.
- Avoid overgarnishing.
- See that the foods in salads contrast in color, shape, texture, and flavor. Consider flavor and color combinations from the standpoint of palatability and attractive appearance. For example, the color of tomatoes does not combine attractively with the color of beets. A cherry gelatin salad served on fresh lettuce is an example of an attractive food contrasting in color, shape, texture, and flavor.

SALAD VEGETABLES

Both raw and cooked vegetables can be used in salads. Cooked or canned vegetables are normally drained according to the procedures in TM 10-412. Some suggestions for preparing commonly used raw vegetables are given in the paragraph.

Greens, Lettuce, and Cabbage

These items should be culled, washed gently but thoroughly. Place them in ice water, if wilted, to help restore crispness. Items should then be drained and torn (lettuce) or cut into bite size pieces according to the specific recipe.

Celery

Stalks should be separated and washed thoroughly. There is a tendency to trim excessive portions of the stalks and discard them. In most cases only the root portion should be discarded. The leafy portion can be used in tossed salads or for soup stock. The main stalk is then cut or diced in accordance with the intended use. For example, stuffed celery would be cut approximately 2 inches long using the full width, while celery sticks would be in 2-inch-long strips.

Cucumbers

The cucumber can be served with or without the peelings. Cucumber slices for tossed salad, for a relish tray, or cucumber salad would normally be

served with the peeling. Cucumber sticks would normally be peeled first.

Carrots

Carrots can be used peeled or just washed thoroughly. They can also be used raw or cooked depending on the type salad being prepared.

Onions

Dry onions are always peeled and sliced or diced according to the specific recipe being used. Whole rings are used primarily as garnish or for use on hamburgers. Green onions are diced for salads and served whole for relish trays.

Peppers

Peppers (sweet, banana, hot) can be served in slices for relish trays or diced for salads. In all cases the stem and seeds are removed and the item washed prior to processing.

Radishes and Tomatoes

These items are washed and sliced or diced depending on whether they will be used in a salad or as a relish tray.

SALAD FRUITS

You can use canned, frozen, dried, and fresh fruits in salads. Most fruit can be used peeled or unpeeled. Follow the procedures in this paragraph for using canned, frozen, dried, and fresh fruits.

Canned and Frozen

Canned and frozen fruits should be drained before use. Use the fruit and liquid as specified in the recipe.

Dried

Wash and drain raisins, prunes, and other dried fruits thoroughly. Prepare them according to the recipe.

Fresh

Fresh fruits should be ripe, firm, and unblemished. The fruit, except bananas, should be washed, drained thoroughly, and chilled before use.

Apples and Bananas

Cut apples and bananas into bite-size pieces or slices or as specified in the recipe. Follow the recipe carefully and keep the fruit from becoming discolored by using a natural antioxidant, such as lemon juice, as detailed in the applicable recipe.

Citrus Fruit

Oranges and grapefruit can be peeled more easily if placed in hot water for a few minutes. Use a sharp knife to cut through the rind vertically in several places, and then pull off the rind a few sections at a time. The fruit should then be sliced or diced according to the specific. recipe.

GELATIN SALADS

Gelatin salads are eye-catchers for almost any meal and are easy to prepare. Follow recipe directions for dissolving the gelatin. Add fruit (except fresh pineapple) and vegetables when the gelatin has thickened slightly. If ingredients are added before the gelatin has partially thickened, some of the ingredients will settle to the bottom. Gelatin salads can be molded in muffin tins and turned out as individual servings. To free the salad, dip the bottoms of the muffin tins in hot water (150°F to 160°F) for about one minute. If muffin tins are not available, mold the salad in flat pans, and cut them into individual servings.

COMBINING INGREDIENTS

How you combine salad ingredients will determine whether the end result is an appealing,

fresh-looking salad or not. To combine salad ingredients, you should--

· Handle the ingredients carefully. Overhandling results in an unattractive salad.

· Mix or toss the salad lightly to avoid crushing or mashing the ingredients.

· Use a fork and spoon to toss the salad. Use a container large enough to toss the salad without crushing it or spilling it.

· Use a basting spoon for blending soft ingredients such as fruit pieces and cottage cheese or potato salad.

· Mix the ingredients as close to serving time as possible.

· Use fresh, crisp lettuce leaves as a base for individual salads.

· Use an ice-cream scoop to transfer cottage cheese and other soft salads to the salad bowls.

· Arrange fruit sections neatly.

· Use a food-turner or pie- and cake-server to place gelatin salad on the salad plate.

· Arrange garnishes neatly. Never try to rearrange a salad.

SALAD DRESSINGS

Salad dressing is an indispensable compliment to a salad. It adds flavor, color, and nutrition. Serve dressings suitable in flavor and consistence. If possible, give the diner a choice of at least three different varieties of dressings. Always include low-calorie, low-fat dressings for fresh salads. When preparing French dressing, use a wire whip to beat the combined ingredients. Store the dressing in a covered container and beat or shake well before serving. The appearance of the salad dressing is just as important as the appearance of any other item on the serving line. The dressing must look fresh and appetizing and should be served in compressible dispensers, closed dispensers, or individual packages. Identify each dressing so that diners can make a choice.

SALAD BARS

Salad bars provide an excellent method to merchandise fresh fruits and vegetables and permit diners to build their own salad. Each dining facility SOP should address how the salad bar is to be established and the items to be included. Salad bars must be properly set up and maintained throughout the meal serving period. Do not overstock fresh items on the bar. Use small serving pans, and replenish the items often. Do not forget premade salads such as potato, macaroni, and so forth. Sort, trim, core, stem, separate. and wash salad bar ingredients. Discard damaged or decayed items. For detailed instructions on preparing salad bar items, refer to TM 10-412 and to the information on salad vegetables in this chapter. Besides vegetables discussed earlier, Bermuda onions, green onions. cheese. croutons, bacon bits, mushrooms, olives, grated cheeses, chopped eggs, and many other items may be included to add variety and enhance the salad bar.

CHAPTER 22

DESSERTS

GENERAL

Desserts are normally served with each lunch and dinner meal. In addition, breakfast pastries are highly accepted and could be considered as a dessert. Desserts are sometimes classified as heavy or light. They can be served hot or cold. The standard is to offer a variety of choices to the diner.

ICE CREAM

Current equipment authorizations and support from local commercial vendors provides the FSS a wide variety of choices to satisfy diner desires. Homemade ice cream is not permitted, because the raw eggs used as an ingredient may contain harmful bacteria. Choices include soft serve and specialty ice creams.

Soft Serve

Soft serve ice cream comes in several flavors, such as vanilla, chocolate, and strawberry. If you have the equipment available, you can offer milk shakes. Another highly accepted option is yogurt. It comes in many flavors. In addition, the soft serve products can be enhanced with various toppings (for example, chocolate, strawberry, cherry, or coconut).

Specialty Ice Creams

There is a wider variety of specialty (hard) ice creams. There are many flavors in individual serving cups, on sticks, and in cones. They must be kept frozen and removed from the freezer a few servings at a time. Ice cream freezers may be located so that the diner removes the product himself.

FRUIT

Fruits are an excellent dessert and provide soldiers with a nutritious alternative. They can be served alone or as a component in most other desserts (for example, in jello, cake, cookies, pies, ice cream, or custards).

Fresh Fruit

Fresh fruit is normally served whole or processed into a dessert. Fresh fruits served in dining facilities and suggestions for the preparation are in Chapter 20.

Canned Fruit

Canned fruit can be served just as it comes from the can or used as a component of a dessert. When used as a dessert, chill for several hours or overnight before serving them. Open cans as needed, and place the fruits in individual dishes or serving pans.

GELATIN DESSERTS

You can make gelatin desserts with fresh, frozen, or canned fruits. However, do not use fresh pineapple since it will keep the gelatin from setting. The suggestions in Chapter 21 for preparing gelatin salads also apply to gelatin desserts. To keep the gelatin cold, remove only one pan from the refrigerator at a time. Transfer the contents to individual serving dishes, and place them on the refrigerated counter.

SHORTCAKES

Peach, strawberry, and raspberry shortcake are made using shortcake biscuits or cake, fresh or

frozen fruit, and dehydrated dessert topping. Thaw frozen fruit unopened in the refrigerator. Place the biscuits or cake and fruit and topping in separate containers. When possible, make individual shortcake as they are needed.

PUDDINGS

Make butterscotch, chocolate, and vanilla puddings from dessert powders and nonfat dry milk. After you make the pudding, pour it into serving pans and refrigerate it until serving time. Close to serving time, spoon the pudding into individual dishes, and place the dishes on the cold-food counter. Recipes for other puddings are in TM 10-412. Serve puddings, such as rice pudding or pudding cakes, hot or cold in individual serving dishes.

DESSERT SAUCES AND TOPPINGS

You may serve dessert sauces with puddings, nonfrosted cakes, or ice cream. Find recipes for dessert sauces in TM 10-412. Sauces include butterscotch, chocolate, lemon, orange, vanilla, and pineapple. Close to serving time, spoon the sauce over the desserts which are served in individual dishes. You can also use dehydrated powdered dessert topping. Reconstitute it following the directions on the package. Then cover the topping, and refrigerate it until you are ready to use it.

DEHYDRATED APPLES

Reconstitute dehydrated apples in boiling water. Add apples to water and bring to a boil. Stir the mixture once to moisten all apples thoroughly. Simmer apples for 10 to 15 minutes or until tender. Remove them from the heat. and use them in any recipe calling for prepared sliced apples.

CRISPS AND CRUNCHES

Make crisps and crunches by arranging sliced fruits, such as apples, apricots, cherries, peaches, or pineapples on sheet pans. Sprinkle dry ingredients on the fruit to form a topping. Bake crisps and crunches until the topping is golden brown and the fruit is tender. Serve them either warm or chilled. You may also serve them with ice cream. Specific recipes are in TM 10-412.

CHAPTER 23

BAKING

GENERAL

Daily baking requirements in the dining facility are performed by cooks. Fresh-baked products should be a vital part of menu-planning. Baked products provide a wide range of items to increase customer satisfaction and contribute to well-balanced meals. This chapter discusses the preparation of pies, cakes, cookies, quick breads, and yeast-raised products.

Installation contracts for full food service or management and food production will detail requirements for the level of preparation of fresh-baked products by contractor cooks. Military cooks are taught the basics of how to bake in advanced individual training, but they will rapidly lose their skills if they do not use them.

The FSS should include baking in the OJT program and ensure that all cooks do some baking. Ensure that cooks bake some items from scratch instead of using mixes. TM 10-412 has many excellent recipes.

PRODUCTION SCHEDULING

The schedule for production of baked goods depends on the availability of ovens and counter space. If you have enough ovens and space, schedule baking along with the preparation of other menu items. Cakes and pies can be baked in the same ovens in which roasts are being cooked. This saves time and energy. If this is not possible, schedule baking at night. Detail one or more cooks as night bakers, and let them prepare baked goods when the kitchen is not busy. Batters and doughs can be prepared early and refrigerated until baking time.

RECIPE CONVERSION

Army recipes are designed to make 100 portions. Normally, you will not be baking for exactly 100 persons, and you will have to adjust ingredient amounts. TM 10-412 explains how to convert recipes that list ingredients by weight. To convert recipes that list ingredients by true percentage, perform the following steps:

- Determine the number of portions required.
- Figure the weight per portion. Do this by dividing the total weight of the dough or batter in the recipe by 100.
- Multiply the weight per portion by the number of portions required. The result is the amount of batter you need.
- Determine the amount of each ingredient needed. Multiply the amount of dough or batter needed by the ingredient percentage of each ingredient.
- Check your work. Add the weights of all the ingredients together.

PIES

The preparation of pies is discussed in this paragraph. It describes the crust, wash, filling, and meringue.

Pie Crust Preparation

You can mix pie dough by hand or by machine. First blend the dry ingredients with the shortening. As the shortening is divided and coated with flour, it forms lumps. The lumps become smaller as blending continues.

For a flaky crust, blend ingredients until lumps are between 1/2 and 1/4 inch wide. Half-inch lumps make a crust with a long flake while quarter-inch lumps make a short-flake crust. The recipe for pie dough in TM 10-412 produces a crust with a very short flake.

For a mealy crust, use either oil or hydrogenated shortening. Blend until the mixture forms

into small crumbs. Table 23-1 (page 23-2) shows how to produce different crust textures.

After dry ingredients and shortening have been blended, add cold water and mix. More water is used for a flaky crust than for a mealy crust.

Roll the dough into cylinders, and keep the dough cylinders in the refrigerator for at least one hour. Then divide the dough. Pie tins vary in size, so you may have to experiment to find out what size pieces to use. Generally, top crusts require 6 to 8 ounces of dough, and bottom crusts require 7 to 9 ounces. Shape each piece into a ball, and roll out crusts using a lightweight rolling pin. Dough that is overworked becomes tough. Figure 23-1 (page 23-3) shows how to roll pie crust.

Pie Washes

A pie wash is a liquid brushed on the top of a two-crust pie to give it a golden brown color. The liquid may be water, milk, a starch solution, or a thin syrup. The wash may be applied either before baking or about 10 minutes before the pie is done. If you brush it on before baking, be sure to let it dry before you put the pie in the oven. Do not use too much wash or the crust may have a varnished appearance or soggy spots. The rim or outer crust should never be washed or it may look burnt.

Pie Fillings

Two-crust and lattice-crust pies are usually filled with fruit which has been combined with water or juice, sugar, and other ingredients. Starch is added to thicken the filling. TM 10-412 explains how to prepare fruit fillings using either pregelatinized (cold water) starch or cornstarch.

Pregelatinized starch fillings are easier to make because they are mixed cold. Cornstarch fillings must be boiled.

One-crust pies may be filled with cream, chiffon, lemon, or meringue, pecan, walnut, pumpkin, sweet potato, and mincemeat fillings. You may use pudding mixes to make cream fillings and lemon filling for lemon meringue pie, or you may make them from scratch with cornstarch as a thickener. Gelatin provides fruit flavor and thickening to chiffon fillings.

Fillings which have been heated must be cooled before they are poured into the crust. You can make fillings ahead of time and refrigerate them until they are needed.

Handle highly perishable fillings containing milk and eggs as outlined in TB MED 530.

Meringue

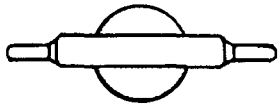
You may use meringue with one-crust pies in prebaked pie shells. Meringue is made with egg whites or meringue powder as described in TM 10-412.

Use the correct portions of egg whites and sugar and a bowl that is free of grease. Even a slight trace of grease can keep the egg whites from whipping properly. Do not underbeat or overbeat meringue. Beat it only until it stands in peaks. Then spread it evenly with the pie filling, covering it completely to the outer edge of the crust. Cover the filling and rim, or the meringue may pull away and shrink during baking.

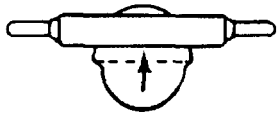
Table 23-1. Types of pie crust

TYPE	METHOD OF COMBINING DRY INGREDIENTS WITH SHORTENING	AMOUNT OF WATER TO USE (Percentage of flour weight)
Long flake	Mix until particles are 1/2 inch in diameter.	42
Short flake	Mix until particles are 1/4 inch in diameter.	36
Mealy	Mix thoroughly.	28

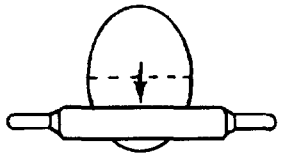
1. Put the rolling pin horizontally in the center of the shaped dough ball.



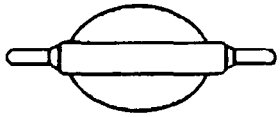
2. Roll away from the body to the edge of the dough. Lift the pin.



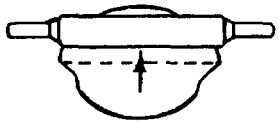
3. Put the rolling pin horizontally in the center of the dough. Roll towards the body to the edge of the crust. Lift the pin.



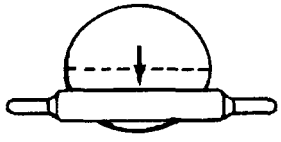
4. Turn the dough piece 90 degrees and put the rolling pin horizontally in the center of the dough.



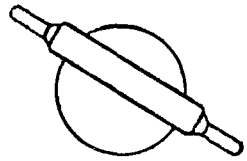
5. Roll away from the body to the edge of the dough. Lift the pin.



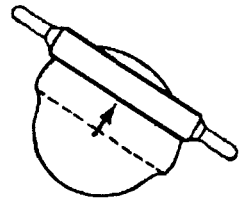
6. Put the rolling pin horizontally in the center of the dough. Roll towards the body to the edge of the dough. Lift the pin.



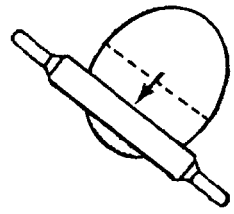
7. Without moving the dough piece, place the rolling pin diagonally in the center of the dough at a 45 degree angle.



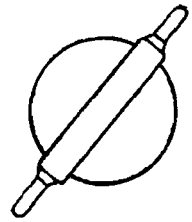
8. Roll to the upper right to the edge of the dough. Lift the pin.



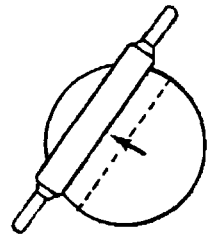
9. Put the rolling pin diagonally in the center of the dough at a 45 degree angle. Roll towards the lower left to the edge of the dough. Lift the pin.



10. Put the rolling pin diagonally in the center of the dough at a 45 degree angle.



11. Roll to the upper left away from the body to the edge of the dough. Lift the pin.



12. Put the rolling pin diagonally in the center of the dough. Roll to the lower right towards the body. Lift the pin. Measure for size, and place in the pan.

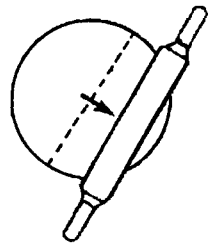


Figure 23-1. Procedures for rolling pie crust

Pie Preparation

Each type of pie or related pastry is prepared differently.

One-crust pies. After you have made the pie crust, pan it as shown in Figure 23-2 (page 23-5). Then, add the desired fillings, such as pecan, walnut, pumpkin, sweet potato, or mincemeat, to the unbaked pie shell. With these pies, you bake the filling and shell together. However, with cream, chiffon, and lemon fillings, you bake the shell before you add the filling.

Fruit pies. Pan the bottom crust. Then pour the fruit filling into the unbaked shell. Dock the top crust, and place it over the filling. Bake crust and filling together. For a two-crust pie, the top crust is a solid layer of dough. For a lattice-crust pie, the top crust is formed by laying strips of dough across the filling in a criss-cross pattern. Figure 23-3 (page 23-6) shows the process with a two-crust pie.

Cobblers. Bake a fruit filling between two large pieces of pie dough in a sheet pan. Figure 23-4 (page 23-8) shows the process.

Turnovers. Fold small squares of pie dough over a fruit filling. Seal the edges, and bake the crust and filling together.

Faults

Table 23-2 (page 23-10) lists common faults in pie crusts, describes possible causes, and suggests solutions. Table 23-3 (page 23-10) covers these types for pie fillings.

TYPES OF CAKES

Cake is a baked batter. It is made from flour, sugar, salt, leavening, shortening, milk, eggs, and flavoring. TM 10-412 has recipes for two types of cakes--batter cakes and foam cakes.

Batter Cakes

Batter cakes include white cake, yellow cake, spice cake, fruitcake, and gingerbread. These cakes contain shortening. They may be made with either general-purpose shortening or bakery emulsifier shortening. Make sure you use the type of shortening called for in the recipe. (Use general-purpose shortening unless the recipe requires otherwise.)

Foam Cakes

Foam cakes, such as jelly roll and applesauce cake, are made without shortening. They contain less baking powder than batter cakes. They are leavened mainly by beating.

CAKE MIXES

Cake mixes for angel food, banana, cheese, devil's food, pound, white, and yellow cakes and for gingerbread are available through the TISA. You can vary these mixes by adding other ingredients or by combining two mixes as suggested in TM 10-412.

CAKE FORMS

You may prepare cakes in different forms. Both batter and foam cakes may be prepared as sheet cakes, layer cakes, or cupcakes. The sheet cake is a flat, one-layer cake which is baked in a sheet pan. The layer cake is made by stacking 9-inch layers, two sheet cakes, or one sheet cake cut in half, with frosting in between. Cupcakes are baked in a muffin tin which has been lined with paper cups for easy removal.

OTHER CAKES

Other forms of cake include upside-down cake, jelly roll, and Boston cream pie. Upside-down cake is made from batter poured over fruit. When the cake is turned out of its pan, the fruit becomes the topping. Jelly roll is a thin layer of cake coated with jelly and rolled into a spiral. You can vary them by using chocolate or vanilla cream in place of jelly. Boston cream pie is a cake made from a split layer with a cream filling in the center and chocolate frosting or powdered sugar on top.

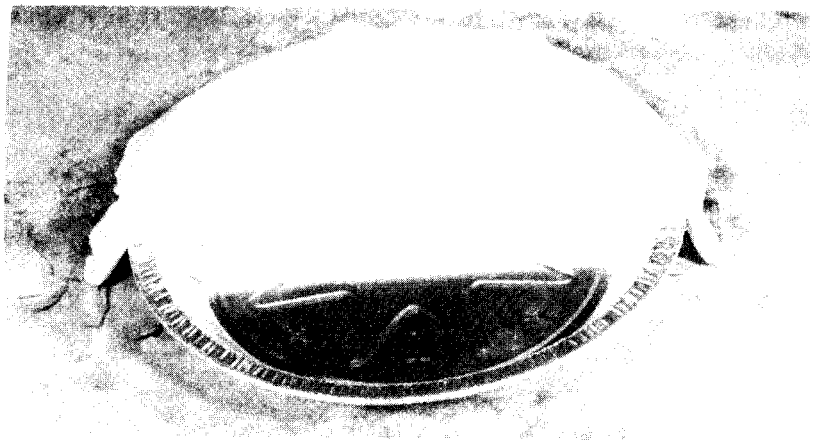
To pan the dough for a baked one-crust pie shell, size one pie crust circle, and follow these steps. ***(Dough for an unbaked pie shell is panned the same way but never docked.)***

1. Dock the sized piecrust circle.

2. Fit the docked dough to the sides and bottom of the pan to prevent pockets of air.

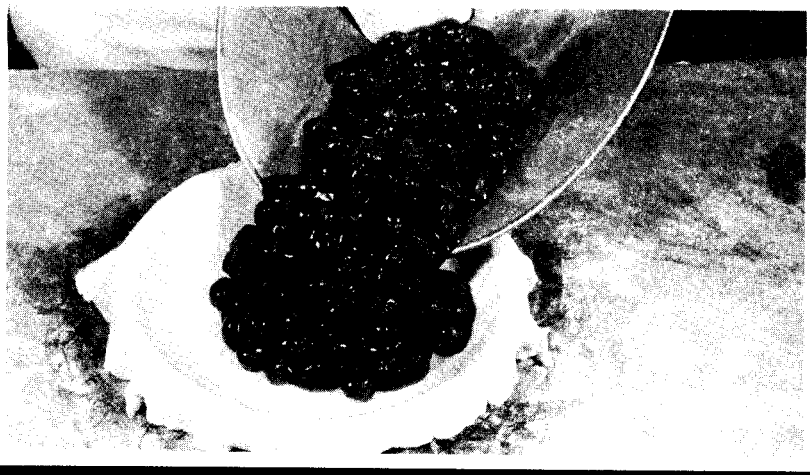
3. Trim the excess crust with fingers or a dough scraper.

Figure 23-2. Procedures for panning a one-crust pie



1. Fold the dough circle in half, pick it up, and place it on an ungreased pie pan.

2. Unfold the dough and fit it in the pan.

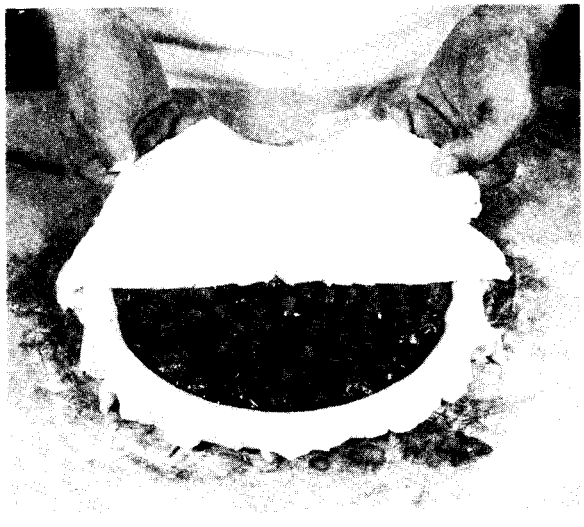


3. Add the desired filling.

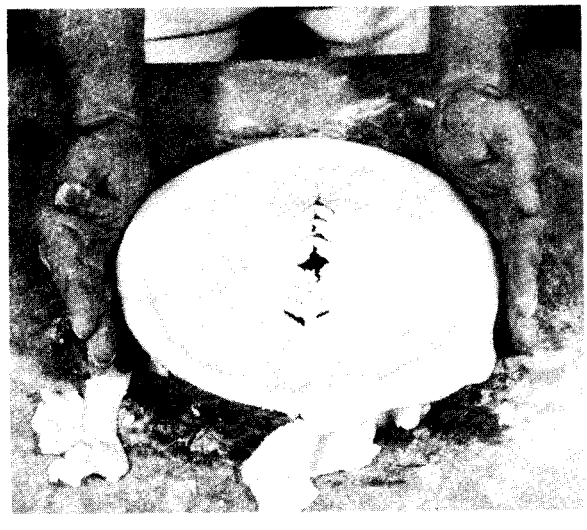
Figure 23-3. Procedures for panning a two-crust pie

4. Brush the outer rim of the bottom crust with water.

5. Fold in half the circle to be used for the top crust and dock it to allow steam to escape during baking.



6. Place the folded top crust over the filling and unfold it.



7. Press the edges together and trim the excess crust.

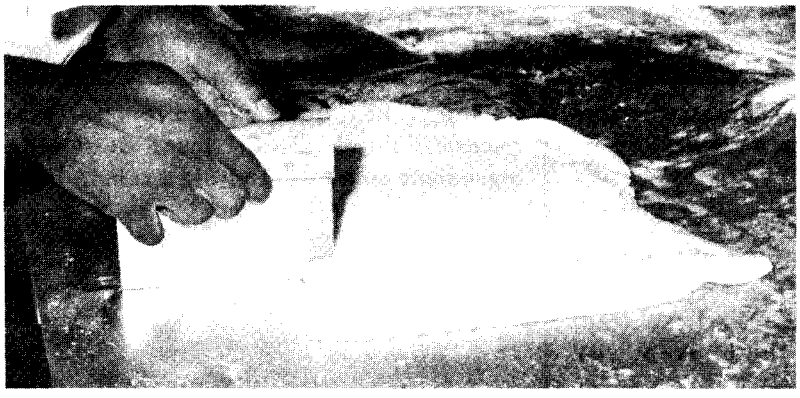
Figure 23-3. Procedures for panning a two-crust pie (continued)

1. Roll dough into a rectangular sheet about 1/8 inch thick and large enough to fit the pan. Fold the dough and place it in the pan.

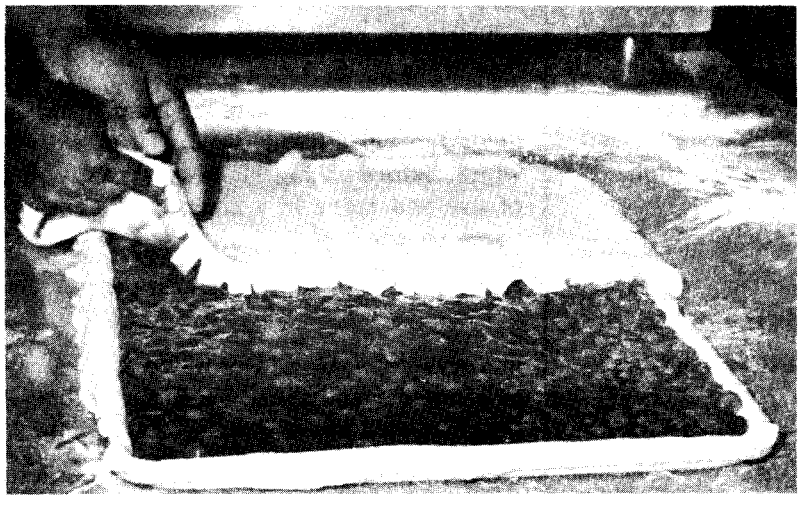
2. Unfold the dough and press it into the bottom and sides of the pan.

3. Pour 1 1/2 gallons of cooled fruit filling into the pan and spread it evenly.

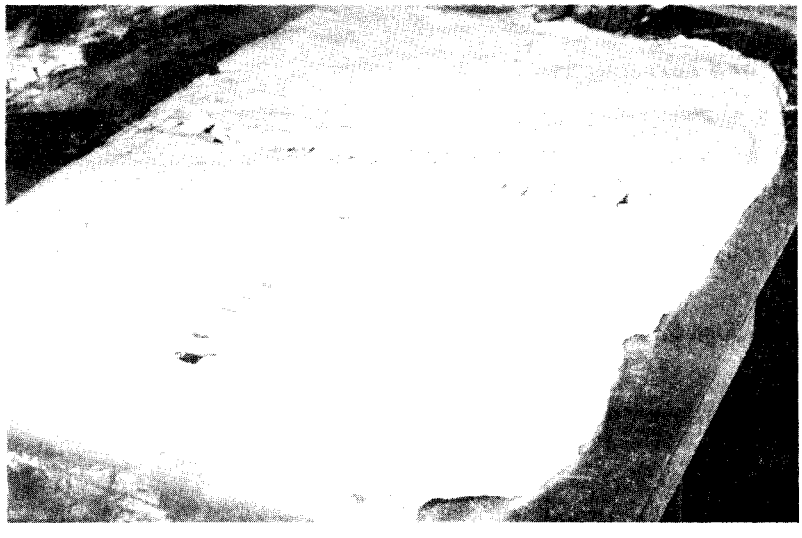
Figure 23-4. Cobbler preparation



4. Roll dough into another rectangular sheet for the top crust. Fold it in half, and then in half again. Cut small slits in the folded edges.



5. Unfold the top crust on top of the filling.



6. Seal the edges.

Figure 23-4. Cobbler preparation (continued)

Table 23-2. Faults in pie crust, causes, and corrections

FAULT	CAUSES	REMARKS
Shrinks too much	Dough undermixed in first step, overmixed in final step, overworked or stretched.	If dough has been rolled properly and excessive shrinkage still occurs, check recipe, ingredient amounts, and oven temperature.
Tough	Too much water, flour too strong, shortening too stiff, or not enough shortening. Dough undermixed in first step, overmixed in final step, or overworked.	
Not flaky	Shortening too soft. Flour and shortening rubbed too much during mixing.	Use chilled water and shortening for a firmer consistency; keep dough in a cool place until it is used.
Soggy	Too much shortening or wrong type of flour. Fruit filling too hot or too thin.	To seal crust and keep it from absorbing liquid from the filling, wash crusts with egg whites before baking. Make crusts a day ahead of use and store in a clean, well-ventilated room to dry out.
Sticks to pie tin	Filling boiled over. Pan new, wet, or dirty.	Heat oven to proper temperature.
Pale	Not enough top heat in oven.	Improve color by adding up to 5% dry skim milk powder and about 3% sugar to formula. You may also use egg wash to add color.
Prebaked pie shell draws up		Dough overmixed or too lean, scrap dough used, or too much water.

Table 23-3. Faults in pie fillings, causes and corrections

FAULT	CAUSES	REMARKS
Fruit boils out	Filling too hot, slightly fermented, or too much filling. Lack of holes in top crust.	Steam pressure may build up in a double-crust pie. If crust breaks open, filling may spill out.
Pumpkin pie cracked	Too many eggs, not enough liquid, or pie overbaked.	
Pumpkin pie blistered	Pie overbaked or baked in oven that is too hot.	
Lemon or cream pie cracked	Filling cooked too long. Filling contains excess starch, too many eggs, or too little butter or margarine.	

Table 23-3. Faults in pie fillings, causes and corrections (continued)

FAULT	CAUSES	REMARKS
Filling off-flavored	Improper ingredients or excess starch.	Make sure flavoring is good quality. Add it in proper proportions.
Filling broken	Filling cooled too slowly after cooking or not stirred often enough while cooking.	
	Too much acid in fruit filling.	Add more starch and if possible, reduce acidity.
Flat or bland	Lacks salt or fruit acids.	Add citric or tartaric acid.
Poor color *(fruit filling)*	Too much thickening.	Make sure fruit does not stand exposed to air because it may oxidize. A small amount of food coloring may be added.
Too thin	Too little starch or too few eggs. Filling undercooked.	
Too thick	Too much starch, too little sugar, or not enough liquid. Filling overcooked.	
Meringue broken down	Egg whites whipped in container with oily surface.	
	Too much moisture in egg whites.	Add small amount of cornstarch to egg whites to absorb excess moisture.
	Egg whites underwhipped or underbaked.	
	Mix contains too much or too little sugar.	

PREPARATION OF BATTER

When making batter from cake mix, follow directions on the mix container. When making it from scratch, follow recipe instructions. The temperature of ingredients is very important in batter preparation. Shortening should be workable, neither very cold nor warm enough to liquefy. In general, all ingredients should be at room temperature unless the recipe specifies otherwise. Water should be cool, and eggs should be removed from the refrigerator 30 minutes before use. Weigh or measure all ingredients accurately. Follow the mixing procedure in the recipe. Do not overbeat or underbeat. Follow very closely the correct length of time for beating at each stage shown on the recipe card.

Preparation of Pans

For most cakes, the cake pans must be greased before the batter is poured in. Each recipe tells how to prepare pans. If a cake is to be served from the pan, coat the pan with dobie, a mixture of two parts shortening and one part flour. If the cake is to be removed from the pan, coat the pan with grease and line it with paper.

Procedures for Panning Batter

The recipe tells you what size cake pan to use and how much batter to pour into it. If you use a different size pan, you will have to use a different amount of batter. Pan batter as follows:

- Pour amount specified in recipe into the pan.
- Spread batter evenly with a spatula.
- Remove air bubbles by tapping pan lightly on a table or by cutting through batter with a knife.
- Place batter-filled pan into preheated oven immediately.

BAKING PROCEDURES

Preheat the oven for at least 10 minutes to ensure that it has reached the proper temperature. The recipe shows what temperature to use and how long the cake should be baked. Follow recipe instructions closely. Space the pans in the oven evenly to allow heat to circulate between them. Do not let pans touch each other or the sides of the oven. Do not jar the pans while the cakes are baking or they may fall. Baking time will vary, depending upon the temperature of the oven. There are two ways to find out if a cake is done. One is to touch the top of the cake near the center. If the cake springs back, it is done. The other is to insert a toothpick near the center. The cake is done if the toothpick comes out clean.

REMOVAL OF CAKES FROM PANS

Jelly rolls and upside-down cakes must be removed from the pans while they are still hot. Allow other kinds of cake to cool in the pans for 10 minutes before you turn them out. Place pans on racks to let air circulate freely around them, but keep them out of drafts. Layer cakes should be turned out onto paper dusted lightly with cornstarch or powdered sugar. Sheet cakes may be turned out or frosted in the pans. Turn them out onto an inverted pan covered with paper that has been dusted with cornstarch or powdered sugar. Allow cakes to cool thoroughly before frosting.

FROSTINGS

Frosting makes cakes look and taste better. It also makes them last longer by keeping moisture in. The TM 10-412 tells how to make different frostings. Choose one that will go well with the cake you have prepared. (For example, use mildly-flavored, fluffy frostings on light cakes such as sponge or angel food cakes.) Finished frosting should be smooth and thin enough to spread easily. To color white frosting, add food coloring to a small amount of frosting. Then mix parts of the colored frosting with the plain frosting until you get the desired color. Do not use too much food coloring. Deeply colored frostings lack eye appeal.

FILLINGS

TM 10-412 tells how to make banana cream, chocolate cream, lemon cream, pineapple cream, vanilla cream, and pineapple fillings. You may make cream fillings from pudding mixes or from scratch. Bacteria grows rapidly in cream fillings, so you must either serve them immediately or keep them refrigerated. Table 23-4 (page 23-13) shows safe keeping times for cream fillings at different temperatures. TB MED 530 has additional information on this subject.

FINISHING PROCEDURES

Different types of cakes may be finished in different ways. Figure 23-5 (page 23-13) shows how to finish a layer cake. Figure 23-6 (page 23-15) shows how to prepare a Boston cream pie. You may leave sheet cakes in a pan and frost them only on the top or finish them with a topping of nuts, coconut, chocolate chips, or cherries. Frost the

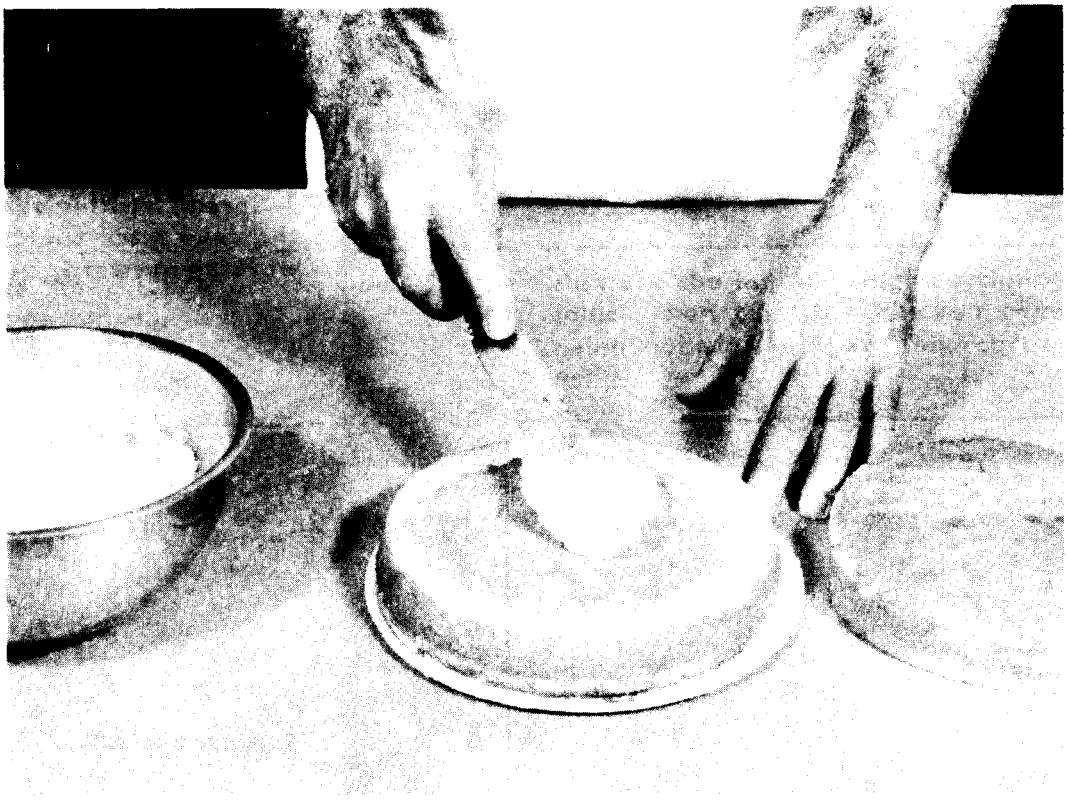
cake as soon as possible after it is cool to help hold its moisture.

CAKE FAULTS

Baking is as much an art as it is a science. Cakes and frostings are subject to numerous faults with even more numerous causes. Table 23-5 (page 23-16) lists common faults in cakes along with their possible causes and suggested remedies. Table 23-6 (page 23-24) lists frosting faults, causes, and remedies.

Table 23-4. Safe keeping times for cream fillings

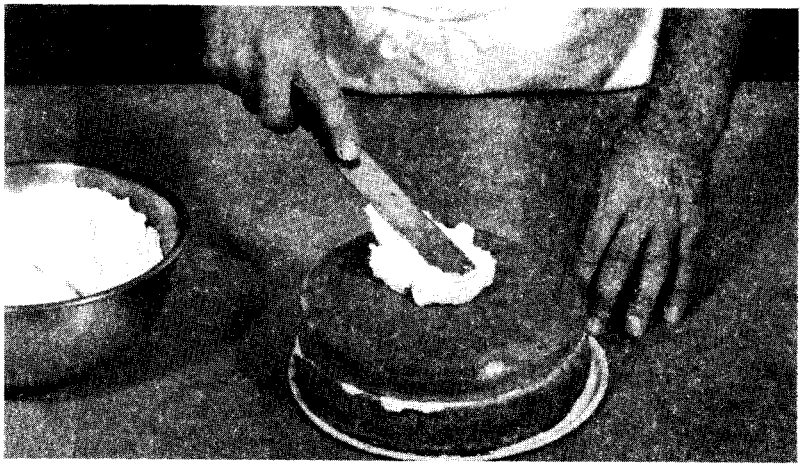
INTERNAL TEMPERATURE	MAXIMUM TIME BEFORE SERVING
45 degrees	36 hours
40 degrees	5 days
0 degrees	45 days



1. Use a spatula to spread a thin layer of frosting or filling evenly over the bottom layer.

Figure 23-5. Procedures for finishing a layer cake

2. Cover with the top layer.

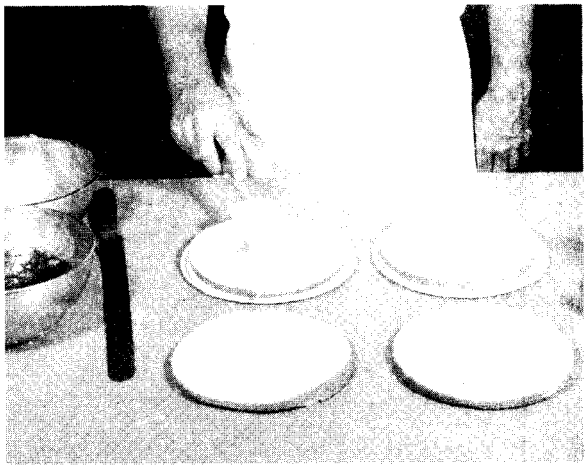


3. Spread frosting on the top of the cake from the center and working outward.

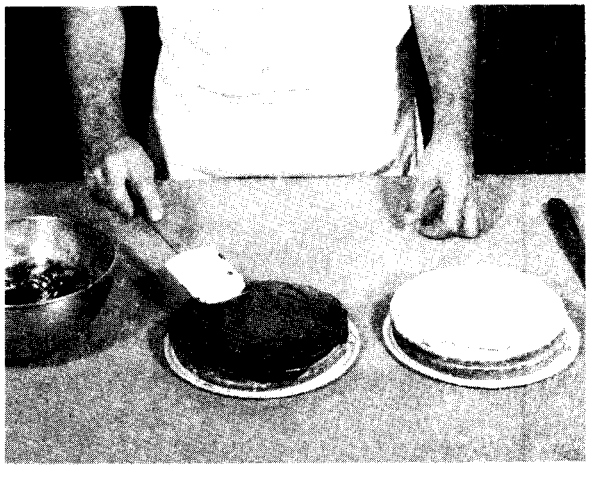
4. Frost the sides.

Figure 23-5. Procedures for finishing a layer cake (continued)

1. Cut a layer cake in half.



2. Spread cream filling on the bottom half.



3. Add the top and cover with chocolate frosting . . . . . .

OR dust with powdered sugar.

Figure 23-6. Boston cream pie preparation

Table 23-5. Faults in cakes, causes, and corrections

FAULT	CAUSES	REMARKS
LAYER CAKE:		
Falls during baking	Too much leavening, sugar, or baking shortening; not enough eggs, too little water; or wrong type of flour. Batter overcreamed. Baking temperature too low or cake jarred while baking.	
Lacks volume	Not enough leavening or leavening of poor quality. Ingredients faulty. Batter too stiff, too soft, or too warm; or too little batter for the size of pan.	Do not use strong flour. Use hydrogenated shortening. Do not add eggs to batter when they are too cold.
Crust too thick	Too much sugar, or flour too strong. Cake overbaked or oven temperature too high or too low. Baking pan too deep.	
Too tender	Too much shortening, sugar or leavening; flour too weak; or too few eggs. Batter not mixed well enough.	
Tough	Too little sugar or shortening, flour too strong, or too many eggs. Eggs overbeaten. Batter overbeaten or underbeaten.	
Cracks on top	Too little leavening, shortening, or sugar. Batter too stiff. Batter overbeaten. Oven temperature too high.	
Crust too dark	Too much sugar. Cake overbaked or oven too hot.	
Coarse grain	Too much sugar or leavening; or wrong type of leavening, flour, or shortening. Ingredients improperly mixed. Oven temperature too low.	Avoid overmixing or undermixing. Use speed indicated on recipe. Ingredients should be at room temperature when mixed.
Uneven holes or tunnels	Too much or too little sugar, or wrong type shortening, flour too strong, or too many eggs. Ingredients improperly mixed.	

Table 23-5. Faults in cakes, causes, and corrections (continued)

FAULT	CAUSES	REMARKS
Excessive shrinkage	Too much leavening, wrong type shortening, or flour.	
	Batter overmixed.	
	Formula too lean.	Add more sugar or shortening.
	Pan greased too much or too little batter in pan.	
	Cake baked improperly.	Do not overbake. Do not use oven that is too hot or too cold.
Spots on top crust	Sugar too coarse.	Make sure that sugar is dissolved.
	Ingredients mixed improperly.	
	Too much steam in oven.	
Develops mold	Utensils or storage area not sanitary, or personnel not clean.	
	Too many moisture retaining ingredients used.	
	Cake underbaked.	
Off-colored *(white cake)*	Oven too cool.	Do not allow cake to bake too slowly. Add a small amount of cream of tartar to improve color.
Poor flavor	Poor quality ingredients.	Use flour, eggs, shortening, and flavoring as called for in formula.
	Ingredients used in incorrect proportions.	
	Pan dirty or pan grease rancid.	
Crust peels off	Too much shortening or sugar, flour too weak.	
	Cake cooled improperly.	Allow cake to cool slowly in place that is free of drafts.
Hollow spots on bottom	Egg content too high.	Decrease eggs or increase milk and leavening.
	Batter too stiff.	Use enough liquid to allow batter to flow properly.
	Pans damp or overgreased.	If air pockets form under paper liner, use perforated liner.
	Too much bottom heat.	When making sheet cake, use double pan. When making layer cake, put layer pans in sheet pan.
		Increase sugar and shortening.
Center peaks	Formula too lean, or too many eggs.	Use fewer eggs or more milk and leavening.
	Batter overmixed.	
	Oven too hot.	

Table 23-5. Faults in cakes, causes, and corrections (continued)

FAULT	CAUSES	REMARKS
Crust pale	Sugar too coarse or not enough sugar used. Wrong type of shortening, or too little leavening. Batter mixed improperly. Not enough batter in pan. Cake underbaked.	
Unevenly baked	Batter improperly mixed. Pan dented or uneven. Too much batter in pan or batter not spread evenly. Oven faulty.	
POUND CAKE:		
Lacks volume	Too little leavening or too many moisture retaining ingredients. Wrong type of shortening. Batter too stiff, too soft, or too warm. Eggs too cold. Sugar and shortening improperly creamed. Not enough batter for size of pan. Oven too hot.	If cocoa or chocolate is added, formula may have to be adjusted. Use hydrogenated shortening. Let eggs reach room temperature before beating. Cream thoroughly; use bowl of proper size and use speed indicated in recipe. Too much heat causes the cake structure to form before the leavening has time to produce desired volume.
Sugary top	Too much sugar or not enough moisture for amount of sugar used. Too little salt in formula. Sugar too coarse. Too much time between mixing and baking. Steam in oven.	Dissolve sugar completely. Crust will form on top of batter if it is allowed to stand exposed to air.
Falls during baking	Too much sugar, shortening, or leavening; or not enough eggs. Batter overcreamed. Cake jarred during baking. Oven temperature too low.	
Crust too thick	Too much sugar. Too much batter in pan. Baking pan not lined. Overbaked, or oven temperature incorrect.	

Table 23-5. Faults in cakes, causes, and corrections (continued)

FAULT	CAUSES	REMARKS
Tough	Not enough sugar or shortening, or too many eggs.	
	Batter overmixed, or ingredients not blended properly.	When cocoa or chocolate is used, formula may have to be adjusted.
Crust to dark	Too much sugar, cake overbaked, or oven too hot.	
Uneven holes or tunnels	Too much or too little sugar, or too many eggs.	
	Tough chalazas in eggs.	Use frozen eggs.
	Batter blended or mixed improperly.	Follow recipe carefully. Have ingredients at proper temperature for creaming. Avoid overmixing, undermixing, or mixing at high speed. Remove any lumps of sugar or shortening that stick to bowl bottom or creaming arms, and blend lumps into batter. Do not allow batter to become stiff.
Too tender	Not enough eggs, or too much sugar, shortening, or leavening.	
Cracks on top	Not enough leavening, sugar, or shortening; too many eggs; or failure to adjust formula when cocoa or chocolate was added.	
	Fruit not soaked properly.	If raisins or other fruits are added, soak them as specified in recipe.
	Batter overmixed.	
	Batter too stiff.	
	Batter scaled improperly.	
	Oven too hot, or too much top or bottom heat.	
Open grain	Too little liquid in batter, too much inert syrup, too many eggs, not enough leavening, or formula not adjusted when cocoa or chocolate was used.	
	Leavening old.	
	Batter too stiff.	
	Batter undermixed.	
Excessive shrinkage	Too much leavening or moisture.	
	Batter overcreamed or overmixed, or eggs overbeaten.	
	Pan greased too heavily, or not enough batter in pan.	

Table 23-5. Faults in cakes, causes, and corrections (continued)

FAULT	CAUSES	REMARKS
	Cake overbaked or underbaked, or temperature too low. Cake cooled improperly.	
Spots on top crust	Sugar too coarse or not completely dissolved. Flash heat or too much steam in oven.	
Develops mold	Cake handled carelessly or stored improperly. Dirty utensils used.	
Off-colored *(white or yellow cake)*	Too much leavening. Low acidity.	To increase acidity, add cream of tartar to mix.
	Fruit not mixed well with other ingredients. Oven too cool. Batter too warm.	
Poor flavor	Too much flavoring or leavening, or not enough salt. Pan dirty or pan grease rancid. Cake overbaked. Cake cooled or stored improperly.	
Hollow spot on bottom	Egg content too high. Batter too stiff. Baking pan not properly prepared.	Add moisture. Dry pan before using. Place liner in pan so that no air pockets form under the batter. Use preforated liners. Do not use too much pan grease.
Center peaks	Formula too lean or egg content too high. Batter overmixed. Batter scaled improperly. Oven too hot.	Use fewer eggs or increase milk and leavening.
Poor texture	Too much leavening, sugar, shortening, acid, or soda. Eggs not handled properly. Wrong type of shortening. Batter creamed improperly.	Avoid overbeating or underbeating. For best results, use hydrogenated shortening at a temperature of 70° F to 75° F. Use bowl of proper size for amount of ingredients being creamed. Adjust machine so that creaming arm reaches bottom of bowl. Scrape creaming arm down so that no lumps of shortening remain.

Table 23-5. Faults in cakes, causes, and corrections (continued)

FAULT	CAUSES	REMARKS
	Mixing speed too high. Cake overbaked, underbaked, or jarred while baking.	
Crust peels off	Too much shortening or sugar. Too much top heat, or too much steam in oven. Cake cooled improperly.	
Crust pale	Low sugar or leavening content, or too much flour. Wrong type of shortening or sugar used. Batter mixed improperly. Oven too cool.	Use hydrogenated shortening and fine sugar.
Bakes unevenly	Leavening not distributed evenly. Batter not spread evenly in pan. Pan dented. Oven heat uneven, or racks uneven.	Mix batter thoroughly. Eliminate excessive top or bottom heat and cool spots in oven. Make sure that racks are even in oven.
FRUITCAKE:		
Falls during baking	Too much shortening, sugar or leavening, or not enough eggs. Batter overcreamed. Cake jarred during baking.	
Lacks volume	Not enough leavening. Wrong ingredients. Fruit content high. Batter too stiff. Not enough batter for size of pan. Oven too hot.	 Use eggs at room temperature. Use hydrogenated shortening. Cake with high percentage of fruit mixture and low percent age of batter will be smaller than cake of equal weight with less fruit and more batter. Add water.
Crust too thick	Too much sugar in batter. Too much batter in pan. Oven too hot, or cake baked at too low a temperature for too long a time.	
Too tender and crumbly	Too much shortening, sugar or leavening; not enough eggs; lack of moisture retaining ingredients. Batter undermixed or overcreamed.	

Table 23-5. Faults in cakes, causes, and corrections (continued)

FAULT	CAUSES	REMARKS
	Batter too warm. Fruit not soaked.	Prepare fruit as specified in recipe.
Tough	Not enough sugar or shortening or too many eggs.	
Cracks on top	Not enough leavening, sugar, or shortening. Wrong type of shortening. Fruit not soaked properly. Batter overmixed or too stiff. Cake baked improperly.	Use hydrogenated shortening. Prepare fruit as directed in recipe. Add water. Use some steam in oven; do not have oven too hot.
Crust too dark	Too much sugar. Oven too hot.	
Coarse grain	Too much sugar or leavening. Ingredients mixed improperly. Batter too stiff. Oven not hot enough.	Avoid creaming at a high speed, and make sure that ingredients are thoroughly mixed and not too warm.
Excessive shrinkage	Too much leavening. Batter overcreamed. Not enough batter in pan. Oven too hot or too cool.	
Develops mold	Utensils or storage area not sanitary, or personnel not clean. Too many moisture retaining ingredients used. Cake underbaked. Cake stored improperly.	Cool cake thoroughly before storing. Store in a clean, dry, well-ventilated place.
Spots on top crust	Sugar too coarse or not completely dissolved. Racks not clean.	
Off-colored	Too much inert sugar or malt syrup, or acid content too low. Ingredients of poor quality or not prepared properly. Sugar crystals rub metal from bowl during mixing. Caked baked improperly.	Make sure that flour and shortening are white. Drain fruit thoroughly before using it. Cream shortening before adding any sugar. White fruitcakes will darken if baked too slowly.

Table 23-5. Faults in cakes, causes, and corrections (continued)

FAULT	CAUSES	REMARKS
Poor color *(dark fruitcake)*	Poor grade of molasses used. Acid content too high.	Prepare fruit as specified in recipe.
Poor flavor	Too much flavoring, or too little salt. Ingredients rancid or of poor quality. Ingredients not properly mixed. Baking pan not clean, or pan grease rancid. Cake overbaked. Cake stored improperly.	
Poor keeping quality	Too much leavening, or not enough sugar or shortening. Incorrect amount of moisture retaining ingredients. Batter overcreamed. Cake baked too long in oven that is too cool.	Add moisture retaining ingredients.
Center peaks	Formula too lean, or egg content too high.	Increase amount of sugar and shortening, use fewer eggs, or increase amount of milk and leavening.
	Fruit not soaked properly. Batter overmixed or undermixed. Batter too stiff. Oven temperature too high. Too much sugar or shortening. Batter overcreamed Too much steam in oven.	Add water.
Crust peels off	Too much leavening, or not enough eggs.	Structure cannot hold weight of the fruit. Use more eggs to strengthen cake structure. Decrease milk and leavening.
Fruit sinks to bottom of cake	Fruit not properly prepared. Batter overcreamed or too soft. Oven temperature too low.	Process fruit according to recipe.
Bakes unevenly	Ingredients mixed improperly. Uneven oven heat.	Follow mixing procedure in recipe and make sure that ingredients are mixed.

Table 23-6. Faults in frostings, causes, and corrections

FAULT	CAUSES	REMARKS
Does not spread easily	Frosting too thick.	Add water or simple syrup* to uncooked frostings. Warm cooked frostings.
Granular *(dried out)*	Frosting exposed to air too long.	Replace sugar in recipe with syrup.
Separates from cake	Cake frosted before it has cooled.	
Soggy cake crust	Cake frosted before it has cooled.	
Curdled	Too much liquid used in recipe with hydrogenated shortening.	
Tastes bad	Wrong amounts of ingredients used. Ingredients spoiled.	

* *TO MAKE SIMPLE SYRUP,* boil 12 pounds of sugar with 4 pounds of water and 1/4 ounce of cream of tartar. For smaller portions, reduce quantities.

COOKIES

There are three basic types of cookies. They are drop cookies, sliced cookies, and bar cookies. All may be made from cookie mixes or from scratch.

Makeup

Cookies are made up in different ways depending on the final form you want them to take.

Drop. Drop soft dough from a spoon or ice cream scoop onto a sheet pan. You can also use a pastry bag to drop the dough.

Sliced. Handle the dough as little as possible, and use a minimum amount of dusting powder. Roll the dough into a long cylinder, and slice it with a sharp knife or a baker's scraper. Use a marked stick as a cutting guide. Figure 23-7 (page 23-25) shows how to make up sugar cookies. This type of cookie can also be rolled out and cut with a cookie cutter, but this takes longer and results in leftover dough. Some cookies must be refrigerated before they are cut. When the recipe calls for refrigeration, remove the roll from the refrigerator about 5 to 10 minutes before slicing so that the dough will not crumble.

Bar. Form bar cookies from rolls of dough flattened in a sheet pan (Figure 23-8, page 23-26). Brownies and gingerbread, which are made from dough spread into a sheet pan before baking, are also classified as bar cookies. They are usually cut while warm to keep them from breaking.

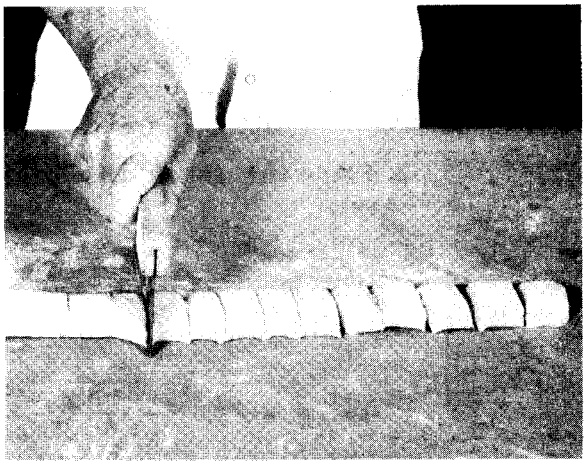
Baking Procedures

Preheat ovens to required temperature. Turn out brownies like a layer cake, score lightly, and then cut when they are cool. Do not stack warm cookies or they will stick together. Frost cookies when they have cooled, or leave them plain. You may use a dusting of powdered sugar instead of frosting.

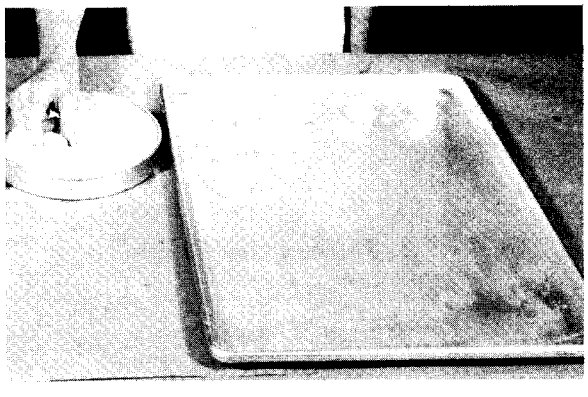
Faults

Table 23-7 (page 23-27) lists common faults found in cookies, causes, and corrective actions.

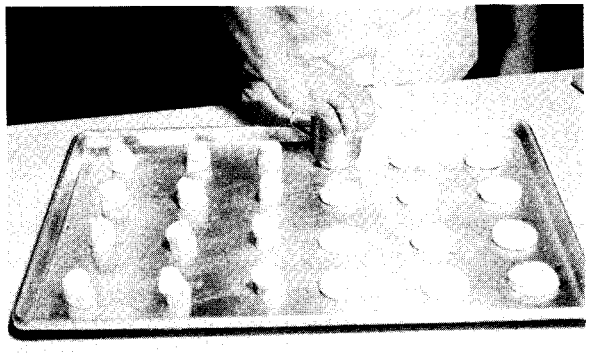
1. Roll dough into a cylinder.



2. Cut the dough into 2 ounce pieces.



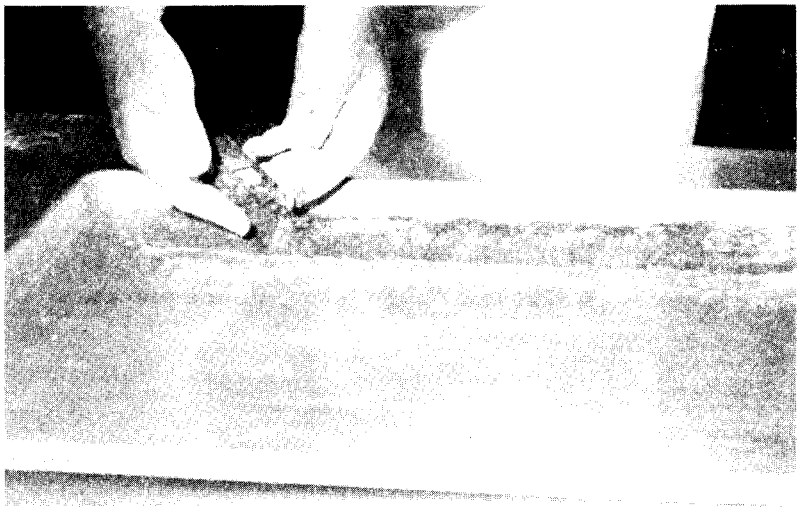
3. Dip the pieces in sugar, and place them, sugar side up, on lightly greased sheet pan.



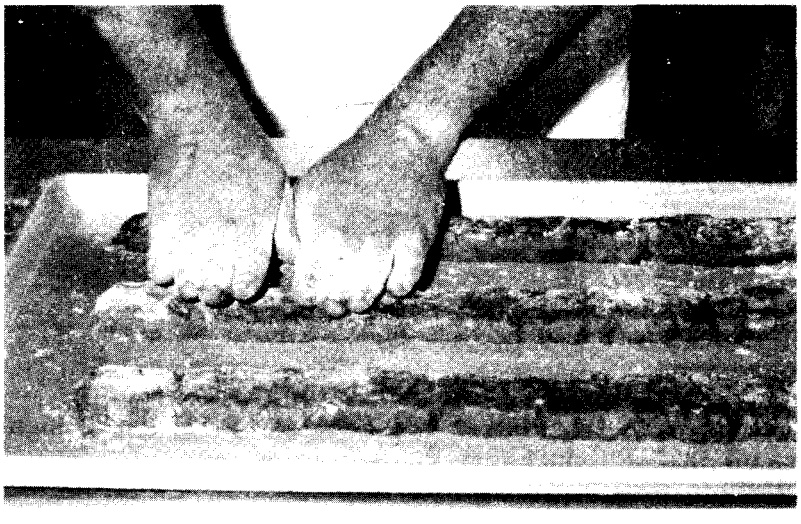
4. Flatten the cookies to about 1/2 inch thickness. Place in oven.

Figure 23-7. Makeup of sugar cookies

1. After scaling dough, roll it into a cylinder.



2. Place the dough on a baking sheet.



3. Flatten the dough.

Figure 23-8. Makeup of bar cookies

Table 23-7. Faults in cookies, causes, and corrections

FAULT	CAUSES	REMARKS
Lack spread	Wrong type of sugar.	Use sugar of regular granulation which will not dissolve readily during spreading.
	Wrong type of flour.	Bread flours are not suitable for baking cookies which need to spread.
	Too much binding material.	Amounts of binding ingredients in formula (flour, moisture, milk solids) should be reduced or offset by an increase in one or more tenderizing ingredients. (sugar, shortening, egg yolks, and leavening).
	Not enough leavening.	
	Batter or dough mixed improperly.	Avoid overcreaming sugar and shortening. Avoid overmixing batter or dough after flour and other ingredients are added.
	Pan not prepared properly.	Grease pan lightly.
	Dough overworked or too much scrap dough used.	Cut cookies to reduce scrap dough. Handle dough as little as possible.
	Too much dusting flour or cookies washed with wrong type.	Retards spread. Egg washes, which contain high percentage of eggs, prevent cookies from spreading properly. Use milk, sour cream, sugar and water, or a light egg wash.
	Oven too hot.	
Too much spread	Wrong type of sugar.	Use fine granulated or powdered sugar for little or no spread.
	Wrong type of flour.	Use bread flour for no spread.
	Too much tenderizing material.	Amounts of binding ingredients in formula (flour, moisture, milk solids) should be increased.
	Too much leavening.	Reduce leavening.
	Cookies deposited in warm pan.	
	Too much pan grease.	Pan not prepared properly. Grease pan lightly.
	Oven too cool.	
Poorly shaped	Dull or bent cutter.	
	Pan bent or dented.	
	Oven too hot or to cool.	
Break during handling	Formula too rich in shortening.	Use bleached cake flour when handling; formula contains large amount of shortening.
	Not enough eggs or flour.	
	Too much sugar.	
	Lack of pan grease.	
	Cooled too rapidly.	
	Oven too cool.	

Table 23-7. Faults in cookies, causes, and corrections (continued)

FAULT	CAUSES	REMARKS
Off-flavored	Ingredients faulty. Pan dirty. Overbaked. Too much or wrong type leavening.	Store ingredients properly. Pan grease becomes rancid and is absorbed by the cookies.
Poor keeping qualities	Not enough moisture retaining ingredients. Dough aerated too much. Cookies stored improperly.	Add ingredients such as honey, molasses, and brown sugar to prolong keeping time. Opened-grained cookies tend to dry out and become stale quickly. Store in clean, dry, well-ventilated place.

QUICK BREADS

Quick breads are similar to yeast-raised products. However, they are easier to prepare because they are leavened with baking powder or soda instead of yeast.

Types

Some quick breads are biscuits, muffins, corn bread, and coffee cake.

Biscuits. Baking powder biscuits are made from flour, milk, baking powder, shortening, and salt, or from biscuit mix. They are baked in sheet pans and come out round with flat tops.

Muffins. Muffins are made from batter that includes all the ingredients used in biscuits plus sugar and eggs. They are baked in muffin tins. Muffins have rounded tops and are sweeter than biscuits.

Corn bread. Corn bread is made from batter which contains cornmeal. It may be baked in a sheet pan or in muffin tins. Corn bread is yellow, with a granular texture.

Coffee cake. Many varieties of coffee cake are made with baking powder or biscuit mix. Coffee cake is made from a dough which contains a high percentage of sugar. It is baked in a cake pan.

Mixing Procedures

You may make quick breads from scratch or from mixes. Biscuit mix can be used to make coffee cake as well as biscuits. You can make muffins from cake mix. There is also a mix to make corn bread. TM 10-412 tells how to prepare dough or batter for each type of quick bread. Mix the batter or dough only long enough to moisten dry ingredients and distribute liquid evenly. Even if the batter looks lumpy, you have mixed it properly when no dry ingredients are showing.

Makeup

Make up and pan quick breads are described in recipes. Be sure that your biscuit cutter is sharp. A dull cutter will pinch the edges of the dough and leave an uneven product. Place biscuits in an ungreased or slightly greased sheet pan. Add leftover dough to fresh dough before you knead it. Biscuits may be made up early and refrigerated until you are ready to bake them.

Baking Procedures

Follow baking time and temperature given in the recipe or on the box. Serve quick breads hot.

Faults

Table 23-8 (page 23-29) lists common faults found in quick breads and their causes.

Table 23-8. Faults in quick breads and causes

	CAUSES	FAULTS
BISCUITS	Tough crumb	Too little shortening, too little baking powder, or too much liquid. Dough too cold or overmixed. Baking temperature too low.
	Coarse crumb	Too little liquid or too much baking powder. Dough too warm or improperly mixed.
	Dry	Too little sugar or shortening. Dough too stiff. Biscuits overbaked or oven was not hot enough.
	Flat and heavy	Wrong ingredient proportions. Dough too stiff, too cold, or not mixed properly. Oven temperature too low.
	Hard crust	Biscuits overbaked or oven too hot.
	Crumbly texture	Too much sugar or baking powder, or not enough liquid.
	Pale crust	Not enough sugar. Dough too stiff. Oven temperature too low.
MUFFINS	Tough crumb	Wrong ingredient proportions. Batter overmixed.
	Dry	Too much baking powder or too little sugar or shortening. Batter too stiff. Muffins overbaked.
	Holes or tunnels	Not enough liquid or shortening. Batter overmixed.
	Heavy uneven grain	Not enough leavening. Not enough shortening.
	Muffins peak	Batter too stiff. Batter overmixed. Pans too full. Oven too hot.
	Unevenly browned	Wrong ingredient proportion. Batter not mixed thoroughly. Oven temperature uneven or too high.
	Poor flavor	Too much soda. Batter mixed improperly.

YEAST-RAISED PRODUCTS

Recipes for a variety of yeast-raised products are in TM 10-412. These include bread, rolls, baking-powder and yeast biscuits, English muffins, coffee cakes, and Danish pastries. Timing and scheduling are very important with these products. Preparation time must allow for fermentation. Also, you must have oven space available without delay when the item is ready to be baked.

Preparation of Dough

When using active dry yeast, follow the steps described below to prepare the dough. Skip the first step when you use instant active dry yeast. Instant yeast does not have to be suspended. Add instant yeast along with the other dry ingredients.

Suspend active dry yeast when it is used as the leavening agent. Sprinkle the yeast into a portion of the water which has been heated to between 105° F and 110° F. The recipe tells you how much water to use. Stir and allow the solution to stand for about five minutes. Then stir the solution again before adding it to the other ingredients. (Temperature control is vital. Temperatures above 110° F will kill yeast. Temperatures below 105° F will slow fermentation.)

Temper the water. Temperature of the dough should be 80° F when it comes out of the mixer. You can control the dough temperature by controlling the temperature of the water that goes into it. To control water temperature, first you must figure out the proper temperature. Follow the steps in Figure 23-9 (page 23-3 1) to determine proper temperature. Heat or cool the water to the desired temperature.

After scaling and preparing the ingredients, mix them by machine with a dough hook until all the flour is mixed into the liquid. Continue mixing the dough until it is smooth and elastic. You must mix thoroughly to distribute the yeast cells and the food for the yeast, to remove lumps, and to form and develop the gluten, To determine if the gluten is developed, stretch a piece of dough between your fingers. If the gluten has developed properly, you can stretch the dough so thin that you can almost see through it. Stop mixing at this stage, or the dough will become sticky and inelastic. You should mix only until hard-roll dough is of a medium consistency, soft-roll dough is soft, and sweet-roll dough is fairly soft and slightly sticky. Then place the dough in a lightly greased bowl, and smooth it by folding. Use a bowl about three times the size of the dough to allow room for expansion. Do not grease the bowl too heavily or the excess grease may cause streaks in the baked items.

Fermentation

Cover the bowl with a clean, damp cloth, put it in a warm place (about 80° F), and let it stand for the amount of time required in the recipe. Test the dough from time to time by inserting your fingers into the dough. When the dough sinks slowly around the depression, it is ready to be punched. If it springs back, it is not ready. If the dough sinks rapidly, it has already fermented too long. Punch it and make it up at once. Punch the dough by pressing it down by hand and folding it from side to side. After you have punched the dough, cover the pan with a cloth, and let the dough rest for the amount of time called for in the recipe. Danish pastry dough is produced by rolling layers of fat into the dough. Do not punch Danish pastry dough. Instead, after mixing the dough, roll in butter or shortening as shown in Figure 23-10 (page 23-32). Roll and fold the dough four times. Refrigerate the dough for about half an hour between each roll, or until it is loose enough to be pliable when rolled.

Makeup

Makeup procedures for yeast-raised dough depend on whether the dough is to be used for plain rolls, sweet rolls, or Danish pastry.

Plain rolls. Plain rolls may be made up in a number of different shapes. First, divide the dough as shown in Figure 23-11 (page 23-34). Then

make it up as cloverleaf rolls (Figure 23-12, page 23-35), frankfurter rolls (Figure 23-13, page 23-35), hamburger rolls (Figure 23-14, page 23-36), pan or cluster rolls (Figure 23-15, page 23-37), or Parkerhouse rolls (Figure 23-16, page 23-38).

Sweet rolls and Danish pastry. Sweet rolls and Danish pastry may be made up in a variety of shapes and may include many different types of fillings and toppings. First, prepare the dough for makeup as shown in Figure 23-17 (page 23-40). Then make the rolls up as round sweet rolls (Figure 23-18, page 23-41), spiral (cinnamon) rolls (Figure 23-19, page 23-42), folded dough rolls (Figure 23-20, page 23-44), or wedge roll-ups (Figure 23-21, page 23-46).

Add the room temperature, the flour temperature, and the friction factor. The friction factor varies from 10° F to 30° F. It depends on the stiffness of the dough, the speed of the mixer, and the mixing time. Use 20° F as the friction factor for your first dough. For other doughs, adjust the friction factor as described in a later step.

EXAMPLE:	*Room temperature*	*75° F.*
+	*Flour temperature*	*73° F.*
+	*Friction factor*	*20° F.*
	Total	*168° F.*

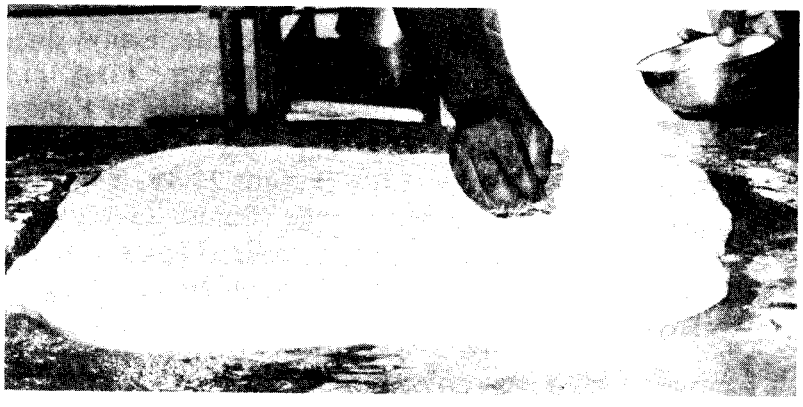
Subtract the total degrees above from 240° F. The difference is the proper water temperature.

EXAMPLE:	*(Constant)*	*240° F.*
-	*Total from first step*	*168° F.*
	Proper water temperature	*72° F.*

Adjust the friction factor for succeeding doughs. To do this, first measure the temperature of the dough when it comes out of the mixer. The desired temperature is 80° F. If the dough temperature is more than 80° F, add the difference to the original friction factor to get the new factor. If the dough temperature is less than 80° F, subtract the difference. Use the new factor to recompute the proper water temperature.

EXAMPLE:	*Actual dough temperature*	*83° F.*
-	*Desired dough temperature*	*80° F.*
	Friction factor adjustment	*3° F.*
	Original friction factor	*20° F.*
+	*Friction factor adjustment*	*3° F.*
	New friction factor	*23° F.*

Figure 23-9. Steps to follow to determine proper water temperature

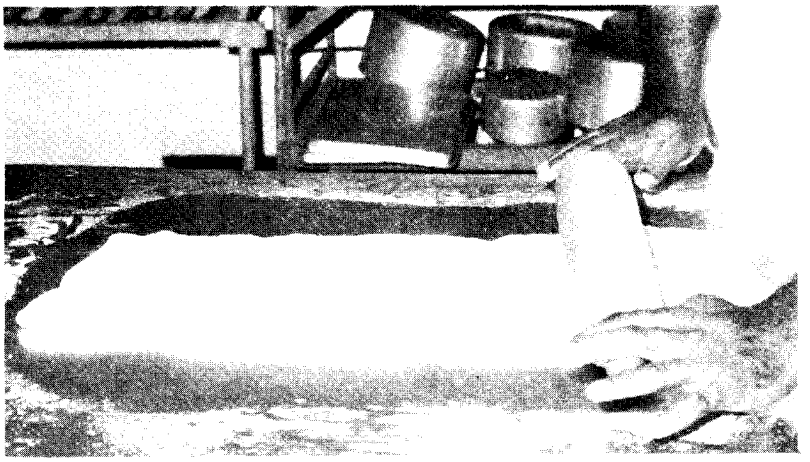


1. Roll dough to about 1/2 inch thickness. Then spot fat on two thirds of the surface.

2. Fold the one third without fat over the center third.

3. Fold the remaining one third over the other two thirds.

Figure 23-10. Preparation of Danish pastry dough



4. Roll the folded dough to 1/2 inch thickness.

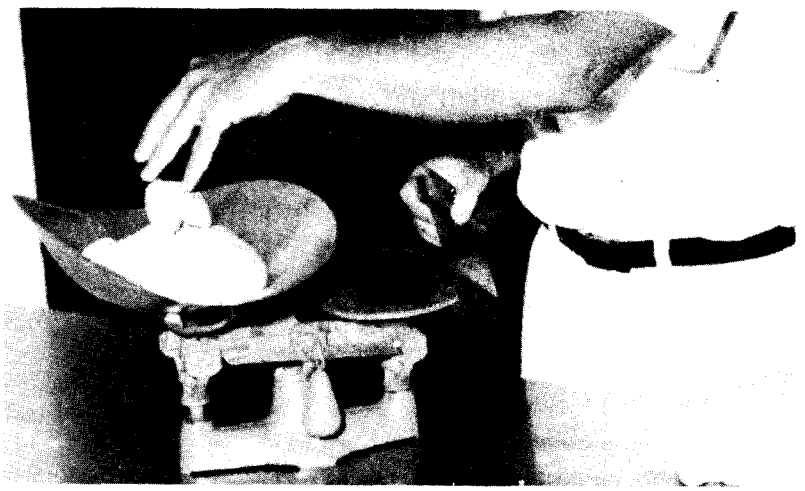
5. Repeat the folding procedures in steps 2 and 3. Then refrigerate the dough.

Proofing Procedures

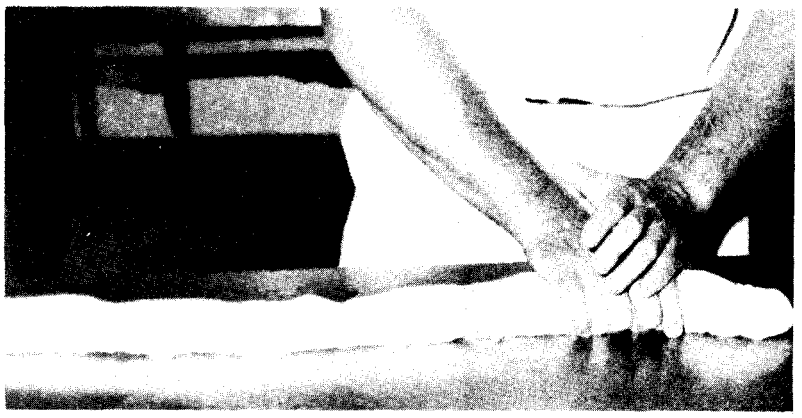
Proof panned rolls until they double in size. If you do not have a proofing cabinet or room, cover the panned items with a damp cloth to prevent crusting. Make sure the cloth does not touch the dough. The recipe will tell you how long and at what temperature the item should be proofed. However, you may have to adjust proofing time on the basis of other factors. Table 23-9 (page 23-47) shows what conditions require adjustments in proofing time. Sweet dough may be made up ahead of time and stored in the refrigerator. You may store made-up sweet dough for 24 hours at 40° F and for up to 60 hours at 32° F. When you are ready to use it, remove the dough from the refrigerator and proof the pieces until they double in size.

Baking and Finishing Procedures

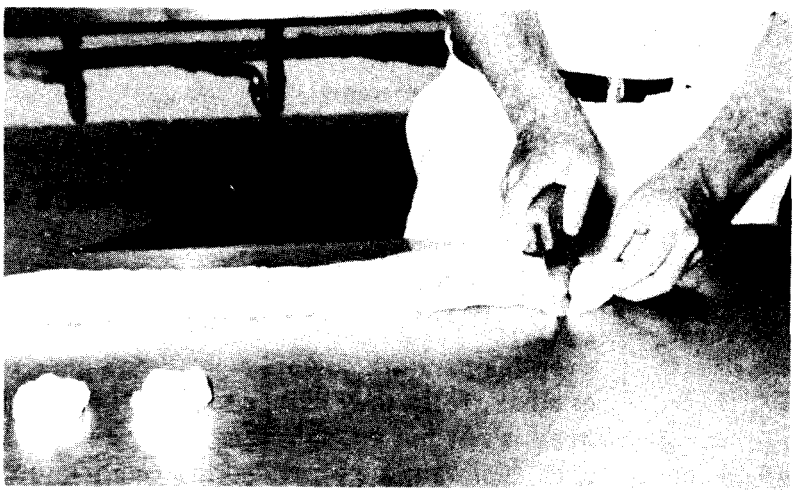
Bake the proofed items for the time and at the oven temperature specified in the recipe. If you overbake rolls, they will be tough or crusty. If the oven is not hot enough, they will be too pale or soft. Maintain a proper baking temperature for Danish pastry. If you bake it at too low a temperature, the rolled-in fat will melt and leak out of the layers. Finish rolls as directed in each recipe.



1. Scale the dough into 3 to 4 pound pieces.

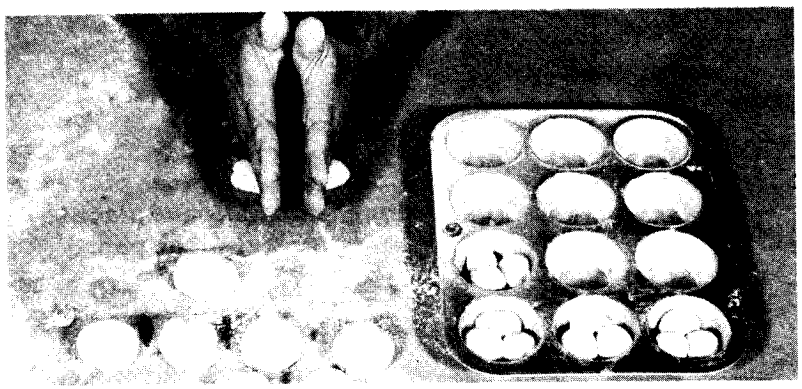


2. Shape the dough and cut it into long pieces of uniform thickness.

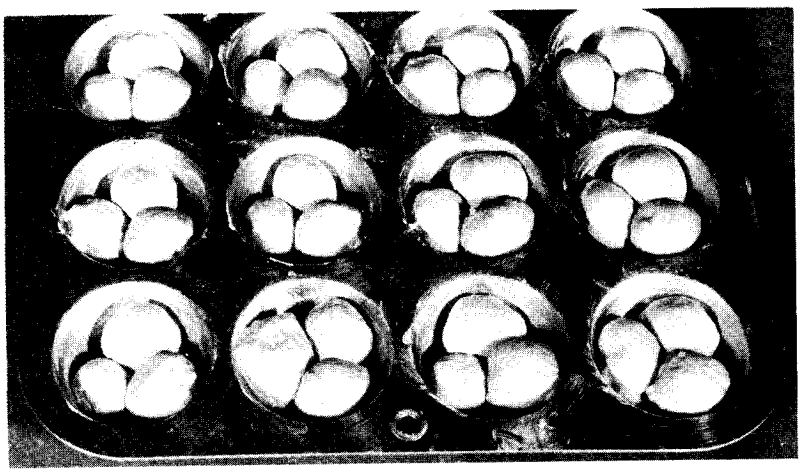


3. Cut the long pieces of dough into pieces of desired weight.

Figure 23-11. Preparation of dough for makeup of plain rolls

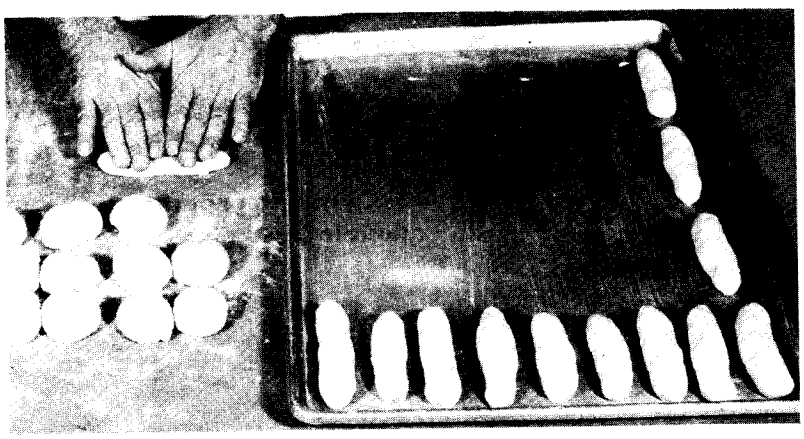


1. Roll rounded 1 1/2-ounce pieces of dough into oblongs. Cut each oblong piece into thirds. Place in greased muffin tins.



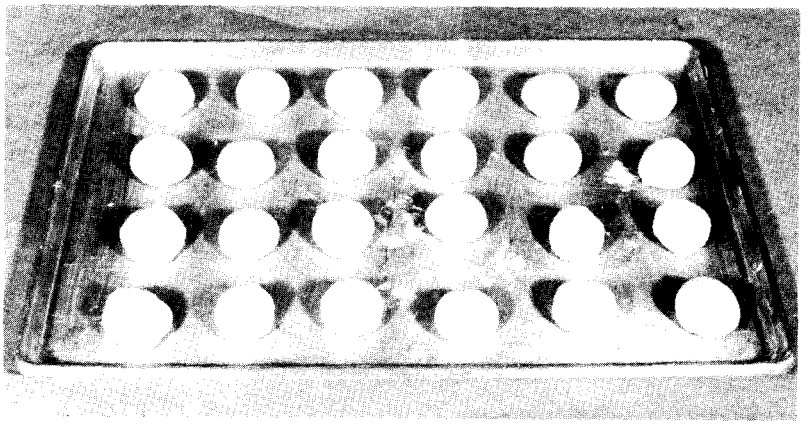
2. Allow rolls to proof until they double in size.

Figure 23-12. Makeup of cloverleaf rolls



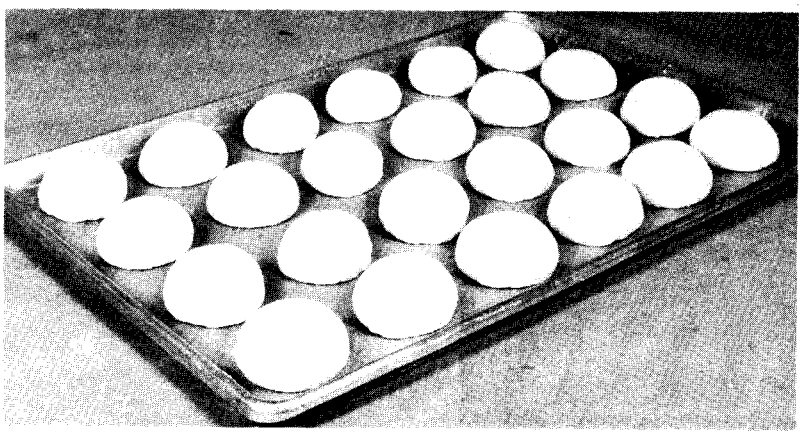
Start with 2-ounce pieces of dough that have been rounded and allowed to rest. Roll the pieces of dough into oblong rolls 5 to 6 inches long. Place them on a greased sheet pan.

Figure 23-13. Makeup of frankfurter rolls



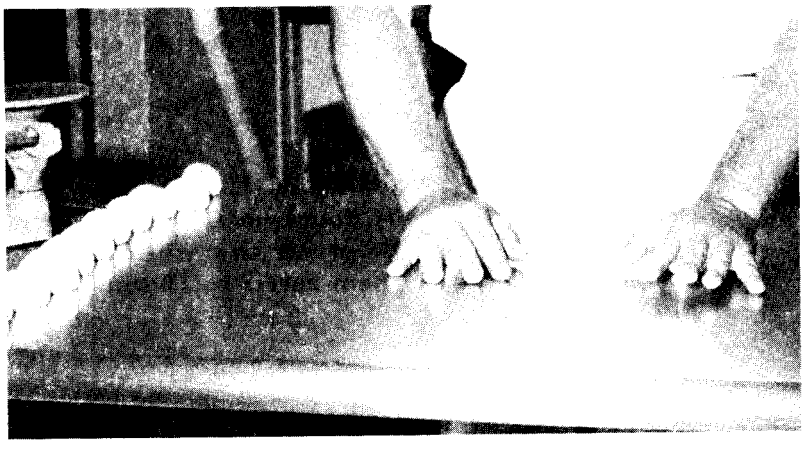
1. Shape 2-ounce pieces of dough into balls and place them on a greased sheet pan.

2. When the buns are half proofed, flatten them to 1/4 to 1/2 inch thickness.

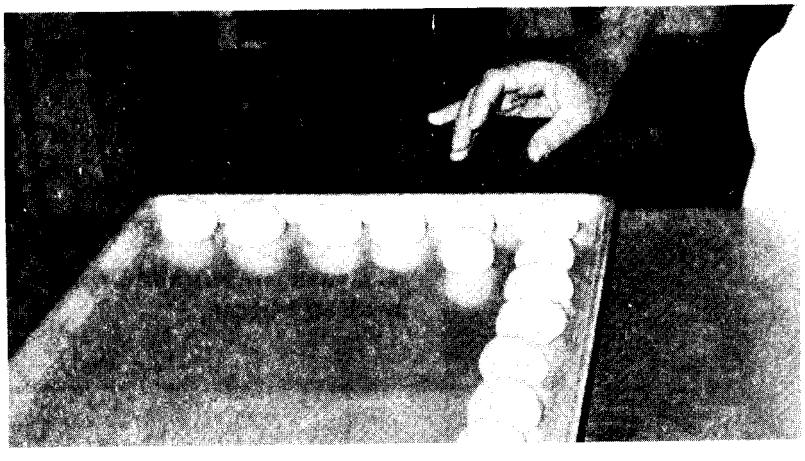


3. Continue proofing until buns double in size.

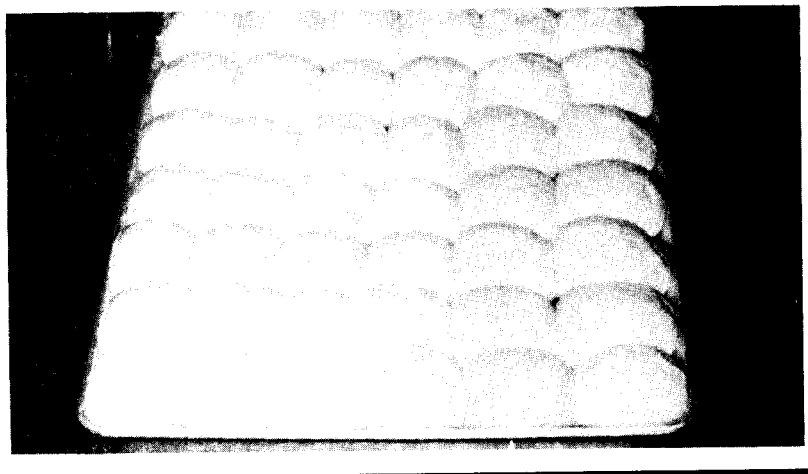
Figure 23-14. Preparation of hamburger rolls



1. Shape 1 1/2- to 2-ounce pieces of dough into balls by rolling with a circular motion on the worktable.

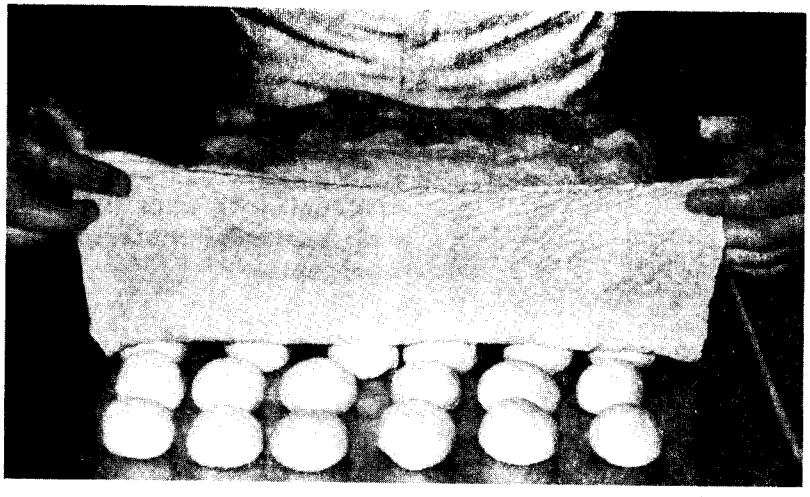


2. Place the dough balls on a greased sheet pan in rows of six by nine.



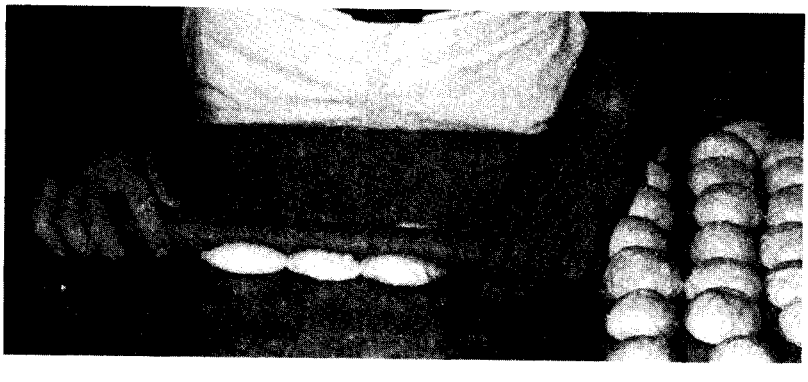
3. Brush the dough balls with butter or egg wash and proof until double in size.

Figure 23-15. Makeup of pan or cluster rolls



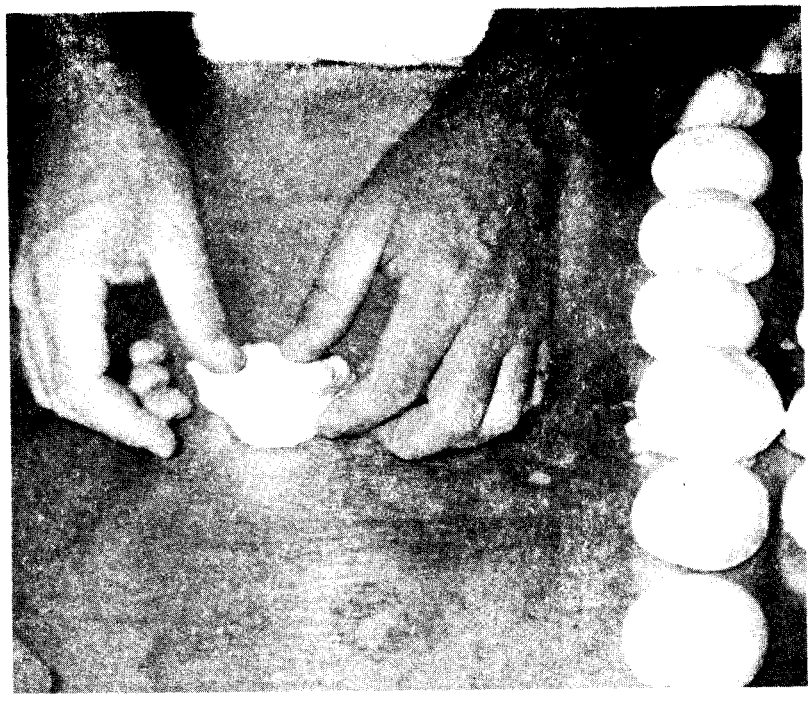
1. Shape 1 1/2- to 2-ounce pieces of dough into balls by rolling them on the worktable. Let them rest 5 to 10 minutes.

2. Brush the rounded rolls with melted butter.

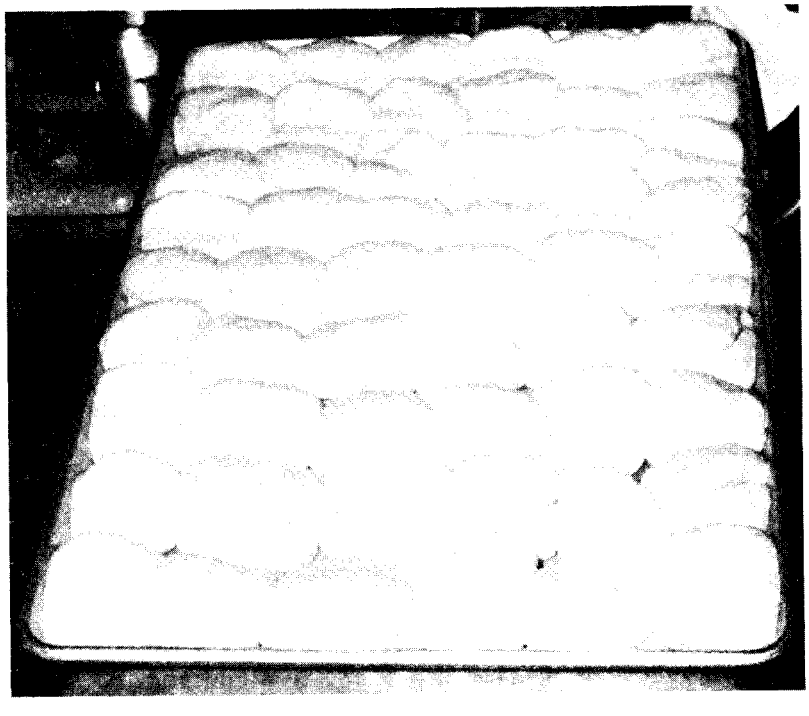


3. Press the center of the rolls with a small rolling pin, forming pieces about 3 inches long.

Figure 23-16. Preparation of Parkerhouse rolls

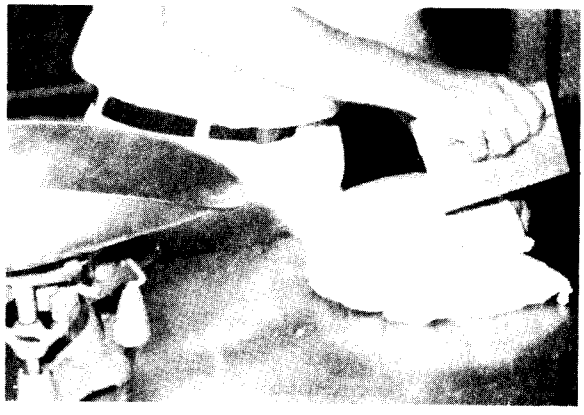


4. Fold the rolls, greased sides together, and press them down to hold shape.

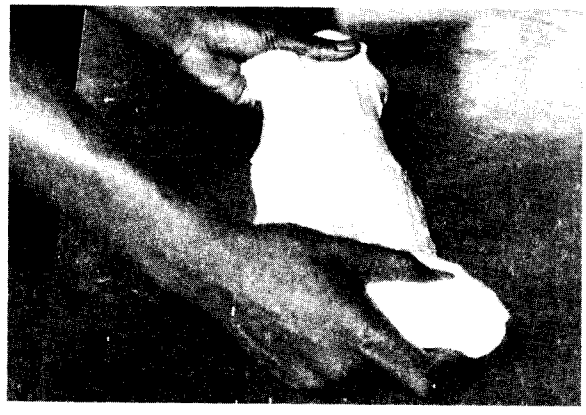


5. Allow rolls to proof until they double in size.

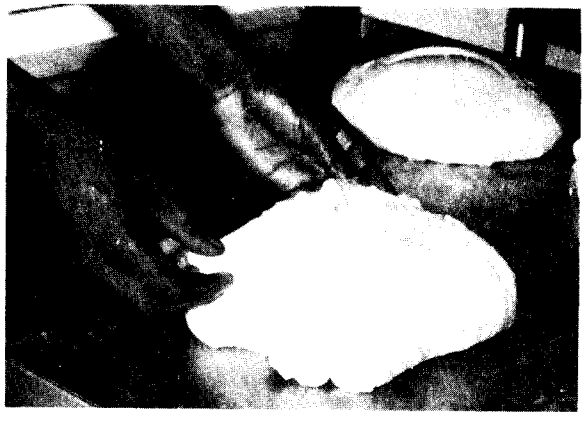
Figure 23-16. Preparation of Parkerhouse rolls (continued)



1. Scale dough (divide it into four pieces of equal size).



2. Stretch the dough.



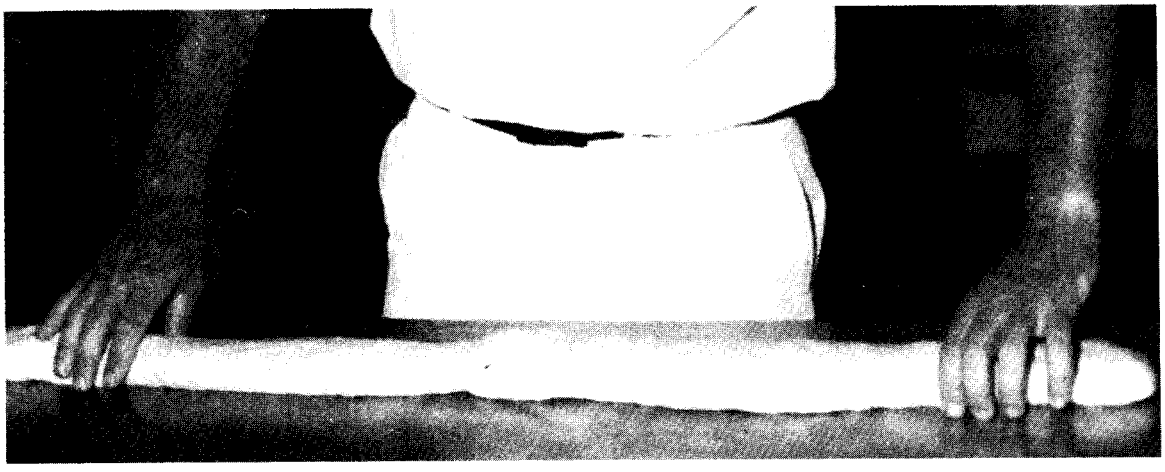
3. Bring the ends together and overlap them slightly.

4. Flatten the folded dough.

5. Fold the dough from front to back.

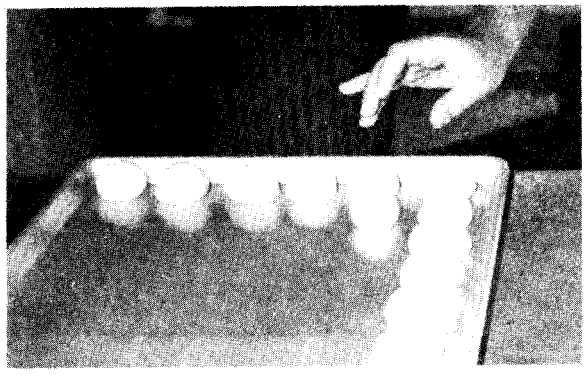
6. Seal the dough in a rectangular shape.

Figure 23-17. Preparation of sweet-roll dough for makeup

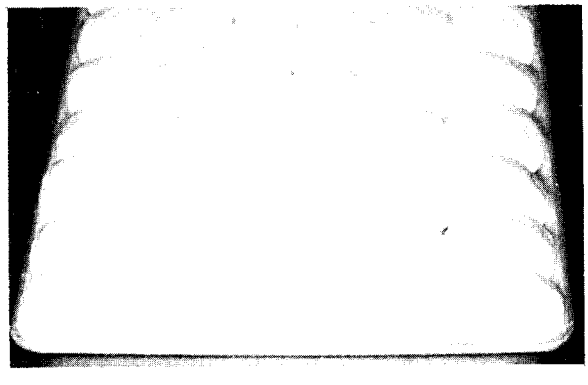


1. Roll a 4-pound 12-ounce piece of dough into a long cylinder of uniform thickness.

2. Slice the dough into fifty 1 1/2-ounce pieces, and shape the pieces into balls by rolling them with a circular motion.

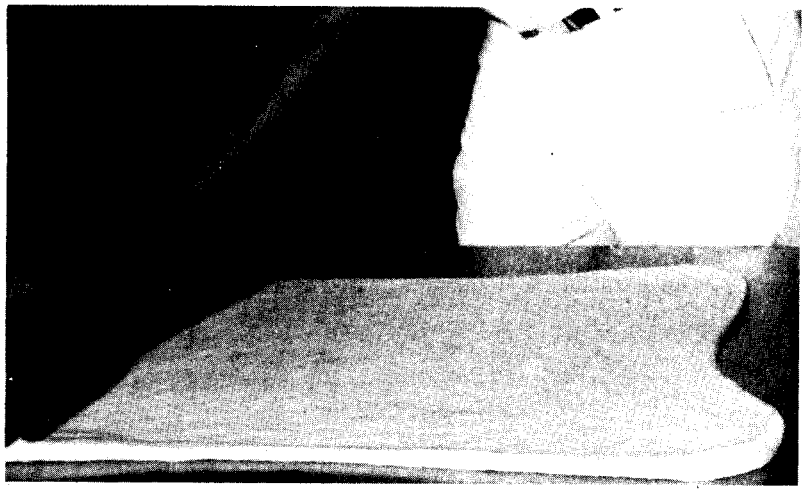


3. Place the dough balls on a greased sheet pan in rows of six by nine.

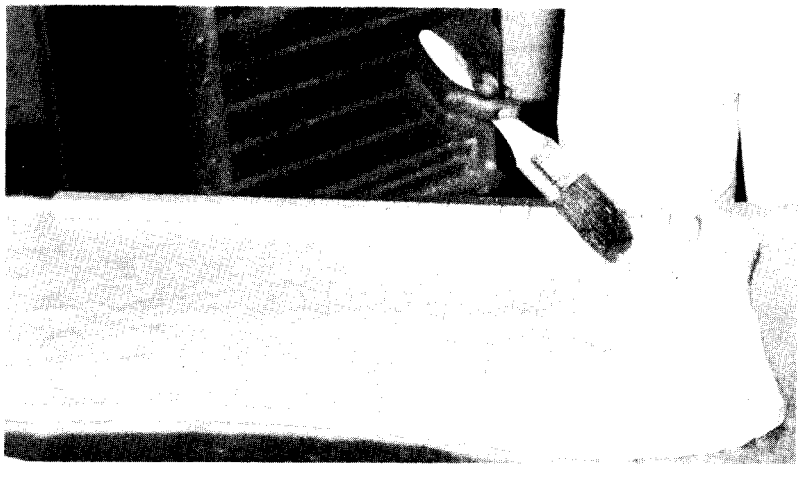


4. Proof until the dough balls double in size.

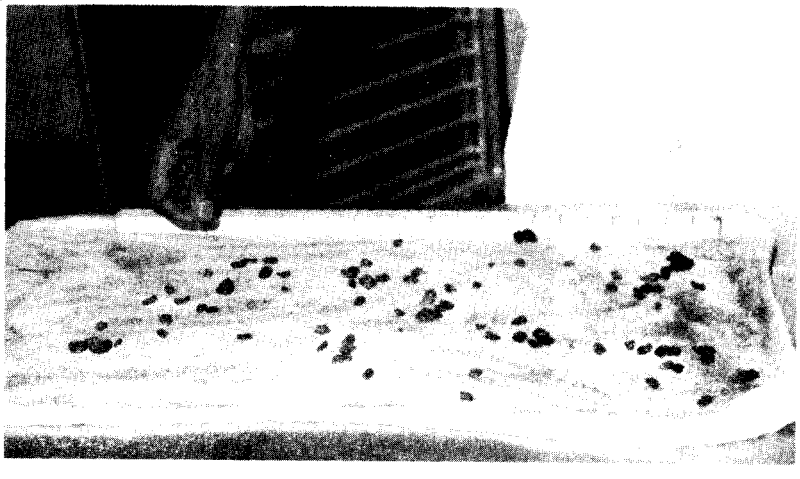
Figure 23-18. Makeup of round sweet rolls



1. Roll a 4-pound piece of dough into a rectangular sheet about 1/4 inch, 14 inches wide, and 40 inches long.



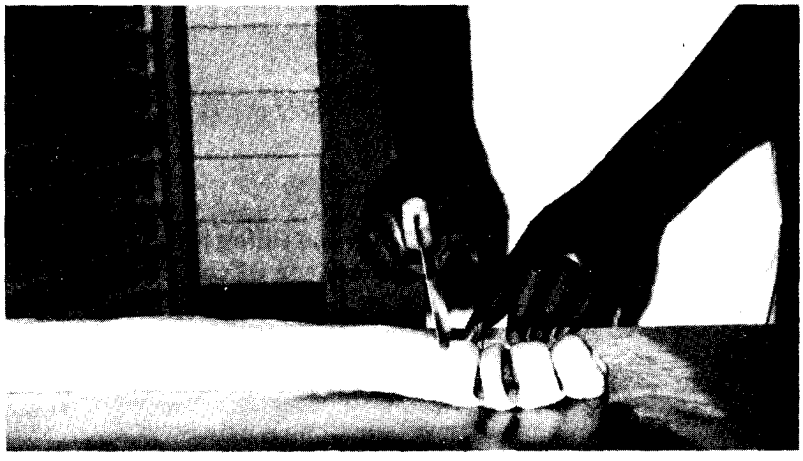
2. Brush the dough with melted butter.



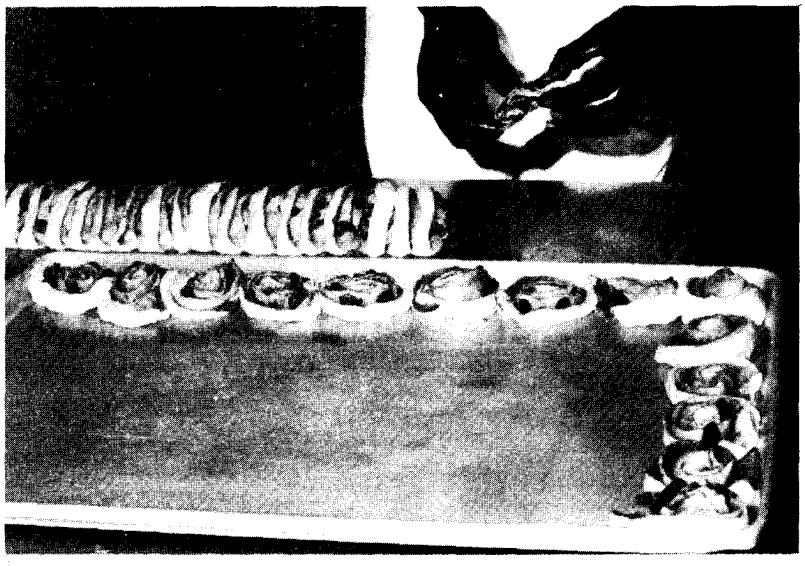
3. Sprinkle the dough with raisins and then with cinnamon and sugar.

Figure 23-19. Preparation of spiral (cinnamon) rolls

4. Roll the dough to make a long, slender roll.

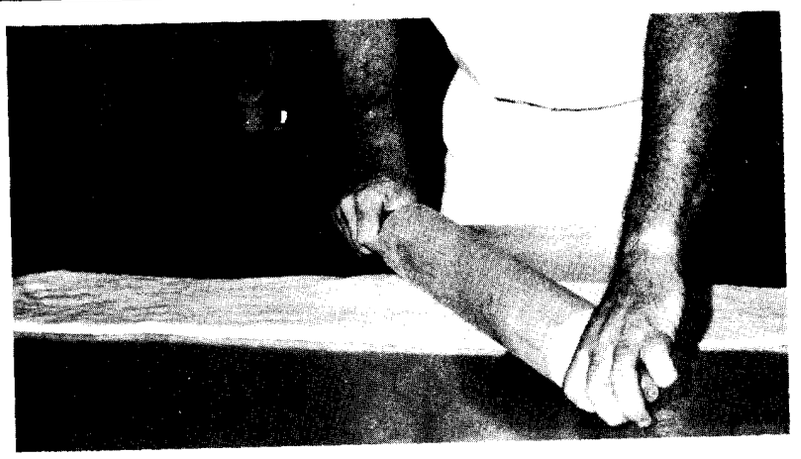


5. Cut the roll into 54 uniform pieces about 1 inch wide. Roll may be cut by hand or with a squirrel cage cutter.

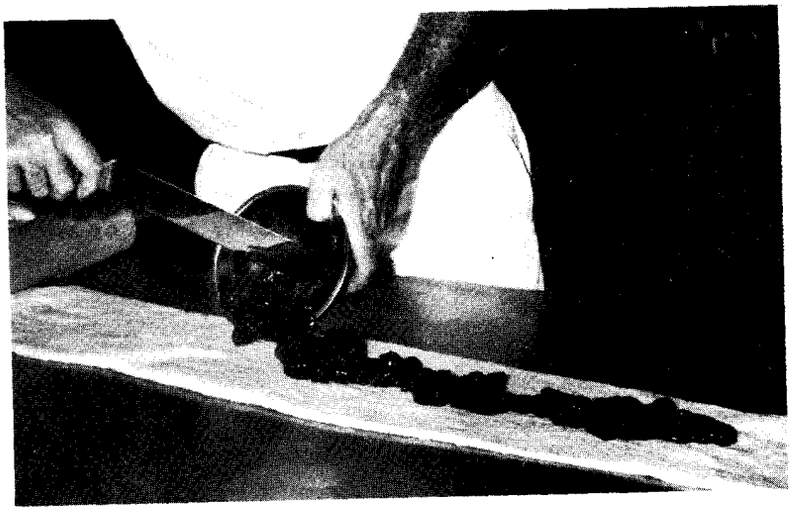


6. Place cut side down on a greased sheet pan in rows of six by nine. Proof until rolls double in size.

Figure 23-19. Preparation of spiral (cinnamon) rolls (continued)



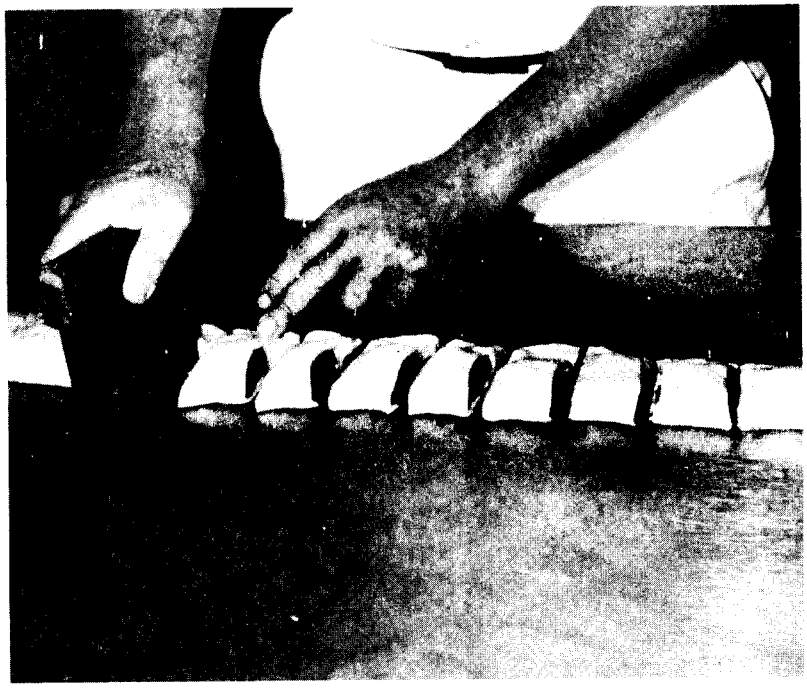
1. Roll a 2-pound 6-ounce piece of dough into a rectanglar sheet about 30 inches long by 7 inches wide.



2. Spread filling lengthwise down the center of the dough.

3. Fold the dough over once lengthwise, and seal along the edge by pressing it firmly.

Figure 23-20. Makeup of folded-dough rolls



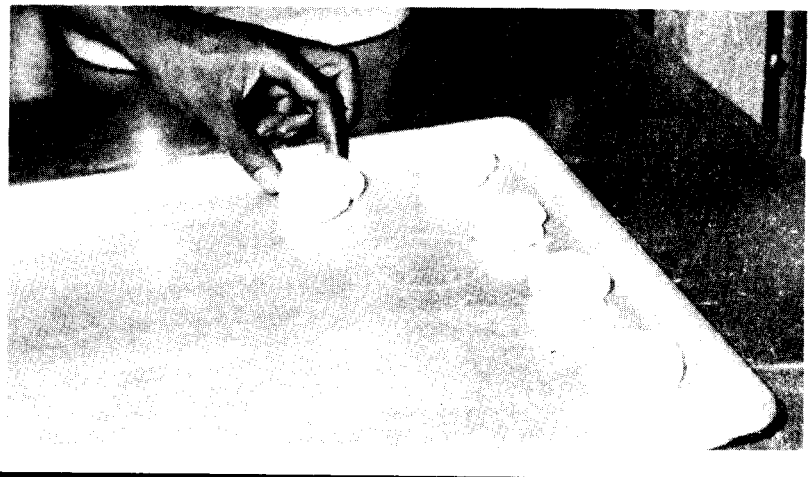
4. Cut the folded dough into pieces 2 inches wide.

5. Make three cuts, 3/4 inch in depth, on the sealed edge of the piece. Spread the claws slightly, place the pieces on a greased sheet pan in rows of four by six, and brush them with egg wash. Proof until they double in size.

Figure 23-20. Makeup of folded-dough rolls (continued)

1. Roll dough to 1/4 inch thickness. Cut the dough lengthwise into strips about 5 inches wide. Then cut the strips into triangles about 3 inches wide at the base.

2. Brush the dough with melted butter. Then roll the triangles from the wide end toward the point.



3. Place the rolls on a sheet pan with the point of the triangle on the underside.

Figure 23-21. Makeup of wedge roll-ups

Faults

Table 23-10 (page 23-47) lists faults in rolls, their causes, and corrections.

Table 23-9. Proofing time adjustment

CONDITION	ADJUST
Too much sugar. Too little yeast. Old yeast. Dough not warm enough.	Increase proofing time.
Too much yeast. Dough to warm.	Decrease proofing time.

Table 23-10. Faults in rolls, causes, and corrections

FAULT	CAUSES	REMARKS
Lack of volume	Too much salt	Salt may slow or halt yeast activity.
	Dough too old, too young, or too stiff.	
	Dough underproofed.	Proof until about double in size.
	Oven temperature too high.	
Too much volume	Not enough salt.	
	Dough overproofed.	
	Oven too cool.	
Pale crust	Not enough sugar, salt, or milk.	
	Dough hot and overfermented.	
	Dough old.	
	Dough underproofed.	
	Oven too cool.	
Dark crust	Too much salt, sugar, or milk.	
	Dough too young.	
	Dough overproofed.	
	Flash heat in oven.	
Crust blistered	Dough too slack.	Follow formula carefully.
	Dough too young.	
	Dough overproofed.	
	Oven too hot or too cool, or flash heat in oven.	
Shelling of top crust	Dough too young, too old, or too stiff.	
	Dough underproofed.	

Table 23-10. Faults in rolls, causes, and corrections (continued)

FAULT	CAUSES	REMARKS
	Not enough humidity in proofing cabinet. Flash heat in oven.	Flash heat will frequently cause rolls to bake on top too quickly and loosen crust.
Crust tough and brittle	Not enough shortening, salt, or sugar. Dough old. Dough overproofed. Oven too hot, or flash heat in oven.	
Crust rubbery	Too much milk or salt, or too little shortening. Dough young. Too much steam in oven.	
Grain open or irregular	Dough underproofed or overproofed. Not enough fermentation. Oven too cool.	
Poor texture	Too much salt, or hard water used. Not enough sugar, shortening, or milk. Dough too stiff, hot, young, or old. Dough underproofed or overproofed. Too much dusting flour.	Sometimes the product forms a crust during intermediate proofing. This causes poor texture.
Acidic taste	Not enough salt. Dough too old or too hot.	
Flat taste	Not enough salt or sugar. Off-flavored ingredients or alkaline water used. Dough underfermented. Rolls underbaked or overbaked.	

CHAPTER 24

BEVERAGES

GENERAL

Beverages add enjoyment to the meal and provide liquids that help regulate the bodily processes. Coffee and tea are of little value nutritionally, but they are stimulants which temporarily remove the feeling of fatigue. Hot cocoa has nutritional value and is also stimulating. Chilled fruit drinks, milk drinks, and eggnog are refreshing and nutritious beverages. Preparing a good beverage demands as much care as preparing a meal. Beverage recipes can be found in TM 10-412.

COFFEE

Coffee can be prepared in an urn, a coffeemaker, a pot, or a kettle. Instant coffee can be used to make coffee in quantity or by the cup. Some general rules for brewing coffee are given in Figure 24-1 (page 24-1).

When making iced coffee, use only half as much water as you do for hot coffee. Cool the hot brew with cold water and serve in glasses containing ice. Always pour the hot brew into the cold water to prevent clouding.

Brewed coffee should have the following qualities.

- Clear and sparkling appearance.
- Delicious flavor.
- Good aroma.
- No bitterness.
- Little or no sediment.
- Proper temperature (hot or iced).

For special occasions or for variety, you can top both hot and cold coffee with a tablespoon of whipped cream. You can also top iced coffee with ice cream. Additional guidelines for brewing coffee can be found in TM 10-412 recipe card No C-G-1.

- **Use freshly ground coffee.**
- **Follow the manufacturer's instructions for the preparation methods best suited to the equipment in your facility.**
- **Always measure coffee and water accurately.**
- **Make only the amount needed for a meal. Use 6 1/4 gallons of coffee to make 100 8-ounce servings.**
- **Coffee should be ready not more than 15 minutes before serving.**
- **Hold the brew as near 185° F as possible for not more than one hour, keeping it covered at all times.**
- **Do not reheat coffee.**
- **Remove coffee grounds as soon as brewing is complete. Do not reuse them.**
- **Keep coffee-making equipment clean, as coffee oils cling to the equipment and become rancid upon contact with oxygen in the air. Clean equipment according to instructions in the manufacturer's guide.**

Figure 24-1. General rules for coffee

TEA

Store tea bags or leaves in a closed container to keep out foreign odors. Also, protect the tea from high temperatures. Excessive heat destroys the oils and causes the tea to have a flat taste. Avoid rough handling as this will crush the tea leaves. Tea can be made in an urn or a kettle or with individual tea bags or instant tea. Observe the same quality standards for tea as for coffee. Some general rules for steeping tea are given in Figure 24-2 (page 24-2).

Instant tea may be procured in both packages and jars. Use clean, cold water to make instant tea. Be sure to follow the manufacturer's directions for preparation and dispensing of the tea and cleaning of the tea dispenser.

COCOA

Store cocoa in a clean, cool, dark place--heat and light can cause it to become rancid. An airtight container will slow the rancidity rate and prevent the cocoa from picking up foreign odors. Combine and cook ingredients as stated in the recipe to avoid a starchy flavor and settling of undissolved cocoa. To prevent film from forming, prepare the cocoa close to serving time in a narrow-topped container. Shake it during serving so that air bubbles form on the surface. Properly prepared cocoa should be prepared according to the general rules in Figure 24-3 (page 24-2).

For variety, top each serving of hot cocoa with a marshmallow or whipped cream.

ICED FRUIT DRINKS

Iced fruit drinks are usually served during the summer months. Iced fruit drinks include lemonade, orangeade, grapeade, limeade, fruit punch, and variations of fruit punch.

Make lemonade, orangeade, grapeade, and limeade from one specific fruit juice (frozen, canned, or fresh). Make fruit punches from two or more different fruit juices. For variation, a tea base and slices or sections of fresh fruits can be added. Imitation fruit-flavor drinks are available in numerous flavors. When preparing imitation fruit-flavored drinks, be sure to use clean, cold water and follow the package directions. General instructions for preparing iced fruit drinks are given in Figure 24-4 (page 24-2).

Iced fruit drinks may be garnished with green or red maraschino cherries, banana slices, strips of pineapple, raspberries or strawberries, sprigs of mint, and melon balls.

- **Use freshly boiled water.**
- **Measure tea and water accurately, and steep them about five minutes.**
- **Make tea close to serving time and keep it covered.**
- **If a cloth bag is used to hold the tea leaves, make sure that after the bag is tied, it is large enough to hold three times the amount used. The extra space is needed for the leaves to expand and for the water to circulate freely.**

Figure 24-2. General rules for tea

- **Have no undissolved cocoa in the bottom of the container.**
- **Be free of top film.**
- **Be free of starchy taste.**
- **Be the proper temperature.**

Figure 24-3. General rules for cocoa

- **Measure all ingredients accurately.**
- **When using fresh juices, strain the juices to remove pulp and seeds.**
- **When using slices or sections of fresh fruit in punches, wash the fruit and remove all seeds.**
- **Prepare drinks far enough ahead of serving time to allow for chilling. Use ice.**

Figure 24-4. General rules for iced fruit drinks

CARBONATED BEVERAGES

Carbonated beverages are refreshing, highly acceptable, and available in many flavors through the TISA. Use ice-making machines along with carbonated-beverage dispensers. The dispensers must be kept clean and sanitary. The dispensers must contain a backflow prevention device to minimize the potential for carbon dioxide and other ingredients to backflow into copper lines, potentially causing an acute illness.

EGGNOG

Eggnog is available for serving during the holiday season. The eggs, milk, and sugar used in preparing eggnog make it highly nutritious. Requisition only enough for one meal, and refrigerate it until it is used. Cartons opened during the meal should be discarded at the end of the meal.

CHAPTER 25

DAIRY PRODUCTS

GENERAL

Dairy products include eggs, milk, and cheese. The various types of products (fresh, dehydrated, and so forth) are discussed separately.

EGGS

Eggs are an important food, high in nutritional value. They can be used in a variety of ways. Eggs add color, richness, and flavor to many other foods in which they are used. The Armed Forces procure fresh shell eggs, dehydrated egg mix, and frozen eggs. Fresh eggs must be stored in a refrigerator and separated from foods which have strong aromas. Frozen eggs must be kept frozen, while powdered egg solids should be kept in a cool, dry place, and used before their expiration date. Eggs are a favorite breakfast item and can be prepared several ways. They can also be used as follows:

- Lighten batters and doughs.
- Thicken gravies, soups, sauces, fillings, and custards.
- Act as a binding agent for meat loaves, coquettes, muffins, cookies, and cakes.
- Garnish salads, cold meats, vegetables and other foods.
- Act as a clarifier for clear soups and other foods.
- Coat chops, chicken, and other foods for frying.

Shell Egg Handling

Procedures for handling shell eggs are described below.

Remove eggs from the refrigerator one hour before use to allow them to warm up. This ensures more uniform cooking, especially when the eggs are fried or baked; keeps shells from cracking when eggs are hard-cooked; and increases the volume of stiffly beaten egg whites.

When cooking two or more eggs together or combining them with other ingredients, break each egg separately in a small dish before combining them. This allows you to discard eggs with a bad odor or poor appearance without spoiling the other eggs or ingredients.

Beat eggs thoroughly to lighten doughs or batters, and beat eggs lightly to thicken, bind, or coat foods.

Add ingredients gradually to stiffly beaten egg whites.

Hot mixtures, such as hot milk or hot sauce, should be added slowly to the slightly beaten eggs to prevent the eggs from curdling.

Fry eggs at low to moderate temperatures to prevent protein from becoming rubbery.

Dehydrated Egg Mix

Dehydrated egg mix can be used in almost the same manner as fresh eggs (for example, scrambled or omelets, griddle cakes, custards, or any type of cooked dessert that calls for fresh eggs). Do not reconstitute more than 25 portions of dehydrated egg mix by the hand method at one time. If you are using a mechanical mixer, you can reconstitute up to 100 servings at the same time. However, do not cook more than 25 servings at a time. Use reconstituted egg mix within one hour or discard it. Dehydrated eggs can be reconstituted by the hand method or the mechanical mixer method.

Hand method. Reconstitute egg mix by the hand method as follows:

- Remove all lumps.
- Pour one-third of the liquid into the egg powder and blend them together.
- Add remaining liquid gradually. Beat until smooth.

Mechanical mixer method. Reconstitute egg mix using a mechanical mixer as follows:

- Pour dehydrated eggs into mixing machine.
- Pour one-third of the liquid into the egg powder. Mix on low speed for one minute, on second speed for two minutes, and on high speed for 30 seconds or long enough to remove the remaining lumps.
- Turn mixer to second speed, add remaining water, and beat until the egg paste and water are thoroughly combined.

MILK AND MILK PRODUCTS

Milk products are essential elements of good nutrition. Because they spoil rapidly and are odor-absorbant, they require special handling.

Fresh Milk and Milk Products

Fresh whole and/or 2-percent milk, cheese, butter, and margarine are served at almost all meals. Since these products absorb odors easily, they should be stored separately from foods that produce strong odors. They should not be frozen as freezing causes some product degradation.

Dehydrated Milk and Milk Products

The two primary dehydrated dairy products are milk and cheese. These products can be used the same as fresh products when reconstituted. For best results, reconstitute according to the manufacturer's guidance or as listed under the General Information Section of TM 10-412.

CHAPTER 26

BREAKFAST MENUS AND FOODS

GENERAL

Breakfast in the Army dining facility usually consists of fruit or fruit juice; cereal; ham, bacon, sausage, or creamed beef; eggs, French toast, or griddle cakes; toast, hot biscuits, butter, and jam or jelly; and tea, coffee, or milk. Sweet rolls, coffee cake, or doughnuts are sometimes included in the master menu. Fitness concerns require many variations. See Chapter 10 when planning menus.

A LA CARTE BREAKFAST

The master menu gives the a la carte breakfast menu for each breakfast period during the month. Foods such as chilled fruit or juice, hot cereal, meat, potatoes, and special hot breads are listed in the master menu. However, ready-to-eat cereals, fresh milk, eggs, bread, butter, jam and jelly, and coffee are issued daily as part of the a la carte menu.

CONTINENTAL BREAKFAST

The continental breakfast is a self-service type meal. Foods offered are fruit juice, prepared cereals, sweet rolls or doughnuts, toast, milk, and coffee. You can serve the continental breakfast in addition to the regular breakfast meal. You may not serve it in place of the regular breakfast. One of the advantages of offering a continental breakfast is that the serving period may be extended without disrupting the work schedule for the noon meal. Fruits and items such as boiled eggs could also be offered with the continental breakfast.

BREAKFAST FITNESS BAR

Resources permitting, each dining facility offers a breakfast fitness bar as an alternative to the traditional breakfast menu. The breakfast fitness bar is fully described in Chapter 10.

FRUITS AND FRUIT JUICES

Fruits and fruit juices have an important place in the breakfast meal. They are discussed below.

Fruits

Fresh fruits are frequently listed in the master menu. Occasionally you serve canned fruits, such as grapefruit and apricots. Prepare them by chilling them and placing them in serving dishes. Other fruits served include stewed dried prunes and dehydrated applesauce. Cook prunes according to the directions on the container. Serve them hot or cold. Prepare dehydrated applesauce as follows:

- Place dehydrated applesauce in a bowl and stir to break up any lumps.
- Add half of the required water and stir until smooth.
- Stir in the remaining water. Let reconstituted applesauce set for at least 10 minutes before serving.

Fruit Juices

A variety of fruit juices are served in the dining facility. Chill canned juices overnight, and open the cans as needed. Mix frozen juices and instant juices according to the manufacturer's directions. Chill and serve them from juice dispensers.

CEREALS

Assorted dry cereals are served more often in the dining facility than hot, cooked cereals. Dry

cereals require no preparation and offer the soldier a wide variety from which to choose.

Dry Cereals

Dry cereals are made from barley, corn, oats, rice, wheat, or combinations of these grains. The grains have been altered (puffed, toasted, flaked, or shredded) during processing so that their flavor, texture, and appearance are more appealing. Some have sugar, syrup, molasses, or honey added. You can place an assortment of dry cereals in a cereal dispenser for self-service.

Hot, Cooked Cereals

The hot, cooked cereals served in the dining facility include farina, whole wheat, rolled oats, and hominy grits. These cereals take a relatively short time to prepare. Prepare them in small batches, and serve them hot. TM 10-412 gives recipes for preparing hot, cooked breakfast cereals (regular and quick-cooking types).

MEATS

Meats served in the dining facility include bacon, ham, and sausage. They are discussed below.

Bacon

The FSS may requisition either chilled or frozen bacon slices or slab bacon for the dining facility. Bacon may be baked, grilled, or fried. Grill bacon over low heat, and turn occasionally. Pour or scrape off the fat as it accumulates. To bake bacon, arrange the slices on a sheet pan with the fat edge of each slice overlapping the lean edge of the next slice. Place the bacon on the top shelf of the oven. Bake for about 15 minutes at a moderate temperature. Drain the fat from the bacon. Do not turn.

Ham

The ham served for breakfast is usually canned. You must slice it and then bake it or grill it.

Sausage

Sausage is available in preformed patties, link form, or bulk. It is also prepared by grilling of baking. Ensure that sausage is cooked until it has lost all of its pink tinge on the inside.

EGGS

As a breakfast food, eggs may be soft-cooked, hard-cooked, scrambled, poached, fried, baked (shirred), or made into an omelet. Recipes for all of these methods are in TM 10-412. You can make omelets plain or with bacon, ham, cheese, or mushrooms. High temperatures and overcooking toughen the protein in the eggs, so you should cook them at 325^{0}F. Serve them immediately after cooking. Do not let cooked eggs stand for any length of time as they will harden and lose their flavor.

FRENCH TOAST AND GRIDDLE CAKES

TM 10-412 contains recipes for French toast and griddle cakes. Cook French toast on a well-greased griddle at 375° F. Cook griddle cakes on a lightly greased griddle at 375° F. When air bubbles form on the top of the griddle cake, the bottom should be evenly browned. If the underside is unevenly cooked and has white and brown spots, the griddle is too heavily greased or is too hot. If the underside is a pale tan color, the griddle is not hot enough. Turn griddle cakes only once. Serve both French toast and griddle cakes hot from the griddle. Have melted butter and hot syrup available. Assorted condiments such as cinnamon, sugar, jams, jellies, and spiced applesauce are desirable. Syrup is available in various flavors and is issued in cans, bottles, or individual containers.

TOAST, BUTTER, JAMS, AND JELLIES

Have toast available at every breakfast meal whether or not you are serving other hot breads. Make toast on the serving line as needed. Some diners may want their hot toast with butter. Others may prefer dry toast. Place pats of butter in the

dispenser on the serving line. Provide an assortment of jams and jellies on the serving line. When self-service toasters are provided for the diners' use, ensure that small-plate dispensers are located near the toaster.

BEVERAGES

Make coffee, tea, and milk self-serve items. Place a supply of cups near the dispensers containing fresh, hot coffee and hot water for tea. Put tea bags beside the hot-water dispenser and cream or cream substitute and sugar either beside the hot-drink dispensers or on the tables. Place glasses next to the milk and water cooler.

CHAPTER 27

SHORT-ORDER MEALS, SANDWICHES, AND BOX LUNCHES

GENERAL

Short-order meals, sandwiches, and box lunches play an integral role in feeding soldiers worldwide. The short-order meal has gained in popularity throughout the Army. Sandwiches may be a component of the short-order meal and of box lunches. Box lunches are primarily used to feed soldiers who must be away from the dining facility during the scheduled meal period. All are discussed in this chapter.

SHORT-ORDER MEALS

A short-order meal consists of any combination of soup, sandwiches, potato chips or french-fried potatoes, salads and dressings, desserts, and beverages. Many diners prefer a short-order meal rather than a complete one. Short-order meals are served with the regular lunch or dinner meal to give the soldier a choice of either a fast food or a full meal.

Short-Order Menu

The standard short-order menu is included in the master menu. You are not limited to items listed on the short-order menu for the given day. You may use your initiative and the supplies available in the kitchen to vary the menu. You may add leftover food items such as beef, pork, ham, turkey, and chicken to the short-order menu. To help the diner select menu items, post the short-order menu at the entrance to the dining facility or serving line where it can be seen.

Preparation and Service

Prepare grilled items, such as hamburgers or frankfurters, to order and not in advance. Grilled (and cold) sandwich items should be prepared at a rate that is about the same as the customer flow. Make sure lettuce, tomatoes, onions, pickles, and condiments are available. Emphasize self-service for the short-order meal. Make ready-to-serve items available on the serving line. Since preparing and serving short-order items require speed and dexterity, food service personnel may need training. Never speed up service by making up plates of food and placing them on the serving line in advance.

SANDWICHES

You may serve sandwiches in the dining facility as part of the short-order menu, to troops in the field, or to small detachments of personnel on special assignments away from regular dining facilities (usually in box lunches). Make sandwiches that are appetizing as well as nutritious. TM 10-412 contains recipes for sandwich fillings made from cheese, eggs, fish, meat, and poultry. Sandwiches fall into three groups: open-face sandwiches, hot sandwiches, and cold sandwiches. You can serve open-face sandwiches and hot sandwiches only where cooking facilities are available. Use cold sandwiches in box lunches.

Open-Faced Sandwiches

Place cooked, sliced, or ground meat on bread or a bun. When required, ladle a hot gravy or sauce over the meat and bread.

Hot Sandwiches

Sandwiches intended to be eaten hot must be prepared either from hot ingredients (140° F (60° C) or above) and held at that temperature, or from chilled ingredients that are then heated rapidly to 140^{0}F (60^{0}C) prior to serving. Place sliced cheese, meat, or other filling between slices of bread or on

buns. Butter the bread on the outside, and then toast it on a griddle.

Cold Sandwiches

Sandwiches intended to be eaten cold must be prepared using chilled ingredients. (Exceptions are allowed for certain fillings and dressings which may be raised to a product temperature of 50^0F to 60^0F (10° C to 15° C) to allow spreading Sandwiches with these fillings and dressings must then be rapidly chilled to 45° F (9° C) or below until served. Place sliced cheese, poultry, meat, or some type of filling between slices of bread or on buns.

Sandwich Classifications

Sandwiches are considered potentially hazardous foods because of the nature of their fillings and the potential for contamination during preparation. Sandwiches may be divided into two broad classifications: made-to-order and preprepared. Made-to-order sandwiches are those prepared for an individual customer for immediate consumption. All sandwiches not made to order are considered preprepared sandwiches. Remember the following:

- Made-to-order sandwiches cannot be held as leftovers and must be discarded as food waste within three hours of preparation.
- Preprepared sandwiches must be individually wrapped.
- All preprepared sandwiches should be individually labeled with the production date and time using a 24-hour system.
- Leftovers shall not be used in preparation of preprepared sandwiches.
- Condiments should not be in direct contact with the sandwich ingredients.
- Sandwiches must not be reworked, rewrapped, remarked, relabeled, or otherwise treated to extend their shelf life.
- Additional guidance on preprepared sandwiches is in TB MED 530, paragraph 2-21.

BOX LUNCHES

SB 10-540 contains information on preparing box lunches. When you are preparing 10 or more sandwiches, use an assembly-line technique to reduce preparation time and produce uniform quality in the finished product. Sliced bread dries out quickly. Therefore, do not make more than 10 sandwiches at a time. Do not make sandwich fillings for box lunches from foods mixed or spread with salad dressing, ground meat, chopped or sliced eggs, seafood, or any item that is potentially hazardous. Filling for sandwiches in box lunches is limited to sliced, cooked, or preserved meats and poultry; cheeses; jams or jellies; and peanut butter.

CHAPTER 28

SPECIALTY MEALS

GENERAL

Specialty meals provide the FSS and contractor with an opportunity to offer diners a change from everyday menus. They may be enhanced with decor items that support the selected theme.

These meals provide an excellent opportunity to share in the observance of numerous ethnic celebrations such as Afro-American, Asian-American, Hispanic-American, Native American, and others. They are also well-suited to mark observance of national holidays such as: Martin Luther King Jr. Day, Washington's Birthday, Independence Day, Memorial Day, Labor Day, and Thanksgiving and Christmas. Figure 28-1 (page 28-1) is a sample menu that could be used for an Independence Day celebration.

Regional-type foods have become increasingly popular with military diners. Other specialty meals such as Super Suppers and monthly birthday dinners add to the variety offered to dining facility patrons. The FSS should determine what specialty meals would be most popular with patrons and plan accordingly.

BUFFET MEALS

Buffet type meals present an alternative method for serving specialty meals that can increase diner participation and satisfaction. Buffets offer attractively displayed food items, and they reduce the number of serving personnel needed. Buffets give simple, fast service for breakfasts, lunches, and dinners. You may also offer buffets along with cafeteria-style service to reduce long lines. Special buffets planned around a central theme, such as a Hawaiian luau, help build morale.

INDEPENDENCE DAY CELEBRATION

As Independence Day is commemorated, we often think of barbecues and outdoor entertaining. Dining facility patrons may enjoy this special menu which includes summertime favorites.

Pineapple Chicken (L-157) Barbecued Spareribs (L-92)
Grilled Steak (L-7)

Boston Baked Beans (Q-3) Parsley Potatoes (Q-77)
Calico Corn (Q-27) Lyonnaise Green Beans (Q-7)
Tossed Vegetable Salad (M-48) Fruit Medley Salad (M-32)

Assorted Bread Margarine

Apple Pie (I-8) Vanilla Ice Cream (J-24)
Strawberry Fruit Cup (J-6-4)

Coffee (C-5) Iced Tea (C-13) Lowfat and/or 2-Percent Milk

Figure 28-1. Sample Independence Day menu

Buffet Menu

Buffet meals may vary from an evening, cold buffet to a semiformal meal with one or more hot items. Food items may include a variety of meat, fish, and poultry entrees. Appetizers such as cheese balls, deviled eggs, and Swedish meatballs are quick and easy to prepare. Vegetables and starches such as creamed asparagus, scalloped potatoes, rice pilaf, duchess potatoes, and cauliflower au gratin are good dishes for buffets. Many types of salads, soups, and desserts are also appropriate. A relatively formal buffet may include an item such as a steamship round, a prime rib, or a decorated standing rib roast.

Arrangement

Foods served as buffets should be attractively arranged. Different shapes and sizes of dishes arranged at varying heights around a centerpiece offer the diner an appealing setting. The centerpiece may be a decorative floral arrangement, a mock ham or decorated turkey, a horn of plenty, fruit and flower trays, or an ice carving. The ice carving may also be functional. For example, a decorative shrimp boat may also hold the shrimp and shrimp cocktail sauce. China is normally placed at the head of the buffet table. Set the food items at varying heights to make it easier for soldiers to serve themselves and to improve appeal. Foods used strictly for decoration should be placed behind those to be served. Arrange flowers, candles, and other decorative pieces throughout the display on the buffet table. Make the table easy to replenish. Remember to place cold foods first and hot foods last. The dining room may have to be rearranged for a buffet meal.

Service

You usually use self-service with buffets. However, if meats are to be carved, food service personnel will have to carve and serve them. Chafing dishes, warming trays, cold pans, and other similar items may be needed on the buffet table.

CHAPTER 29

SERVICE

GENERAL

One of the most important factors in satisfying the diner is the manner in which food is served. Serving a meal involves more than preparing meats, potatoes, vegetables, and salads and placing the food items on the serving line. The FSS must select the best arrangement for displaying the food items to be served. He must also supervise the serving of food to the diners. Diners are entitled to friendly, courteous, and efficient service. Meals must be served on time so that diners do not have to wait. Thoughtful and imaginative planning and good supervision in the dining facility are musts.

PROGRESSIVE COOKERY

The last soldier on the serving line, as well as the first, is entitled to be served an attractive, well-cooked, hot meal. To accomplish this for up to 1,000 or more diners takes planning. Progressive cookery is a primary method used to provide fresh, hot items throughout the meal-serving period. In progressive cookery, food is cooked in batches at staggered times. You maintain a continuous cooking operation up to and through the serving period. For example, it would take too long to try to cook french-fried fresh potatoes completely at serving time. However, you can partially cook (blanch) the potatoes and cool and refrigerate them ahead of time. Then close to serving time, you can finish the cooking in two or three minutes as you need potatoes. In this way, each diner gets hot, tasty, french-fried potatoes with his meal. When possible, serve French toast, hot cakes, steaks, and chops directly from the griddle to the diner.

SERVING LINE

The order in which you place food on the serving line is governed largely by the equipment, the space available for cold items, the location of the steam table, and the location of the grill. However, you must follow certain rules. These rules are discussed below.

Protect displayed, open food or drink against consumer contamination with easily cleanable counter-protector devices, cabinets, display cases, containers, sneeze guards, or other NSF-approved protective equipment.

Serve hot foods *H0T* --140° F or more--and cold foods *COLD* --45° F or less. Place only small quantities of food on the serving line at one time. Replenish the food as needed. Place hot items--soup, meat, and vegetables--on the steam table. Place cold items--salads, relishes, and certain desserts--near refrigerators for speed and ease in replenishing.

Ice for consumer use is dispensed only by employees with scoops, tongs, or other ice-dispensing utensils or through automatic self-service equipment. Use of glassware for scooping ice from bins is prohibited. Between uses, ice-transfer utensils must be stored outside the ice bin in a way that protects them from contamination or inside the bin, provided the handle always remains uncovered. Except for ice-dispensing equipment, self-service ice is not permitted.

Arrange food attractively on the serving line. For instance, fresh fruit should be neatly arranged and not just dumped on a tray.

Make certain that trays, glasses, dinnerware, flatware, and serving implements are clean.

See that flatware is on hand at all times for diners. Place flatware at the end of the serving line. This will help eliminate unnecessary walking and help prevent diners from taking more utensils than they need for the meal.

You want those in the line to move as rapidly as possible. To help them, place condiments, salad dressings, and similar items on a condiment table in the dining area. For fast-moving items, select locations for easy access for both replenishment and service.

Make sure serving lines are set up as close to serving time as possible. Hot food should be placed on the line last. Once the line is set up, check menu items against those listed on the production schedule. Sample the food for palatability, and check the serving temperature.

Make sure that grilled items for both short-order and main-course meals are grilled to order.

Make sure pastry and baked items are prepared as close to serving time as possible. They should be cut and replenished in uniform portions throughout the serving time to keep them from drying out.

Check the layout of mobile service and dispensing equipment and self-service beverage-dispensing equipment to see how it affects traffic flow.

Check for plate waste, and try to determine why foods are being discarded.

SERVICE

A primary duty of the FSS or contractor and first cook is to provide good service to the diners. To assist them in carrying out their duties, they assign food servers to serve related food items. They should encourage the use of self-service except for certain high-cost food items such as meat. Self-service may have to be limited when a large number of people must be served in a short time.

SERVERS

Servers must be given instructions about the correct utensil to use for serving each food item. Some of the various serving, utensils and their uses in the dining facility are as follows:

- Use tongs for serving items that should be picked up and placed in the dish (certain meats, bread, relishes, and similar items).
- Use an ice-cream scoop for serving foods such as mashed potatoes.
- Use the 8-ounce ladle for serving soup. Dip the ladle into the soup, stir the soup, then pour the soup into the bowl. Use the 2-ounce ladle the same way for serving gravy or a dessert sauce.
- Use a basting spoon for serving stews, certain vegetables, and other foods of a fairly soft consistency. Use a slotted spoon for serving any item with which the liquid is not served. If the food you serve sticks to the spoon, use another utensil to free it.
- Use pie- and cake-servers and food-turners for serving pie, cake, and individual salads from a sheet pan. Use a second utensil to push the item from the serving utensil.

REPLENISHMENT OF FOOD ON THE SERVING LINE

The FSS or contractor designates one or more persons to replenish food items on the serving line. Cooks assigned this job must remember the following:

- Do not bring food to the serving line and dump it into an empty or almost-empty serving pan. Instead, take the serving pan to the kitchen, and replace it with a fresh pan of the items.
- Add the food remaining in the pan on the serving line to the new supply before bringing it from the kitchen. Do not do this if the food is baked in the pan from which it is served (for example, turkey pot pie, macaroni and cheese, and baked beans).
- Be sure each new tray of food you bring to the serving line is as appetizing and attractive as the first.
- Try to minimize interfering with traffic flow while replenishing food items.
- Additional guidance on food display, service, and sanitation is in TB MED 530.

APPENDIX A

ON-THE-JOB TRAINING PROGRAM

The on-the-job training program should include information on the subjects the soldier will be expected to know and the work he will be expected to perform. Table A-1 (page A-1) lists the subjects to be covered, the purpose and scope, and applicable references for each. Table A-2 (page A-3) lists sample administrative information and subject areas and tasks.

Table A-1. Subjects to be covered in an on-the-job training program

SUBJECT	PURPOSE AND SCOPE	REFERENCES
Beverages	Basic procedures used in the preparation of beverages, including coffee,tea, cocoa, dehydrated milk, and fruit drinks; discussion of the common deficiencies found in making beverages; and critique.	FM 10-23-2 TM 10-412
Breakfast foods	Basic procedures used in preparing and cooking breakfast foods, including hot cereals, French toast, grilled bacon, griddle cakes; eggs (fresh and dehydrated), and creamed beef; methods of using leftovers; and critique.	FM 10-23-2 TM 10-412
Cold suppers	Procedures used in preparing and serving cold suppers.	FM 10-23-2
Desserts other than pastry	Basic procedures used in preparing desserts normally appearing on the master menu, other than pastry,including garnishing and methods of increasing acceptability; preparing dried and dehydrated fruits; and critique.	TM 10-412
Dining facility accounting	The proper use and interpretation of DA Form 3034.	AR 30-1 FM 10-23-2
Food conservation	The need for economy in the use of food, the causes of waste, and the importance of waste control; established procedures to reduce food and plate waste; and discussion of serving methods and their effect on food conservation.	FM 10-23-2 AR 30-1
Food garnishes	Procedures used in garnishing food and adding eye appeal to the meal.	FM 10-23-2
Meat cooking	Classification of meats; basic procedures (dry- and moist-heat methods) used in preparing and cooking meats, including fresh, canned, and variety meats; methods of determining doneness; proper methods of carving; methods of using leftovers; and critique.	FM 10-23-2 TM 10-412 TB MED 530

Table A-1. Subjects to be covered in an on-the-job training program (continued)

SUBJECT	PURPOSE AND SCOPE	REFERENCES
Orientation procedures, and recipes	Standardization of equipment and cooking methods in the armed forces; proper use of established standards procedures such as weighing and measuring ingredients; proper use of cooking temperatures, and ability to change quantities on standardized recipes.	TM 10-412
Paste products	Basic procedures used in preparing and cooking pasta products, including rice, macaroni, spaghetti, and noodles; methods of using leftovers; and critique.	FM 10-23-2
Poultry and seafoods	Classes of poultry and seafoods; basic procedures used in preparing and cooking poultry and seafood, including the dry- and moist-heat methods; proper cooking temperatures; methods of determining doneness; proper method of carving; methods of using leftovers; and critique.	FM 10-23-2 TM 10-412
Salads and salad dressings	Preparation of salad ingredients; preparation and serving of salads,including preparing salad dressings, combining ingredients, and garnishing; and critique.	TM 10-412
Sandwiches	Basic procedures used in preparing sandwiches, including types of fillings, quantity production, wrapping, and precautionary measures; peculiarities to watch for in sandwiches; and critique.	FM 10-23-2 TM 10-412
Sanitation	Nontechnical discussion of the effect of bacteria, yeast, and molds on food; basic problems of and prevention of food poisoning; effective control of insects and rodents; and discussion of basic sanitation principles and procedures.	FM 21-10 TB MED 530 TM 5-637
Soups, sauces, gravies	Basic procedures in preparing roux, stocks, soups, sauces, and gravies; the importance of soups and sauces; and critiques.	FM 10-23-2 TM 10-412
Soft rolls and quick breads	Basic principles of preparing soft rolls and quick breads; function of ingredients; assembling and scaling of ingredients; mixing procedures; fermenting period and punching of roll dough; cutting, rolling, and panning of dough; dropping of batters; pan proofing; baking times and temperatures; conserving of ingredients; and critique.	TM 10-412 FM 10-23-2
Variety cakes	Basic principles of preparing batter cakes, sponge cakes, and icings; function of ingredients; assembling and scaling of ingredients; mixing procedures; cooling and panning batters; baking times and temperatures; care of cakes after baking; finishing of cakes; conserving of ingredients; and critique.	FM 10-23-2 TM 10-412

Table A-1. Subjects to be covered in an on-the-job training program (continued)

SUBJECT	PURPOSE AND SCOPE	REFERENCES
Variety pies	Basic principles of preparing pie dough, pie fillings, and meringue; functions of ingredients; assembling and scaling of ingredients; mixing procedures; rolling of dough for single- and double-crust pies; washing, docking, and sealing; baking times and temperatures; finishing of meringue pies; conserving of ingredients; and critique.	FM 10-23-2 TM 10-412
Vegetables cooking	Types of vegetables; preparation for cooking; basic principles of progressive vegetable cooking; effects of various cooking conditions on the color, texture, flavor, and acceptability of vegetables; proper procedures used for preparing, cooking, and serving fresh, frozen, dehydrated, dried, and canned vegetables; use of leftover vegetables; and critique.	FM 10-23-2 TM 10-412

Table A-2. Sample administrative soldier information for a leader book (FM 25-101)

Self-Development Tasks **Soldier's Name:** _____

Page___ of ___ **Status - Enter date in appropriate column**

TASK NUMBER AND SHORT TITLE	GO	NO-GO	GO	NO-GO	GO	NO-GO
SUBJECT AREA 1: SANITATION, SECURITY, AND SAFETY						
101-524-1101 Maintain personal hygiene standards						
101-524-1102 Maintain safety standards						
101-524-1260 Perform sanitation services at a field kitchen						
101-524-1261 Clean & sanitize serving and cooking utensils at a field kitchen						
101-524-1409 Clean & sanitize serving and cooking utensils in a dining facility						
101-524-1410 Apply food protection measures in a dining facility						

Table A-2. Sample administrative soldier information for a leader book (FM 25-101) (continued)

Self-Development Tasks	**Soldier's Name:** _____					
Page__ of __	**Status - Enter date in appropriate column**					
TASK NUMBER AND SHORT TITLE	**GO**	**NO-GO**	**GO**	**NO-GO**	**GO**	**NO-GO**
101-524-1411 Apply security measures at a field kitchen or in a dining facility						
SUBJECT AREA 2: FOOD PREPARATION						
101-524-1103 Apply nutrition retention measures						
101-524-1151 Perform preliminary food preparation procedures						
101-524-1152 Prepare and cook meat, poultry, and seafood						
101-524-1153 Prepare and cook vegetables						
101-524-1160 Prepare and cook fillings, icings, and glazes						
101-524-1161 Prepare and bake bread products						
101-524-1162 Prepare and cook egg products						
101-524-1163 Prepare and cook cereal, rice, and pasta products						
101-524-1164 Prepare beverage products						
101-425-1165 Prepare and/or cook sandwiches						
101-524-1166 Store and use leftover foods						
101-524-1169 Prepare and cook salads and salad dressings						
101-524-1170 Prepare and cook soups, sauces, and gravies						

Table A-2. Sample administrative soldier information for a leader book (FM 25-101) (continued)

Self-Development Tasks	**Soldier's Name:** _____					
Page__ of __	**Status - Enter date in appropriate column**					
TASK NUMBER AND SHORT TITLE	**GO**	**NO-GO**	**GO**	**NO-GO**	**GO**	**NO-GO**
101-524-1171 Prepare desserts and pastries						
101-524-1263 Store, prepare, and serve T rations						
101-524-1264 Prepare meals for remote site feeding						
SUBJECT AREA 3: RECEIPT AND STORAGE OF SUPPLIES						
101-524-1205 Store subsistence items						
101-524-1206 Check subsistence supplies for quantity and condition						
SUBJECT AREA 4: FIELD KITCHEN EQUIPMENT OPERATIONS AND MAINTENANCE						
101-524-1251 Operate the M-2 burner unit						
101-524-1255 Use and maintain the insulated food container						
101-524-1256 Set up, operate, maintain, and prepare the MKT for movement						
101-524-1257 Set up, operate, maintain, and prepare the KCLFF for movement						
101-524-1258 Set up and maintain the water-sterilizing bag						
101-524-1259 Pitch and strike the M1948 kitchen tent						
101-524-1301 Perform operator maintenance on the M-2 burner unit						

Table A-2. Sample administrative soldier information for a leader book (FM 25-101) (continued)

Self-Development Tasks	**Soldier's Name:** _____					
Page___ of ___	**Status - Enter date in appropriate column**					
TASK NUMBER AND SHORT TITLE	**GO**	**NO-GO**	**GO**	**NO-GO**	**GO**	**NO-GO**
101-524-1501 Operate and maintain the M-1959 range outfit						
101-524-1502 Operate and maintain the immersion heater						
101-524-1503 Operate and maintain the gasoline lantern						
SUBJECT AREA 5: SERVING PROCEDURES						
101-524-1355 Set up serving lines and serve at a field site						
101-524-1356 Set up serving lines and serve in a dining facility						
SUBJECT AREA 6: GARRISON EQUIPMENT OPERATIONS AND MAINTENANCE						
101-524-1504 Operate and maintain the mixing machine						
101-524-1505 Operate and maintain the heavy-duty range						
101-524-1506 Operate and maintain conventional and/or convection ovens						
101-524-1507 Operate and maintain coffee urns						
101-524-1508 Operate and maintain deep-fat fryers						
101-524-1509 Operate and maintain griddles						
101-524-1510 Operate and maintain meat slicers						
101-524-1511 Operate and maintain conveyor toasters						

APPENDIX B

SAMPLE TRAINING GUIDES

This appendix contains sample training guides listing subject, scope, and subtopics. Covered in this appendix are guides for cooking meat (Table B-1, page B-l); poultry (Table B-2, page B-3); fish and shellfish (Table B-3, page B-5); and vegetables (Table B-4, page B-6). Also included is a sample training guide for preparing breakfast foods (Table B-5, page B-7); soups (Table B-6, page B-8); and salads (Table B-7, page B-9).

Table B-1. Sample training guide for cooking meat

SUBJECT	SCOPE	SUBTOPICS
How to roast meat	Explanation of roasting principle: Beef Veal Pork Lamb and mutton	Characteristics of cuts suitable for roasting
	Care and storage before roasting	
	Preparation: Seasoning Roasting temperatures Time	Shrinkage: Cause Effect Control
	Testing for doneness	Methods of testing
	Serving	Gravies Jellies Garnishes
	Carving	Carving tools Portions
	Care of meat: After roasting During serving period Storage	Use of drippings, fat, and trimmings
How to grill meat	Explanation of grilling principle	Purpose and effect of grilling
		Cuts suitable for grilling: Beef Veal Lamb

Table B-1. Sample training guide for cooking meat (continued)

SUBJECT	SCOPE	SUBTOPICS
How to grill meat *(continued)*	Preparation: Fresh meat Frozen meat Procedures: Seasoning Searing Temperature Grilling time	Equipment
How to braise meat	Explanation of braising principle Preparation: Browning Procedures: Seasoning Basting Temperature Timing Finishing process Testing for doneness Care and storage	Cuts of meat used for braising Equipment Stocks Sauces or glaze Importance of low temperature Method of testing
How to simmer (boil) meat	Explanation of cooking principle Preparation: Fresh meats Corned beef Smoked meats Procedures: Seasoning Care in cooking Temperature Timing Testing for doneness Carving	Cut of meat Equipment Use of resulting stock Methods of testing Variations in carving and serving

Table B-1. Sample training guide for cooking meat (continued)

SUBJECT	SCOPE	SUBTOPICS
How to saute (panfry) meat	Explanation of cooking principle	Cuts suitable for sauteing
	Preparation	Equipment and utensils Selection of butter, vegetable shortening, lard, or oil
	Procedures: Seasoning Browning	Variations in finishing process in oven
	Temperature Timing: Thickness Finishing	Variations in finishing process in oven
	Preparation of sauce used with sauteed meats	
	Testing for doneness	Methods of testing
	Serving	Garnishes Sauces Gravies
	Care and storage	

Table B-2. Sample training guide for cooking poultry

SUBJECT	SCOPE	SUBTOPICS
How to roast poultry	Explanation of roasting principle: Turkey Chicken Duck	Classification Effect of roasting Nutritive value Characteristics of poultry suitable for roasting: Age Weight
	Preparation for roasting: Frozen poultry	Equipment Roast pans Thermometers

Table B-2. Sample training guide for poultry (continued)

SUBJECT	SCOPE	SUBTOPICS
How to roast poultry *(continued)*	Procedures: Seasoning Basting Vegetable garnishes Roasting temperatures Time	Shrinkage: Cause Effect Control
		Variation in roasting procedure for ducks
	Carving	Carving tools Portion control
	Testing for doneness	Methods of testing
	Serving	Sauce Gravy Garnishes
	Stuffings and dressings: Types Variations in methods of preparation	
	Care of fowl: After roasting During serving period Storage	Related topics
How to deep-fat fry poultry	Explanation of frying principle	Cuts suitable for frying
	Preparation: Fresh poultry Frozen poultry	Equipment Fat used: Amount Temperature
	Procedures: Seasoning Dredging Temperature Timing	
	Testing for doneness	Methods of testing

Table B-3. Sample training guide for cooking fish and shellfish

SUBJECT	SCOPE	SUBTOPICS
How to bake fish	Preparation	Equipment and utensils Kinds of fish suitable for baking
	Procedures: Seasoning Temperature Timing	
	Testing for doneness	Methods of testing
	Serving	Sauces Garnishes
How to saute and panfry fish	Preparation	Kinds of fish suitable for sauteing and panfrying
	Procedures: Seasoning Dredging Breading Temperature Timing	Temperature of fat
	Testing for doneness	Methods of testing
	Serving	Sauces Garnishes
How to deep-fat fry fish	Preparation	Equipment
	Procedures: Breading Seasoning Temperature Timing Draining Care in frying	Precautions: Thermometers Thermostats
	Testing for doneness	Methods of testing
	Serving	Sauces Garnishes

Table B-3. Sample training guide for cooking fish and shellfish (continued)

SUBJECT	SCOPE	SUBTOPICS
How to cook seafoods: Clams Oysters Shrimp	General principles of cooking seafood	Variations in seafood
	Preparation--care and storage before cooking: Frozen Canned Dehydrated	Equipment
	Procedures: Seasoning Care during cooking	Preventing toughness Variations in seafood dishes: Chowder Cocktail
	Testing for doneness	Methods of testing
	Serving	Sauces Accompaniments Garnishes
	Storage after cooking	

Table B-4. Sample training guide for cooking vegetables

SUBJECT	SCOPE	SUBTOPICS
How to cook vegetables	Preparation--proper handling and storage of vegetables before cooking	Nutritive value of vegetables Effect of cooking Preservation of food: Value Color Flavor Texture Equipment and utensils used in cleaning and preparing vegetables

Table B-4. Sample training guide for cooking vegetables (continued)

SUBJECT	SCOPE	SUBTOPICS
How to cook vegetables *(continued)*	Procedure for cooking vegetables: Fresh Frozen Dehydrated Canned	Kinds High moisture, mild flavor High moisture, strong flavor Moist, starchy Dry, starch
	Cooking by different methods: Steaming Boiling Pressure-cooking Sauteing Frying	Principles involved in: Steaming Boiling Creaming Sauteing
	Seasoning	Variations
	Temperature	
	Time	
	Serving	Sauces
	Proper handling and storage of cooked vegetables	

Table B-5. Sample training guide for preparing breakfast foods

SUBJECT	SCOPE	SUBTOPICS
Eggs	Preparation and procedures: Seasoning Care while cooking Temperature Timing	Care of eggs Storage: Fresh Dehydrated Frozen Methods or varities: Boiled Fried Poached Scrambled Omelets Shirred
Meat items (cured meat)	Preparation and procedures: Cooking temperature Draining Time	Varieties: Ham Sausage Bacon Equipment, utensils, and tools Methods of serving

Table B-5. Sample training guide for preparing breakfast foods (continued)

SUBJECT	SCOPE	SUBTOPICS
Cooked cereals	General preparation and procedures: Seasoning Care while cooking Cooking temperature Time Care after cooking	Types: Cream of wheat Farina Oatmeal Variations Utensils Methods of serving
Batters	Preparation and procedures: Pancakes or griddle cakes Waffles Care during cooking: Temperature Time Care after cooking	Equipment, utensils, and tools Methods of serving
Toasts	Preparation and procedures: Seasoning Flavoring Temperature Time	Equipment Methods of serving Storage and care of bread

Table B-6. Sample training guide for preparing soups

SUBJECT	SCOPE	SUBTOPICS
How to prepare soup stock	Preparation: White stock Brown stock Procedures: Seasoning Care during cooking Temperature Time Care after cooking Uses of stock	Utensils Handling Holding
How to prepare cream soups	Preparation and procedures: Seasoning Thickening agent Temperature	Varieties: Potato Tomato Mushroom

Table B-6. Sample training guide for preparing soups (continued)

SUBJECT	SCOPE	SUBTOPICS
How to prepare cream soups *(continued)*	Time	Utensils Variations in procedure Form of milk or cream used: Dry or dehydrated Canned Stock
	Care while cooking	Curdling: Cause Effect Prevention Method of serving
	Care after cooking	Storage
How to prepare purees (thick soups)	Preparation and procedures: Soaking Seasoning Care in cooking Temperature Time	Equipment Stock Garnishes
	Care after cooking	Storage

Table B-7. Sample training guide for preparing salads

SUBJECT	SCOPE	SUBTOPICS
How to prepare salads	Preparation and procedures: Arrangement Care of salads during preparation Dressings Care of salads after preparation	Nutritive value of salads Types of salad involving use of: Cooked foods Raw foods Gelatin Care in washing and preparing salad greens and vegetables Organization of materials Storage of salad components: Fruits Vegetables Greens Types of dressings
	Serving	Methods of serving

APPENDIX C

SAMPLE STANDING OPERATING PROCEDURES FOR MENU ITEMS NOT LISTED IN TM 10-412

This appendix provides a basic dining facility SOP format that you can tailor for your dining facility needs. Remember that the starting amounts and the replenishing amounts will vary from facility to facility, and so will the types of equipment being used. The starting amounts listed in this appendix are for example only. When you are developing your own SOPs, remember to include those items not shown in the appendix that you determine your facility needs. The following instructions will assist you in tailoring this SOP to your local operating conditions:

COLUMNS	A SOP NO	B MENU ITEM	C INSTRUCTIONS
	1. a.	ORANGE JUICE, FROZEN	
		1. PREPARATION TIME	- 1 hour prior to serving
		2. STARTING AMOUNT	- 15 each, 32 fluidounce cans
		3. REPLENISH AMOUNT	- 5 each as needed
		4. TYPE OF CONTAINER	- juice dispenser
		5. WHERE	- self-service line
		6. SPECIAL INSTRUCTION	- Follow directions on can, prepare night before, place in 15-gallon pot under refrigeration.

1. COLUMN A, SOP NUMBER: When assigning SOP numbers, start with Number 1, and continue until all SOPs have a number. If more than one like item falls under the same category, subdivide by assigning a subletter to the same number to better identify the item. For example, if SOP 1.a. is for orange juice, frozen, SOP 1.b. might be for grape juice, frozen. If your facility is using the Army Food Management Information System (AFMIS), assign SOP numbers using the numbers already assigned in AFMIS.

2. COLUMN B, MENU ITEM: Place the name of the item for which you wish to create an SOP (such as, ORANGE JUICE, FROZEN) in this column, and the instruction guidelines.

3. COLUMN C, INSTRUCTIONS: Place the instructions for the guidelines here that you want your cooks to follow. Information should be direct and to the point. For example: "follow directions on can" is easier to understand than "look at the can and read and follow the directions."

a. 1. Column C, PREPARATION TIME: Allow the cooks enough time to read the SOP, gather all the ingredients, prepare the product, and have at least 15 minutes left to place it on the line. Remember to use backwards-planning when deciding times, (for example, the product (orange juice) can take 5 minutes to prepare three cans, and if you have 25 cans, it could take a cook 30 minutes to prepare them). In our first example, backwards-planning would be as follows: 15 minutes for setting up the serving line, 30 minutes for the preparation of the orange juice, and 15 minutes for gathering the ingredients and reading the SOP and the production schedule; therefore, the total preparation time listed should be approximately one hour.

b. 2. Column C, STARTING AMOUNT: This is the amount of an item with which you want your cooks to start the meal (for example, 16 each, 1 pound, or one container of an item). You also need to state the size or weight of the items, such as: 32-fluid ounce can, bottle 6-ounce, or 2-pound box. This will help give your cooks specifics as to the quantity to be used and different type of cans, boxes, or bottles to be used.

c. 3. Column C, REPLENSIH AMOUNT: This is where you let the cooks know exactly what amount you want them to back up the line with. Along with the written instructions you should also let your cooks, food service workers, and so forth, know they must use common sense when replenishing the line. For example, they should not replenish the soft-serve ice cream if 15 minutes are left until the dinner meal is over and the soft-serve ice cream runs out. Although your SOP calls for a replenish amount of 5 gallons, your cooks should know that they might only need 1 gallon to finish the meal. They should replenish only with the quantity needed to complete the meal.

d. 4. Column C, TYPE OF CONTAINER: Here you explain what size serving pan to place the item in, or indicate the piece of equipment that the product goes with, (for example, 1/3 line pan, 1/2 line pan, 1/3 inch line pan 6 inches deep, juice dispenser, or soft-serve ice cream machine).

e. 5. Column C, WHERE/SERVING UTENSIL: Most items prepared (used) in SOPs are for self-service and should be positioned on the self-service line, salad bar, or at other locations designated by your SOP. The words "SERVING UTENSIL" will be added to this line when the need exists. (For example, when lettuce is in an SOP for a salad bar, include tongs here, or if you use syrup no 10 can, you will need a 1- or 2-ounce ladle to serve it with.)

f. 6. Column C, SPECIAL INSTRUCTIONS: Here you tell the cooks anything that may help them better understand what must be done with the item, (for example, prepare night before, follow heating instructions on the package). You may also refer the cook to the special instructions on the production schedule when required. (For an example, see assorted salad dressings (SOP 26).)

ATSM-CES-OA (25-30q) 23 APRIL 1991

MEMORANDUM FOR FOOD ADVISOR/FOOD SERVICE PERSONNEL

SUBJECT: Standing Operating Procedures (SOP) (Garrison Operations) HHC, 1/63 INF, Fort Wright, KY 00000-0000

SOP NO	MENU ITEM	INSTRUCTIONS
1. a.	ORANGE JUICE. FROZEN	
	PREPARATION TIME	- 1 hour prior to serving time
	STARTING AMOUNT	- 15 each, 32-fluidounce cans
	REPLENISH AMOUNT	- 5 each as needed, 32-fluidounce cans
	TYPE OF CONTAINER	- juice dispenser
	WHERE	- self-service line
	SPECIAL INSTRUCTIONS	- Follow directions on can, prepare night before, place in covered 15-gallon pot under refrigeration.
b.	GRAPE JUICE, FROZEN	
	PREPARATION TIME	- 1 hour prior to serving time
	STARTING AMOUNT	- 12 each, 32-fluidounce cans
	REPLENISH AMOUNT	- 4 each as needed, 32-fluidounce cans
	TYPE OF CONTAINER	- juice dispenser
	WHERE	- self-service line
	SPECIAL INSTRUCTIONS	- Follow directions on can, prepare night before, place in covered 10-gallon pot under refrigeration.
c.	GRAPEFRUIT JUICE, FROZEN	
	PREPARATION TIME	- 1 hour prior to serving time
	STARTING AMOUNT	- 8 each, 32-fluidounce cans
	REPLENISH AMOUNT	- 2 each as needed, 32-fluidounce cans
	TYPE OF CONTAINER	- juice dispenser
	WHERE	- self-service line
	SPECIAL INSTRUCTIONS	- Follow directions on can, prepare night before, place in covered 10-gallon pot under refrigeration.
2. a.	ASSORTED CANNED JUICES	
	PREPARATION TIME	- 45 minutes prior to serving time
	STARTING AMOUNT	- 6 each, no 3 cylinder cans
	REPLENISH AMOUNT	- 1 each as needed, no 3 cylinder can
	TYPE OF CONTAINER	- juice dispenser
	WHERE	- self-service line
	SPECIAL INSTRUCTIONS	- Chill overnight, shake cans prior to opening. See special instructions on the production schedule for type(s) to be used.

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SUBJECT: Continuation of Standing Operating Procedures

b. ASSORTED CANNED JUICES, EZ OPEN
PREPARATION TIME - 45 minutes prior to serving time
STARTING AMOUNT - 48 each, 6-fluidounce cans
REPLENISH AMOUNT - 12 each as needed, 6-fluidounce cans
WHERE - salad bar
SPECIAL INSTRUCTIONS - Chill overnight. See special instructions on the production schedule for type(s) to be used.

3. a.

ASSORTED FRESH FRUIT	APPLES	ORANGES	PEARS
PREPARATION TIME	- 1 hour prior	1 hour prior	1 hour prior
STARTING AMOUNT	- 35 pounds	30 pounds	20 pounds
REPLENISH AMOUNT	- 10 pounds	10 pounds	10 pounds
TYPE OF CONTAINER	- 8" line pan	8“ line pan	8“ line pan
WHERE	- salad bar	salad bar	salad bar

SPECIAL INSTRUCTIONS - Wash fruit thoroughly before placing in line pan. See special instructions on the production schedule for type(s) to be used.

b.

ASSORTED FRESH FRUIT	BANANAS	TANGERINES	GRAPES
PREPARATION TIME	- 1 hour prior	1 hour prior	1 hour prior
STARTING AMOUNT	- 40 pounds	30 pounds	30 pounds
REPLENISH AMOUNT	- 10 pounds	10 pounds	10 pounds
TYPE OF CONTAINER	- 8" line pan	8“ line pan	8“ line pan
WHERE	- salad bar	salad bar	salad bar

SPECIAL INSTRUCTIONS - Do not place bananas in refrigeration. Wash fruit prior to placing in serving pan. See special instructions on the production schedule for type(s) of fruit(s) to be used.

4. CANTALOUPS AND HONEYDEW MELONS
PREPARATION TIME - 45 minutes prior to serving
STARTING AMOUNT - 2 each
REPLENISH AMOUNT - 1 each as needed
TYPE OF CONTAINER - 6" line pan
WHERE/SERVING UTENSIL - salad bar/tongs
SPECIAL INSTRUCTIONS - See special instructions on the production schedule for type(s) to be used. Wash and cut melons in half, remove the seeds in cantaloupe and honeydew melons, and slice melons into ½-inch-thick wedges.

5. JAMS AND JELLIES, INDIVIDUAL
PREPARATION TIME - 30 minutes prior to serving
STARTING AMOUNT - 100 each, ½-ounce cup 100 count
REPLENISH AMOUNT - 50 each as needed
TYPE OF CONTAINER - separate 1/3 line pans for different types
WHERE - salad bar
SPECIAL INSTRUCTIONS - See special instruction on production schedule for type(s) to be used.

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6. JELLY AND JAMS, JARS

PREPARATION TIME	- 45 minutes
STARTING AMOUNT	- 1 each, 2-pound glass jar
REPLENISH AMOUNT	- 1 jar each as needed, 2-pound glass jar
TYPE OF CONTAINER	- wooden bowls
WHERE/SERVING UTENSIL	- salad bar/1 tablespoon per bowl
SPECIAL INSTRUCTIONS	- See special instructions on the production schedule for the different type(s) to be used.

7. MAPLE SYRUP CANNED

PREPARATION TIME	- 1 hour prior to serving
STARTING AMOUNT	- 1 each, no 10 size can
REPLENISH AMOUNT	- 1 each as needed, no 10 size can
TYPE OF CONTAINER	- 1/2 line pan
WHERE/SERVING UTENSIL	- last slot on the hot line/1-ounce ladle
SPECIAL INSTRUCTIONS	- Heat syrup in covered half pan for 10 minutes in vegetable steamer.

8. MAPLE SYRUP INDIVIDUAL

PREPARATION TIME	- 1 hour prior to serving
STARTING AMOUNT	- 100 each, 100 count individual-size bags
REPLENISH AMOUNT	- 50 each as needed
TYPE OF CONTAINER	- 1/2 line pan
WHERE/SERVING UTENSIL	- last slot on the hot line/tongs
SPECIAL INSTRUCTIONS	- Follow heating instructions on bag.

9. WAFFLES, FROZEN, BROWN AND SERVE

PREPARATION TIME	- 1 hour prior to serving, preheat oven
STARTING AMOUNT	- 15 pounds, 1-pound package or box
REPLENISH AMOUNT	- 1 pound as needed, 1-pound package or box
TYPE OF CONTAINER	- 4" line pan
WHERE	- hot line
SPECIAL INSTRUCTIONS	- Follow the directions on the package or box, as appropriate.

10. MELTED BUTTER

PREPARATION TIME	- 1 hour prior to serving
STARTING AMOUNT	- 3 pounds, 1-pound prints
REPLENISH AMOUNT	- 1 pound as needed, 1-pound print
TYPE OF CONTAINER	- 1/2 line pan
WHERE/SERVING UTENSIL	- last slot on the hot line/basting brush
SPECIAL INSTRUCTIONS	- Melt slowly in large frying pan.

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11. BUTTER PATTIES, READY TO SERVE

PREPARATION TIME	- 30 minutes prior to serving
STARTING AMOUNT	- 3 pounds, 90 patties per pound
REPLENISH AMOUNT	- 1 pound as needed
TYPE OF CONTAINER	- butter dispenser
WHERE	- self-service line, next to juice machines
SPECIAL INSTRUCTIONS	- Clean dispenser after each meal.

12. MILK, LOW-FAT, 6-GALLON CONTAINER

PREPARATION TIME	- 1 1/2 hour prior to serving time
STARTING AMOUNT	- 1 container per empty container
REPLENISH AMOUNT	- 1 container per empty container
TYPE OF CONTAINER	- milk machine
WHERE	- self-service line
SPECIAL INSTRUCTIONS	- Milk tubes will be cut diagonally approximately 1/2 inch from the base of the cutoff valve.

13. MILK, 1/2 PINT

PREPARATION TIME	- 30 minutes prior to serving
STARTING AMOUNT	- 100 white, 50 chocolate, 25 skim
REPLENISH AMOUNT	- 25 each as needed
TYPE OF CONTAINER	- 4“ deep line pan
WHERE	- salad bar
SPECIAL INSTRUCTIONS	- Do not add ice to the pans; ensure the salad bar is plugged in 45 minutes prior to serving time. See special instructions on the production schedule for type(s) to be used.

ASSORTED YOGURTS

PREPARATION TIME	- 15 minutes
STARTING AMOUNT	- 25 each, 8-ounce containers
REPLENISH AMOUNT	- 25 each as needed, 8-ounce containers
WHERE	- salad bar
SPECIAL INSTRUCTIONS	- See special instruction on the production schedule for the different type(s) to be used.

15. ASSORTED BREADS

PREPARATION TIME	- 30 minutes prior to serving
STARTING AMOUNT	- 3 loaves of sliced white, 1 wheat, 1 rye
REPLENISH AMOUNT	- 1 loaf each as needed
TYPE OF CONTAINER	- bread dispenser
WHERE	- self-service line
SPECIAL INSTRUCTIONS	- Use freshest bread on hand for each meal.

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16. TOAST

PREPARATION TIME	-	45 minutes prior to serving, turn on toaster
STARTING AMOUNT	-	20 loaves white, 10 wheat, 5 raisin
REPLENISH AMOUNT	-	10 loaves white, 5 wheat, 2 raisin
TYPE OF CONTAINER	-	4“ line pan
WHERE/SERVING UTENSIL	-	serving line under the heat lamp/tongs
SPECIAL INSTRUCTIONS	-	Start making toast 15 minutes prior to serving time.

17. HAMBURGER BUNS

PREPARATION TIME	-	1 hour prior to serving, turn on bun warmer
STARTING AMOUNT	-	use amount needed for hamburgers
REPLENISH AMOUNT	-	as needed, 8 buns per package
TYPE OF CONTAINER	-	bread warmer
WHERE	-	behind short-order serving line
SPECIAL INSTRUCTIONS	-	Place buns in warmer 30 minutes prior to serving.

18. FRANKFURTER ROLLS

PREPARATION TIME	-	1 hour prior to serving, turn on bun warmer
STARTING AMOUNT	-	use amount needed for frankfurters
REPLENISH AMOUNT	-	as needed, 8 rolls per package
TYPE OF CONTAINER	-	bread warmer
WHERE	-	behind short-order serving line
SPECIAL INSTRUCTIONS	-	Place rolls in warmer 30 minutes prior to serving.

19. ICE CREAM CONES

PREPARATION TIME	-	20 minutes
STARTING AMOUNT	-	1 box, 100 servings per box, wafer type
REPLENISH AMOUNT	-	1 box as needed, 100 servings per box
WHERE	-	next to soft-serve ice cream machine
TYPE OF CONTAINER	-	6“ line pan with lid

20. SOFT-SERVE ICE CREAM

PREPARATION TIME	-	2 hours prior to serving
STARTING AMOUNT	-	6 gallons each, chocolate and vanilla
REPLENISH AMOUNT	-	3 gallons each as needed
TYPE OF CONTAINER	-	soft-serve ice cream machine
WHERE	-	self-service line
SPECIAL INSTRUCTIONS	-	Operation and cleaning instructions are located on the side of the machine.

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21. TEA BAGS
PREPARATION TIME - 1 hour prior to serving
STARTING AMOUNT - 1 box, 100 count individuals per empty box
REPLENISH AMOUNT - 1 box, 100 count individuals per empty box
TYPE OF CONTAINER - serve from the original box
WHERE - self-service line, next to coffee urn
SPECIAL INSTRUCTIONS - Close box after each meal.

22. CARBONATED BEVERAGES
PREPARATION TIME - 2 1/2 hours prior to serving
STARTING AMOUNT - 1 metal container per empty container
REPLENISH AMOUNT - 1 metal container per empty container
TYPE OF CONTAINER - carbonated-beverage dispenser
WHERE - self-service line
SPECIAL INSTRUCTIONS - Lock beverage machine after each meal. See special instructions on the production schedule for type(s) to be used. Hookup and cleaning instructions are located on the side of the dispenser.

23. DECAFFEINATED COFFEE, INSTANT
PREPARATION TIME - 1 hour
STARTING AMOUNT - 1 each, 100 count box, per empty box
REPLENISH AMOUNT - 1 each, 100 count box, per empty box
TYPE OF CONTAINER - leave in original box
WHERE - next to the coffee urn
SPECIAL INSTRUCTIONS - Close the lid on the box at the end of the serving period.

24. BEVERAGE BASE
PREPARATION TIME - 3 hours prior to serving
STARTING AMOUNT - 3 packages
REPLENISH AMOUNT - 1 package each type(s) as needed
TYPE OF CONTAINER - juice dispenser
WHERE - self-service line
SPECIAL INSTRUCTIONS - Follow directions on package. See special instructions on the production for the type(s) to be used.

25. ASSORTED SALAD DRESSINGS, INDIVIDUAL
PREPARATION TIME - 1 hour
STARTING AMOUNT - 100 each, 100 count individual servings
REPLENISH AMOUNT - 50 each type(s) as needed
TYPE OF CONTAINER - 1/3 line pan
WHERE - salad bar
SPECIAL INSTRUCTIONS - See special instructions on the production schedule for type(s) to be used (including low-calorie).

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26. ASSORTED SALAD DRESSINGS, JARS

PREPARATION TIME - 30 minutes prior to serving
STARTING AMOUNT - 3 bottles each, 16-ounce glass jars
REPLENISH AMOUNT - 1 bottle each as needed
WHERE - salad bar
SPECIAL INSTRUCTIONS - Chill jars night before. Wash all jars after each meal, store partial bottles in refrigerator. See special instructions on the production for the type(s) (including low-calorie) to be used.

27. INDIVIDUAL CONDIMENTS

	HOT SAUCE	STEAK SAUCE	WORCESTERSHIRE
PREPARATION TIME -	1 hour	1 hour	1 hour
STARTING AMOUNT -	3 bottles, 6-ounce	3 bottles, 10-ounce	3 bottles, 10-ounce

REPLENISH AMOUNT - 1 bottle each as needed
WHERE - salad bar
SPECIAL INSTRUCTIONS - Wash all bottles after each meal, store partial bottles under refrigeration. See special instructions on the production for the type(s) to be used.

28. CRANBERRY SAUCE, JELLED

PREPARATION TIME - 1 hour
STARTING AMOUNT - 3 each, no 303 size cans
REPLENISH AMOUNT - 1 each as needed, no 303 size can
TYPE OF CONTAINER - 1/3 line pan
WHERE - salad bar
SPECIAL INSTRUCTIONS - Chill night before, slice into ¼-inch-thick slices, garnish pan with lettuce leaf.

29. COFFEE CREAMER. NONDAIRY, INDIVIDUAL

PREPARATION TIME - 90 minutes prior to serving
STARTING AMOUNT - 100 packages each, 100 packages per box
REPLENISH AMOUNT - 100 packages each as needed
TYPE OF CONTAINER - 1/3 line pan
WHERE - Next to coffee urn, by tea bags.

30. CEREAL, PREPARED. PACKAGE ASSORTMENT

PREPARATION TIME - 1 hour prior to serving
STARTING AMOUNT - 72 servings, 72 servings per box
REPLENISH AMOUNT - 20 packages as needed, 72 servings box
WHERE - place on top of the salad bar
SPECIAL INSTRUCTIONS - Place soup bowls (inverted) next to the cereal packages.

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31. POTATO CHIPS, INDIVIDUAL BAGS

PREPARATION TIME	-	20 minutes
STARTING AMOUNT	-	25 bags each, 1 1/2-ounce packages
REPLENISH AMOUNT	-	25 bags each as needed
TYPE OF CONTAINER	-	4“ line pan
WHERE	-	self-service line

32. APPLESAUCE

PREPARATION TIME	-	1 hour
STARTING AMOUNT	-	3 each, no 303 size cans
REPLENISH AMOUNT	-	1 each as needed, no 303 size can
TYPE OF CONTAINER	-	1/3 line pan
WHERE/SERVING UTENSIL	-	salad bar/2-ounce ladle
SPECIAL INSTRUCTIONS	-	Chill overnight.

33. GRATED PARMESAN CHEESE

PREPARATION TIME	-	15 minutes prior to serving
STARTING AMOUNT	-	2 each, 1-pound containers
REPLENISH AMOUNT	-	1 each as needed, 1-pound container
WHERE	-	salad bar, with condiments
SPECIAL INSTRUCTIONS	-	After the meal, place partical containers in the refrigerator behind the main-meal serving line.

34. CRACKERS. SODA, SALTED, INDIVIDUAL WRAPPED

PREPARATION TIME	-	1 hour prior to serving
STARTING AMOUNT	-	1/2 pound, from 2-pound box
REPLENISH AMOUNT	-	1/4 pound as needed, from 2-pound box
TYPE OF CONTAINER	-	1/3 line pan, 6“ deep
WHERE	-	self-service line next to soup pot

35. CHOW MEIN NOODLES

PREPARATION TIME	-	1 hour prior to serving
STARTING AMOUNT	-	1 each, no 10 size can
REPLENISH AMOUNT	-	1 each as needed, no 10 size can
TYPE OF CONTAINER	-	1/2 line pan, 4“ deep
WHERE/SERVING UTENSIL	-	salad bar, next to condiments/tongs

36.

		RELISH TRAY, SHORT ORDER LETTUCE	TOMATOES	ONIONS
PREPARATION TIME	-	90 minutes	90 minutes	90 minutes
STARTING AMOUNT	-	4 pounds	5 pounds	4 pounds
REPLENISH AMOUNT	-	2 pounds	2 pounds	2 pounds
TYPE OF CONTAINER	-	2" line pan	2“ line pan	2“ line pan
WHERE/SERVING UTENSIL	-	salad bar/tongs		
SPECIAL INSTRUCTIONS	-	Wash produce per recipe M-G-1, shred lettuce, slice tomatoes thin on slicing machine, peel onions and slice thin on slicing machine.		

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37. LEMON WEDGES

PREPARATION TIME	-	45 minutes prior to serving
STARTING AMOUNT	-	1 pound lemons
REPLENISH AMOUNT	-	1/2 pound lemons as needed
TYPE OF CONTAINER	-	1/3 line pan
WHERE/SERVING UTENSIL	-	next to coffee urn/fork
SPECIAL INSTRUCTIONS	-	Wash, cut in half, slice into four wedges per half.

38. SALAD BAR

PREPARATION TIME	-	3 hours
STARTING AMOUNT	-	see quantities stated below
REPLENISH AMOUNT	-	see quantities stated below
TYPE OF CONTAINER	-	1/3 line pan
WHERE/SERVING UTENSIL	-	salad bar/tongs or tablespoon, as appropriate
SPECIAL INSTRUCTIONS	-	See recipe cards M-G-1 and M-G-2 for washing, preparation, and storage instructions for fresh vegetables.

SALAD BAR ITEMS	STARTING AMOUNTS	REPLENISH AMOUNTS
lettuce, bite-size pieces	10 pounds	5 pounds
cabbage, shredded	2 pounds	2 pounds
tomatoes, wedge	4 pounds	2 pounds
green peppers, strips	3 pounds	1 pound
carrot strips	3 pounds	1 pound
celery strips	3 pounds	1 pound
cucumbers, pared, sliced	3 pounds	1 pound
onions, chopped	1 pound	1 pound
olives, green whole	1 ea, no 303 size can	1 ea, no 303 size can
olives ripe	1 ea, no 303 size can	1 ea, no 303 size can
ham, pear-shaped, chopped	3 pounds	2 pounds
jalapeno peppers	½, no 10 size can	½, no 10 size can

39. CATSUP, MUSTARD, SALAD DRESSING, AND PICKLE RELISH

PREPARATION TIME	-	1 hour
STARTING AMOUNT	-	100 each, 100 count individual servings
REPLENISH AMOUNT	-	50 each as needed
TYPE OF CONTAINER	-	1/3 line pan for each type
WHERE		salad bar

Charles H. Berry

CHARLES H. BERRY
SFC, USA
Food Service Sergeant

FOOD ADVISOR _____ Approved / Disapproved _____/____
(name and rank) Date Ext

Reviewed _____/____
Reviewed _____/____
Reviewed _____/____

APPENDIX D

SAMPLE LESSON PLAN

This appendix contains a sample lesson plan. The lesson plan is for the Food Service Specialist, 94B10 Course.

US ARMY QUARTERMASTER CENTER AND SCHOOL

LESSON PLAN

COURSE: Food Service Specialist 94B10 Course

ANNEX: D, Garrison Dining Facility Operations

INSTRUCTIONAL UNIT: Garrison Dining Facility Operations Review and Test

TYPE: lC, 1E3

TIME ALLOTTED: 2 hours (100 minutes)

CLASSES PRESENTED TO: Personnel who are members of the active Army or Reserve component.

TOOLS, EQUIPMENT, AND MATERIAL: Pencil, paper, test, recipe cards, ingredients, equipment, and utensils.

PERSONNEL: One instructor, one assistant

TRAINING AIDS: None

REFERENCES: AR 30-1, FM 10-23-2, TB MED 530, and TM 10-412.

STUDY ASSIGNMENTS: All notes, 94B-AIT-D-1.0(H1)

SOLDIER UNIFORM AND EQUIPMENT: Cook's whites and 94B-AIT-D-1.0(H1)

TROOP REQUIREMENT: None

TRANSPORTATION REQUIREMENT: None

PROPONENT DEPARTMENT: Army Center of Excellence, Subsistence

September 1993

Written By: _____

Approved By: _____

Concurred By: _____

No Change _____

1st Year Review By: _____ Date _____ Revised _____

No Change _____

2d Year Review By: _____ Date _____ Revised _____

No Change _____

3d Year Review By: _____ Date _____ Revised _____

No Change _____

4th Year Review By: _____ Date _____ Revised _____

1. INTRODUCTION. (Conference, 40 minutes)

a. Objective. Placed in a classroom environment, given a review and references, students will take a written test on the material covered in Annex D. Students must complete the test with 70 percent accuracy.

b. Reason. Having completed Annex D, it is necessary to determine if the skills taught have been acquired, and if the students can perform these skills before proceeding to the next lesson.

c. Risk assessment and Safety Considerations. Instructor will ensure that students comply with all safety precautions as listed in the Course Management Plan.

d. Review. Instructor will review materials covered in Annex D using lesson plans, CMP, handouts, and references.

(1) Production schedule/progressive cookery/use of leftovers.

(a) Identify DA Form 3034 (Production Schedule).

(b) Define progressive cooking.

(c) State three reasons why progressive cooking is used.

(d) Define Potentially Hazardous Food (PHF).

(e) Define leftovers.

(f) Describe PHFs which may be retained as leftovers.

(g) Describe storage requirements for leftovers.

(2) Recipe conversions.

(a) Translate recipe abbreviation.

(b) Convert can sizes.

(c) Convert weight and measure equivalents.

(d) Use chart method of recipe conversion.

(e) Use the formula method of recipe conversion.

(3) Dining facility operations/energy conservation.

(a) The general rules of personal hygiene.

(b) The general rules for food handling.

(c) Perishable and semiperishable subsistence.

(d) Checking subsistence supplies.

(e) Storing subsistence supplies.

(f) Largest energy users.

(4) Small garrison dining facility equipment/operations.

(a) Convection oven.

(b) Meat-slicing machine.

(c) Gas griddle.

(d) Eight-gallon coffee urn.

(e) Gas range.

(f) Vertical mixing machine.

(g) Gas-fired deep-fat fryer.

(h) Small garrison operations.

e. Procedure. Students will receive a 30-minute review of material covered in this annex. A written test will be conducted to include questions from the following areas: Productions schedule, progressive cookery, use of leftovers, recipe conversion, nutrition, energy conservation, dining facility equipment, and dining facility operations. Standard is 70 percent accuracy on the written test. Instructor will conduct the 30-minute review of the test.

2. EXAMINATION. (E3, 50 minutes)

a. Materials to be Used.

(1) 94B-AIT-D-5.0(E3).

(2) Pencil.

(3) References: AR 30-1, FM 10-23-2, TB MED 530, and TM 10-412.

b. Directions for Administrations.

(1) Place students in a classroom environment.

(2) After the review, pass out the test, 94B-AIT-D-5.0(E3).

(3) Explain the purpose of and directions to the test.

(4) Ensure students have pencil, paper, test, and references needed to take the test.

(5) Allow students 50 minutes to complete the test.

(6) Collect and grade all tests.

3. REVIEW. (Conference, 10 minutes)

a. Clarification of Points of Difficulty. Ask students if they have any questions pertaining to garrison dining facility operations.

b. Summary of the Lesson.

(1) You have just completed a written exam on the material covered in Annex D:

(a) Production schedule/progressive cookery/use of leftovers.

(b) Recipe conversion.

(c) Dining facility operations/energy conservation.

(d) Small garrison dining facility equipment/operations.

c. Closing statement. You have successfully completed the garrison dining facility operations training. You now have the skills and knowledge to perform in a garrison dining facility. To reinforce the skills you have acquired, you will be placed in a large garrison dining facility with a large feeding mission. You will work as a team to prepare meals for a large group of soldiers. Large garrison training is very important because it prepares you for the actual type of work you will perform in your unit. You must use all the skills you have acquired up to this point to complete this mission successfully.

GLOSSARY

AATCOM United States Army Aviation Troop Command

ACCP Army Correspondence Course Program

ACES Army Center of Excellence, Subsistence

AFARS Army Federal Acquisition Regulation Supplement

AFMIS Army Food Management Information System

AFSEM Army Food Service Management Program Manual

AG Adjutant General

ALFOODACT All Food and Drug Activities

AMC United States Army Materiel Command

appetizer a portion of food or drink served before a meal to make you want to eat.

AQL acceptable quality level

AR Army regulation

ARCS Army ration credit system

ARNG Army National Guard

ARTEP Army Training and Evaluation Program

AT annual training

attn attention

AV autovon

bake to cook by dry heat in an oven, either covered or uncovered.

barbecue to roast or cook slowly, basting with a highly seasoned sauce.

BAS basic allowance for subsistence

baste to moisten food with liquid or melted fat during cooking to prevent drying of the surface and to add flavor.

bde brigade

BDFA basic daily food allowance

beat to make a mixture smooth by using a fast, regular, circular motion which incorporates air into the product.

bevel the portion of a knife blade sharpened to make the cutting edge.

bl box lunch

blanch to partially cook in deep fat, boiling water, or steam.

blend to combine two or more ingredients by sifting or using the mixer at low speed, or by hand.

BMG budget and manpower guidance

bn battalion

boil to cook in liquid at boiling point (212° F water) in which bubbles rise and break at the surface.

brown to produce a brown color on the surface of food by heating.

buffet a meal at which diners serve themselves from a large table.

bx box

c cup

C Celsius

canape a thin piece of bread or toast spread or topped with cheese, caviar, anchovies, or other appetizers.

Carborundum oilstone an abrasive stone used with oil to sharpen.

cavity the hollow space inside the body of poultry, beef, pork, or seafood.

CG commanding general

chill to cool a food product by placing it under refrigeration.

chop to cut food into small pieces of varying size.

clarify to remove impurities from; to make clear.

cn can

co company

cocktail an appetizer of mixed fruit, vegetable or fruit juice, or seafood.

colander a container with a perforated bottom, for draining and straining foods.

condiment an ingredient (for example, salt or pepper) used to give additional flavor to food.

CONUS continental United States

COR contracting officer's representative

COSCOM corps support command

CPO civilian personnel office

CPT captain

cream to combine a fat (for example, shortening) with other ingredients until the mixture is smooth.

crimp to press together in order to seal.

crisp firm and fresh (used in reference to produce).

CTA common tables of allowances

cube (1) a regularly shaped solid with six equal square sides.

(2) to cut food into cubes about one-half inch on each side or the size specified.

DA Department of the Army

DCSLOG Deputy Chief of Staff for Logistics

DD, DOD Department of Defense

deep-fat fry to cook food by immersing in hot fat.

DEH Director of Engineering and Housing

dehydrate to remove moisture from in order to preserve.

devein to remove a vein or veins from food items such as shrimp or chicken.

DFA dining facility attendant.

dice to cut with a cook's knife into cubes one-quarter inch on each side or the size specified on the recipe.

DIO Director of Industrial Operations

dip a creamy mixture of tasty foods used to dunk potato chips or raw vegetables into.

DMMC division materiel management center

DOC Director of Contracting

dock to punch a number of vertical impressions in a dough with a smooth, round stick about the size of a pencil to allow for expansion and permit gases to escape during baking.

DOL Director of Logistics

DPCA Director of Personnel and Community Activities

DPSC Defense Personnel Support Center

DPT Director of Plans and Training

DPTSEC Director of Plans, Training, and Security

drain to allow excessive water to run off a food product.

dredge to coat with crumbs, flour, sugar, or cornmeal.

dressing (1) a sauce for food (as in salad dressing).

(2) a seasoned mixture usually containing bread as a main ingredient and usually served with poultry.

DRM Director of Resource Management

dry-heat the method of cooking food uncovered and cooking without liquid, except for fat.

DSEC Director of Security

dust to sprinkle fine particles of bread flour on a food service worktable to prevent sticking of dough.

DVD direct vendor deliveries

ea each

entree the main dish of a meal (a United States term).

EOE element of expense

F Fahrenheit

FA food advisor

FAO finance and accounting office

FAR Federal Acquisition Regulation

FDA Food and Drug Administration

filet a boneless slice of meat, fish, or poultry.

FL OZ fluid ounce

flake (1) to pull apart gently (with a fork or other utensil) into small pieces, as in checking to see if cooked fish is done.

(2) a thin flattened piece of a layer of dough in pastry. Pie crusts or puff pastries are flaky if properly tender.

FM field manual

fold (1) to incorporate an ingredient into a mixture by repeated gentle overturnings without stirring or beating, as in folding egg whites into a batter.

(2) to lay one part of an item over another part, as in folding dough for biscuits.

fry to cook in hot fat.

FSC Federal supply classification

FSE food service equipment

FSO food service officer

FSS food service sergeant

G1 Assistant Chief of Staff, G1 (Personnel)

G2 Assistant Chief of Staff, G2 (Intelligence)

G3 Assistant Chief of Staff, G3 (Operations and Plans)

G4 Assistant Chief of Staff, G4 (Logistics)

G5 Assistant Chief of Staff, G5 (Civil Affairs)

gal gallon

garnish to decorate with small pieces of colorful food.

giblets the heart, liver, and gizzard of a fowl.

glaze a glossy coat given to foods, as by covering with a sauce or by adding a sugary syrup, icing, and so forth.

granule a little grain; a small particle (for example, a sugar or salt granule).

grate to rub food over a rough surfaced instrument, such as a grater, to break it into tiny pieces or shreds.

grater a rough surface or a surface with many sharp-edged openings on which food is rubbed to break it into tiny pieces.

gravy a sauce of the fat and juices from cooked meat, often thickened and seasoned.

griddle a flat, heated surface, especially on top of a stove, for grilling food.

grill to cook, uncovered and without adding liquid, on a griddle, removing grease as it accumulates.

GSA General Services Administration

HBK Handbook

hc headcount

HHC headquarters and headquarters company

hors d'oeuvre an appetizer, often served on crackers or small pieces of toast.

HQ headquarters

HQDA Headquarters, Department of the Army

HTH high test hypochlorite

ID identification

IDT inactive duty training

IFA installation food advisor

IG inspector general

IMA installation medical activity

ingredient a part of a recipe, a food material used to make a prepared dish, as in the ingredients of a cake.

IOB installation operating budget

ISSA Interservice Support Agreement

knead to work dough by folding and pressing firmly with the palms of the hands, turning between folding.

KO contracting officer

KP kitchen police

lb pound

LTC lieutenant colonel

MACOM major Army command

maint maintenance

MARC Manpower Requirements Criteria

marinade a preparation containing spices, condiments, vegetables, aromatic herbs, and a liquid (acid or oil or a combination of these) in which a food is placed for a period of time to enhance its flavor or to increase its tenderness.

marinate to allow food, such as meat or fish, to stand in oil, cream, milk, vinegar, French dressing, lemon juice, or other marinade to flavor, improve, or tenderize the product.

MARKS Modern Army Recordkeeping System

MCA Military Construction, Army

measure (1) to find out the quantity of something, especially by comparison with a standard.

(2) an instrument, such as a vessel of standard capacity, used for measuring.

MED medical

membrane a thin pliable sheet or layer of animal or vegetable tissue, serving to line an organ or to connect parts.

METL Mission-Essential Task List

MHE materials-handling equipment

MIL-STD military standards

MILVAN military-owned remountable container

mince to cut up into very small pieces (finer than chopped or diced).

mist pub miscellaneous publication

mix to combine two or more ingredients to the degree specified on the recipe.

moist-heat the method of cooking in a liquid, except fat, or in steam.

MOS military occupational speciality

MPA military personnel, Army

MRE meal, ready-to-eat

MRO materiel release order

mtd mounted

MTOE modification table of organization and equipment

MUSARC Major United States Army Reserve Command

nat national

NCO noncommissioned officer

NCOIC noncommissioned officer in charge

NIFI National Institute for the Food Service Industry

no number

nourish to sustain with food.

NSF national sanitation foundation

NSN national stock number

nutrition the act or process of nourishing or of being nourished; the process by which plants and animals take in and utilize food material.

OCONUS outside continental United States

ODCSLOG Office of the Deputy Chief for Staff Logistics

OJT on-the-job training

OMA Operation and Maintenance, Army

OMB Office of Management and Budget

OPA Other Procurement, Army

oz ounce

PA procurement, Army

palatable pleasing or acceptable to the taste.

pam pamphlet

panbroil to cook uncovered in a hot frying pan, pouring off fat as it accumulates.

panfry to fry in a small amount of fat.

para paragraph

pare to cut away the outer covering; to remove the skin or rind from any food product with a paring knife or other suitable instrument.

pasta any of various flour-and-egg food preparations made of thin unleavened dough.

paste dough, especially when prepared with shortening; pasta.

pastry a sweet, baked food made of paste, especially the shortening paste for pie crust; any item of food of which such paste forms an essential part, such as a pie or tart.

PBAC Program Budget Advisory Committee

PBO property book officer

PCS permanent change of station

peel to remove the outer layer of skin of a vegetable or fruit.

perishable (1) subject to decay or destruction.

(2) an article or item, especially of food, subject to rapid spoilage.

PHF potentially hazardous foods

pkg package

poach to cook food in a simmering liquid; to cook an egg in a hot liquid below the boiling point,

portion an amount of food served to one person; a serving or portion.

potable fit or suitable for drinking

poultry domesticated birds, especially those valued for their meat and eggs, such as chickens, turkeys, or ducks.

ppm parts per million

prep preparatory

prick to pierce a food product slightly with a sharp, pointed instrument, such as a fork.

procedure a particular course or mode of action.

progressive the preparation of food in batches at staggered cookery times in a continuous cooking operation which is maintained up to and including the serving period.

pt pint

puree to press food through a sieve or a food mill.

PVC polyvinyl chloride

PVF polyvinyl fluoride

PVNTMED Preventive Medicine

PWS performance work statement

QAE quality assurance evaluator

QASP quality assurance surveillance plan

QDR Quality Deficiency Report

QM quartermaster

qt quart

qtr quarter

quartered divided into four parts or pieces.

RBP ration breakdown point

RC reserve component

recipe a set of instructions for making or preparing something, especially a food dish.

reconstitute to restore to liquid state by adding water; to reheat frozen prepared foods.

reheat to restore heat or warmth to a food product which has been cooled.

rehydrate to soak, cook, or use other procedures with dehydrated foods to restore water lost during drying.

replenish to make full or complete again, as in replenishing one's stock of food.

RO requisitioning objective

roast to cook by dry heat, usually uncovered, in an oven.

roux a cooked mixture of flour and butter or other fat used to thicken soups or to make gravy or sauces.

RS report of survey

S1 Adjutant (US Army)

S2 Intelligence Officer (US Army)

S3 Operations and Training Officer (US Army)

S4 Supply Officer (US Army)

S5 Civil Affairs Officer (US Army)

sanitize to free from dirt and germs, as by cleaning or sterilizing.

saute to brown or fry food products lightly and quickly in a small amount of shortening on top of the stove.

SB supply bulletin

scald to heat a liquid over hot water or direct heat to a temperature just below the boiling point.

scant not quite up to stated measure.

score to cut shallow slits or gashes across the top surface of a food item.

scrub to clean a food product by washing it with a hard rubbing motion or a brush.

SDT self-development test

season to heighten or improve the flavor of food by adding condiments, spices, or herbs.

seasoned flour or crumbs a mixture of flour or crumbs with seasoning.

semiperishable (1) not subject to rapid deterioration or decay.

(2) an article or item, especially of food, not subject to rapid spoilage.

SF standard form

shape to give a particular form to a food product.

shred to cut or tear into thin strips or pieces using a knife or a shredder attachment.

SIDPERS Standard Installation/Division Personnel System

sieve an instrument with a meshed or perforated bottom, used for separating coarse from fine parts of loose matter or for straining liquids.

sift to put dry ingredients through a sieve to loosen and aerate them.

SIK subsistence in kind

simmer to cook gently in a liquid just below the boiling point (190° F to 210 °F), while bubbles form slowly and break at or below the surface.

smkd smoked

SOP standing operating procedure

sprinkle to scatter or distribute seasoning over a food product so that it is covered evenly.

SSN social security number

STB super tropical bleach

steam to cook over or surrounded by steam.

steep to soak in water or other liquid to soften, cleanse, or extract some constituent.

sterilize to free of microorganisms, usually by bringing to a high temperature.

stew to simmer in enough liquid to cover solid foods.

stir to move ingredients in circle with a utensil such as a spoon or paddle.

stock (1) the liquid or broth prepared by boiling meat, fish, or vegetables and used especially for soups and sauces.

(2) a supply of goods kept on hand; inventory.

strain to retain solid pieces in a strainer (for example, a colander or sieve) which allows the liquid to pass through.

TB technical bulletin

TB MED technical bulletin, medical

tbsp tablespoon

TCMD transportation control and movement document

TDA tables of distribution and allowances

TDY temporary duty

temper to remove from freezer and place under refrigeration long enough to allow separation and handling of the frozen product. Internal temperature should be approximately 26° F to 28 ºF.

tender soft or yielding; easily cut or chewed.

thaw to remove from freezer and place under refrigeration. Internal temperature of the food should be approximately 30° F.

(a) completely--to remove from freezer and place under thaw refrigeration about 48 hours before intended use.

(b) partially--to remove from the freezer and place under thaw refrigeration about 18 hours before intended use.

thicken to make a food product denser by using something such as flour.

TISA Troop Issue Subsistence Activity

TISO Troop Issue Subsistence Officer

TM technical manual

TOE table(s) of organization and equipment

toss to mix ingredients with a light, lifting motion, as with a salad.

tough strong, firm, and flexible in texture; not easily chewed.

TRADOC United States Army Training and Doctrine Command

trim to cut or tear away wilted or damaged portions from produce, such as celery, lettuce, or cabbage, or to cut away fat from meat.

true to shape, adjust, or place exactly or accurately.

tsp teaspoon

TTP tactics, techniques, and procedures

US United States (of America)

USA United States Army

USAF United States Air Force

USAQMC&S United States Army Quartermaster Center and School

USAR United States Army Reserve

USMA United States Military Academy

USMC United States Marine Corps

USPFO United States Property and Fiscal Officer

utensil any of the instruments or vessels commonly used in the kitchen.

VA Virginia

variation a change in one or more ingredients during the preparation of a basic recipe to alter the flavor or appearance of a food product.

VC Veterinary Corps

VRGC voucher register and general control

VSP veterinary service personnel

Wed Wednesday

weigh to measure, separate, or apportion a certain quantity of something according to weight, usually by using a scale.

whip to beat rapidly with a wire whip to increase the volume by incorporating air.

WRI weighted ration issued

yeast a froth or sediment consisting of the cells of certain minute fungi, used to induce fermentation in the manufacture of alcoholic beverages, as a leaven in dough.

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