TECHNICAL BULLETIN

OCCUPATIONAL AND ENVIRONMENTAL HEALTH FOOD SERVICE SANITATION

HEADQUARTERS, DEPARTMENT OF THE ARMY
NOVEMBER 1991

CHANGE
NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC *27 June 1985*

OCCUPATIONAL AND ENVIRONMENTAL HEALTH
FOOD SERVICE SANITATION

TB MED 530, 15 December 1982, is changed as follows:

1. Remove old pages and insert new pages. New or changed material is indicated by a vertical bar in the margin.

Remove pages	*Insert Pages*
2–5 and 2–6	2–5 and 2–6

2. File this sheet in the front of the publication for reference purposes.

By Order of the Secretary of the Army:

JOHN A. WICKHAM, JR
General, United States Army
Chief of Staff

Official:
DONALD J. DELANDRO
Brigadier General, United States Army
The Adjutant General

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Where the above criteria can be met, PHFs other than sandwiches may be PRE-prepared and held as follows:

Internal product temperature	*Maximum time before serving*
45°F (7°C)	36 hours
40°F (4°C)	5 days
0°F (−18°C)	45 days

e. Locally prepared puddings, pastry fillings (including synthetic), and "soft" or filled-type pastries such as pumpkin, synthetic cream, and custard-type pies and pastries (unless served immediately after preparation) shall be refrigerated promptly after preparation to provide a product temperature of 45°F (7°C) or below.

f. Commercially prepared "soft" or filled-type pastries (such as pumpkin, synthetic cream, and custard-type pies and pastries) shall be maintained, until sale or consumption, at a product temperature of 45° F (7° C) or below for a maximum of 7 days after manufacture. If procured frozen, such items may be maintained for the duration of manufacturer's stated frozen shelf life, provided the product temperature is maintained at 0° F(–18° C) or less.

(1) Frozen commercially prepared "soft" or filled pastries may, as an alternative, be thawed under refrigeration. From the time the frozen product is placed in the refrigerator, it may be held for up to 48 hours. If not consumed within the 48 hours allowed, the product shall be discarded as food waste.

(2) Specifically exempt from this provision are such commercially prepared items as individually packaged single or multiple portion pastry items (e.g., filled cupcakes). By virtue of experience, they do not present a significant public health hazard.

g. At the discretion of the IMA, exception may be granted from refrigerating synthetic cream products *provided* that the synthetic filling contains undissolved sucrose (at least 3.0:1 ratio of sucrose to water, considering all sucrose in the filling or other solute combination with an equivalent reduction of water activity). The manufacturer shall provide documentation to the IMA showing that the complete or entire finished item (e.g., pie) at the time of sale or consumption will not support growth of pathogenic microorganisms.

h. Commercially prepared bulk sandwich spreads, delivered frozen to the food service facility, shall be thawed under refrigerated conditions. Once opened, the container and any contents not removed, may be held under refrigeration for a maximum of 48 hours. Contents, once removed, shall not be placed back into the bulk containers, but shall be considered as leftovers (sec VI, this chapter).

i. Delicatessen type salads (e.g., macaroni, potato salads) and puddings when served from commercially prepared bulk containers may be held for a maximum of 48 hours after opening provided provisions of section VI are followed.

2–19. Sandwiches.

Sandwiches are considered PHFs because of the nature of their fillings and the potential for contamination during preparation. For purposes of this bulletin, sandwiches are divided into two broad classifications: "made-to-order" sandwiches and "pre-prepared" sandwiches.

2–20. Made-to-order sandwiches.

"Made-to-order" sandwiches are those prepared for an individual customer for immediate consumption.

a. Sandwiches intended to be eaten cold shall be prepared using chilled ingredients. (Exceptions are allowed for certain filling and dressings which shall be raised to a product temperature of 50-60° F (10-15° C) to allow spreading. Sandwiches with these fillings and dressings shall then be rapidly chilled to 45° F (7° C) or below until served.)

b. Sandwiches intended to be eaten hot shall 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° F (60° C) prior to service.

c. In a mass feeding operation such as a dining facility, snack bar or club, "made-to-order" sandwiches may be batch prepared up to 1 hour prior to service *PROVIDED* they are maintained at safe temperatures and are protected from contamination in accordance with section V.

d. "Made-to-order" sandwiches shall not be held as leftovers and shall be discarded as food waste within 3 hours of preparation.

2–21. Pre-prepared sandwiches.

All sandwiches except "made-to-order" sandwiches are classified as pre-prepared sandwiches. Sandwiches served in mobile food units, vending operations and all other operations, in which the sandwich is not prepared immediately prior to serving, are classified as pre-prepared sandwiches.

a. Pre-prepared sandwiches shall be produced in preparation areas and/or ingredient rooms specifically operated during sandwich preparation for mass sandwich production.

b. Pre-prepared sandwiches shall be individually wrapped.

c. All pre-prepared sandwiches shall be individually labeled, marked or stamped by the producer/manufacturer with the production date/time using a 24-hour system. Each carton, case or box of sandwiches shall be similarly marked and shall also show the producer/manufacturer's name, plant number (when applicable) and address.

d. Leftovers shall not be used in preparation of pre-prepared sandwiches.

e. Condiments shall not be in direct contact with the sandwich ingredients.

f. Sandwiches shall not be reworked, rewrapped, remarked, relabeled or otherwise treated to extend their shelf life.

g. Pre-prepared sandwiches are categorized into three types:

(1) *Type I:* Sandwiches that are held hot until consumed by the customer.

(a) Hot sandwiches such as Reubens, hamburgers, etc., shall be handled carefully to prevent foodborne illness. These sandwiches present a significant potential hazard when temperatures are not carefully controlled.

(b) Either the finished sandwich shall be rapidly heated to the required product temperature (paras 2–12 and 2–13) during sandwich preparation, or the sandwich shall be prepared from hot ingredients.

(c) Sandwiches shall be kept at a product temperature of 140° F (60° C) or higher during storage.

(d) Total time from start of preparation to serving shall not exceed 5 hours. Sandwiches not served within the 5-hour time limit shall be discarded as food waste.

(e) Hot sandwiches shall not be subsequently chilled, frozen, or retained as leftovers.

(2) *Type II:* Frozen sandwiches.

(a) Frozen sandwiches shall be blast frozen.

(b) Frozen sandwiches shall contain only the bread, meat, or cheese portions. Ingredients shall be compatible with blast freezing.

(c) **Frozen sandwiches shall be kept frozen at 0° F (−18° C) during transport, storage, and serving. Whenever this requirement cannot be met, the sandwiches shall be recategorized as chilled sandwiches and marked with a pull date/time not to exceed 60 hours after removal from the frozen environment. In addition, the requirements of (3)*(d)* through *(f)* below shall be met.**

(d) Commercially frozen sandwiches shall be used within the manufacturer's stated shelf life. Shelf life for locally produced frozen sandwiches shall be established by the IMA.

(e) When frozen sandwiches are tempered or refrigerated for service (e.g. by placing them in a refrigerated vending machine), they shall be treated as chilled sandwiches (see (2)(c) above).

(f) Tempered or defrosted sandwiches shall not be refrozen.

(3) *Type III:* Chilled sandwiches.

(a) These sandwiches shall be prepared from chilled (45° F (7° C) or below) or frozen fillings. Exception is made for peanut butter, cheese spreads, and similar ingredients that cannot be spread if they are chilled.

(b) Meat, chicken, tuna fish, eggs, and other similar high protein salad fillings used in pre-prepared chilled sandwiches shall be acidified to pH 4.5 or below. The sandwich producer/manufacturer shall provide written laboratory results from ingredient manufacturer documenting that ingredients comply with this requirement.

(c) Production scheduling shall minimize the time that sandwich ingredients are at unsafe temperatures.

(d) Chilled sandwiches may be held for up to 60 hours after production.

(e) Chilled sandwiches shall be kept at a product temperature of 45° F (7° C) or below during storage, transport, and service. Sandwiches exeeding this temperature *shall* be discarded.

(f) Chilled sandwiches shall not be frozen.

Section V. Food Display and Service

2–22. Milk and cream dispensing.

a. Milk and milk products for drinking purposes shall be—

(1) provided to the consumer in an unopened, commercially filled package not exceeding 1 pint in capacity, or

(2) Drawn by the consumer from a commercially filled container stored in a mechanically refrigerated bulk milk dispenser. Both the container and the bulk milk dispenser shall meet applicable NSF standards (see para 4–1). Where a bulk dispenser for milk and milk products is not available, the IMA may authorize use of commercially filled containers of not more than ½ gallon (2 liter) capacity as an emergency measure. Containers shall be kept closed and maintained at safe temperatures (para 2–4).

b. Milk dispensing tubes shall be cut diagonally approximately ½ inch (1.5 cm) from the cutoff valve.

c. Cream or "half and half" shall be provided in an individual service container, protected pour-type pitcher, or drawn from a refrigerated dispenser designed for such service.

d. Nondairy creaming or whitening agents shall be provided in an individual service container, protected pour-type pitcher, or drawn from a refrigerated dispenser that meets applicable NSF standards and is designed for such service.

☆U.S. GOVERNMENT PRINTING OFFICE: 1985—461–028—10146/401-M

TECHNICAL BULLETIN
NO. MED 530

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, DC, *28 November 1991*

OCCUPATIONAL AND ENVIRONMENTAL HEALTH
FOOD SERVICE SANITATION

You can help improve this bulletin. If you find any mistakes or if you know a way to improve procedures, please let us know. Send your comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) direct to HQDA (SGPS-PSP), 5109 Leesburg Pike, Falls Church, VA 22041-3258.

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***This bulletin supersedes TB MED 530, 15 December 1982.**

CHAPTER 1

OVERVIEW

Section I. INTRODUCTION

1–1. Purpose

This bulletin prescribes procedures for implementing the Army food service sanitation program referenced by AR 40–5. It applies to all food service operations within the U.S. Army and areas under its control, including the U.S. Army Reserve and U.S. Army National Guard facilities.

1–2. References

Required and related publications and prescribed forms and labels are listed in appendix A.

1–3. Explanation of Abbreviations and Terms

Abbreviations and special terms used in this bulletin are explained in the glossary.

1–4. Procedures

AR 30–1, chapter 2, provides the responsibilities of the Army special staff and field command elements related to the Army food service program. To fulfill these responsibilities use the following specific procedures.

a. The installation commander—

(1) Maintains the sanitary control of all food and beverages served or dispensed at the installation. Ensures that food and beverages are served only through food service or vending facilities and operations.

(2) Ensures that the construction, alteration, or modification of food service facilities is accomplished only after the plans and specifications have been reviewed and approved by the installation medical authority (IMA). Upon completion of such projects, ensures that the food service facility does not begin operations without a satisfactory on-site evaluation by the IMA.

b. The IMA, or designated representative—

(1) Advises the installation commander of food service sanitation implications of military operations.

(2) Conducts inspections of food service facilities to determine compliance with this bulletin and referenced documents.

(3) Determines requirements for providing medical examinations of food service personnel.

(4) Conducts medical examinations as required. Ensures that the requirements of paragraph 3–3 are followed if medical examinations of contract food service personnel are provided at contractor's cost by the IMA.

(5) Provides technical guidance and assistance in the presentation of food service sanitation training for nonsupervisory personnel.

(6) Establishes a formal training program for the certification of food service supervisory personnel (para 3–6).

(7) Reviews plans, blueprints, and specifications for all new construction, renovation, or modification of existing food service facilities, equipment, and utensils (see AR 420–10).

(8) Conducts epidemiologic investigations of suspected foodborne illness outbreak.

(9) Ensures that personnel conducting preventive medicine and veterinary inspections of food service facilities are technically proficient.

(10) Conducts pest surveillance of food products and food service facilities for medically important pests, and provides results to pest management personnel.

(11) Provides guidance to food service facility personnel on nonchemical control measures to prevent or control pests. Notifies pest management personnel when nonchemical techniques have failed to control infestations and when supplementary chemical control measures may be needed.

c. The deputy commander for veterinary services—

(1) Conducts necessary sanitation inspections described in AR 40–657/NAVSUPINST 4355.4F/MCO P10110.31G.

(2) Conducts other inspections related to veterinary aspects of procurement, processing, storage, shipment, receipt, and distribution of food.

(3) Investigates reports of food infested, adulterated, or damaged by pests, and reports damage following guidance in AR 40–657/NAVSUPINST 4355.4F/MCO P10110.31G.

d. The food service facility managers—

(1) Ensure all food service personnel under their control are trained in the principles of food service sanitation.

(2) Ensure all food service personnel under their control comply with the provisions of this bulletin. Ensure a copy of this bulletin is maintained at each food service facility (vending machine locations and mobile food units are exempted from this requirement).

(3) Maintain clean, sanitary food service facilities, equipment, and utensils.

(4) Supervise and enforce employee personal hygiene practices.

(5) Ensure sanitary storage, preparation, transport, and serving of food.

(6) Ensure proper equipment maintenance and replacement at specified intervals.

(7) Attain certification of having completed a course in applied food service sanitation acceptable to the IMA.

Section II. FOOD SERVICE SANITATION PROGRAM

1–5. Introduction

The attainment of quality food service is essential at all levels of command. Food is easily contaminated and will readily support the growth of many disease-producing microorganisms. Food sanitation practices are designed to prevent chemical, pest, or microbial contamination of foods and to minimize the growth of pathogenic microorganisms and toxin production.

1–6. Philosophy of Inspection

a. Far more is accomplished in an atmosphere of assistance than that of enforcement. The IMA representative should always strive to establish a relationship of mutual respect between food service, veterinary, and preventive medicine professionals.

b. Every inspection is viewed as an opportunity for food service sanitation education of supervisors and food handlers. Potential health hazard consequences and reasonable solutions should be addressed.

c. Inspectors should place emphasis on those items that have a direct bearing on the prevention of foodborne illness as opposed to the numerous other requirements that, although necessary for optimum food service, are of lesser public health significance.

d. It is impossible to delineate every discrepancy in the area of food service sanitation in this bulletin. Those items that, in the opinion of the inspector, constitute a potential health hazard will be reported with suitable recommendations even though not specifically addressed in this or other Army publications.

1–7. Inspection Type and Frequency

a. Periodic unannounced inspections of all food service facilities are conducted by IMA representatives.

b. Each food service facility is inspected as often as necessary to maintain adequate sanitation standards. Monthly inspections of all facilities are not required. The frequency of inspections depends on the facility's sanitation record as established by initial or baseline comprehensive inspections.

c. Inspection of civilian eating and drinking establishments that are frequented by Army personnel may be conducted in conjunction with appropriate civilian health authorities. When a civilian eating and drinking establishment is suspected of presenting a public health risk to Army personnel, performance of a joint inspection is recommended. Where correction is not obtained through civilian channels, the IMA recommends to the commander that the establishment be placed off limits.

d. Inspections of multiple shift operations are made during all periods of meal preparation, service, and cleanup to determine if procedures are conducted in a sanitary manner. Food service facilities are inspected during each operating shift. Normally the IMA schedules a portion of the food service facility inspections for other than normal duty hours to include weekends. Unannounced inspections are made to observe personal hygiene practices, temperatures at which foods are maintained, food preparation techniques, facility and equipment cleanliness, condition of vending machines, and to check dishwashing, refrigerator, and freezer temperatures.

e. Routine and comprehensive inspection forms are used when conducting the inspection. The term "walk through" is not synonymous with routine and will not be used.

1–8. Inspection of Atypical Food Service Facilities

Numerous food service operations exist on an installation for which the provisions of this bulletin may not be totally applicable. Examples of atypical operations include meat markets and delicatessen operations in Army and Air Force Exchange Service (AAFES) outlets or U.S. Army Commissaries. These operations will comply with applicable portions of this bulletin and MILSTD–903.

1–9. Inspection Forms

a. Comprehensive inspection. DA Form 5161 (Comprehensive Food Service Inspection) (see fig 1–1, front and back), formatted for data processing application, will be used to provide initial data of the facility.

(1) Results of the inspection can be used to establish scheduling for routine inspections. If

used to conduct reinspections of unsatisfactory facilities, it will allow the inspector to reevaluate the overall condition of the facility for future routine inspections. Comprehensive inspections should be conducted at least annually in all facilities.

(2) The inspection will cover the entire period of food preparation, service, and cleanup.

(3) The Installation, Building No., Facility Designation blocks, and the Army Location Code (ARLOC, blocks 6 through 10) at the top of DA Form 5161 must be completely filled in.

(4) The number of those items found to be in noncompliance should be circled and the specific deficiency underlined or expanded upon in the remarks section. Violation reference paragraph numbers are listed on the reverse side of DA Form 5161.

(5) Remarks, when required, should be used to fully explain those items requiring corrective action beyond the capability of the facility manager or those deficiencies not specifically or clearly addressed on the inspection form. As stated on the DA Form 5161, use DA Form 5161–1 (Food Service Sanitation Inspection—Remarks Form) for remarks.

(6) Critical deficiencies (noted by asterisk) are identified to note deficiencies or procedures that must be corrected as soon as possible. A response to the IMA within a specified number of days outlining what action has been taken to correct the deficiency should be required.

(7) The use of the numerical rating system will be at the discretion of the IMA. When used, numerical ratings will be based on actual conditions noted with deficiency points deducted from the total points possible for the establishment. No more than the stated weight (points) of a numbered inspection area will be deducted, regardless of the number of times a given deficiency is noted in a facility.

b. Routine inspection. DA Form 5162 (Routine Food Service Inspection) (see fig 1–2, front and back), formatted for data processing application, will be used as follows:

(1) To conduct inspections at a frequency based upon the facility's sanitation record as determined by comprehensive inspections, physical condition, size, population, and type of meals served.

(2) To supplement periodic comprehensive inspections.

(3) To cover a significant portion of a meal period to include food preparation, service, and cleanup, with emphasis given to processes and practices which have a direct bearing on foodborne illness.

(4) To explain deficiencies not specifically or clearly addressed on the DA Form 5162, use DA Form 5161–1 for remarks (see fig 1–3 for a filled in sample of DA Form 5161–1). (Violation reference para nos. are listed on the reverse side of DA Form 5162.)

c. Data processing. Updates will be fielded as the system is implemented.

COMPREHENSIVE FOOD SERVICE INSPECTION

SAMPLE

For use of this form, see TB MED 530; the proponent agency is the Office of The Surgeon General.

INSTALLATION	BUILDING NO	FACILITY DESIGNATION
Ft. Platte	E-2A	NCO Club - Flat top

PERSON IN CHARGE OF FACILITY	COPY REPORT FURNISHED TO
Mr. Hooper	ICM LTC HALE

TYPE FACILITY 1

- ☐ 1. Troop Dining Facility
- ☐ 4. Hospital Dining Facility
- ☐ 2. Cafeteria
- ☒ 5 Club
- ☐ 3. Snack Bar
- ☐ 6 Other *(specify)*

RATING 2

- ☒ 1. Satisfactory
- ☐ 3 Marginal
- ☐ 2. Unsatisfactory
- ☐ 4 Other *(specify)*

PURPOSE 3

- ☒ 1. Regular
- ☐ 3. Reinspection
- ☐ 2. Courtesy
- ☐ 4. Other *(specify)*

COMMAND	INSTALLATION	FACILITY	INSPECTOR	INSPECTION TIME *(MIN)*	DATE YR	DATE MO	DATE DAY	RESERVED
4 5	6 7 8 9 10	11 12	13 14 15	16 17 18	19 20	21 22	23 24	25 26 27 28 29 30 31 32 33 34
FC	ARLOC	09	011	190	88	12	24	

DESCRIPTION	WT
FOOD	
*01 Approved source, sound condition, no evidence of spoilage	5
02 Original container, properly labeled	1
FOOD PROTECTION	
*03 Potentially hazardous food meets time/temperature requirements during storage, preparation, display, service, transport; leftover policy	5
*04 Equipment to maintain product temperatures	4
05 Thermometers provided, conspicuous, accurate	1
*06 Proper tempering/thawing of potentially hazardous food	3
(*07) Potentially hazardous food offered for self service not re-served	(2)
08 Food protected during storage, preparation display, service transport	2
(09) Handling of food/ice minimized	(2)
10 In use, food/ice utensils properly stored	1
PERSONNEL	
11 Training program records available	1
*12 No evidence of communicable diseases, skin infections, cuts, burns	5
*13 Hands washed and clean, good hygiene practices	4
14 Clean work garments: hair restraints; no unauthorized jewelry, watches	1
FOOD EQUIPMENT AND UTENSILS	
*15 Food/ice contact surfaces are nontoxic, properly designed, constructed, installed, located, and maintained	3
16 Nonfood contact surfaces properly designed, constructed, installed, located, and maintained	1
17 Utensil washing facility properly designed, operated, maintained, and installed	2
18 Accurate thermometers, pressure gauges, chemical test kits provided/used	2
19 Utensils preflushed, scraped, soaked	1

DESCRIPTION	WT
FOOD EQUIPMENT AND UTENSILS *(con't)*	
20 Wash, rinse water Clean, proper temperature	2
(*21) Sanitization rinse clean, correct temperature, concentration, exposure time, and pressure Equipment/ utensils sanitized	(4)
22 Wiping cloths Clean, restricted in use, stored in sanitizing solution	1
*23 Food contact surfaces of equipmennt and utensils: clean, sanitized between uses, free of abrasives/ detergents	3
24 Nonfood contact surfaces of equipment and utensils clean	1
25 Proper storage, handling of clean, sanitized equipment and utensils	1
26 Single-service items not reused, properly stored, and dispensed	2
WATER	
*27 Safe approved sources, adequate hot and cold water, adequate pressure	4
SEWAGE	
*28 Adequate sewage and liquid waste disposal	4
PLUMBING	
29 Installed, maintained properly	1
*30 No cross-connection, potential back siphonage, backflow	3
TOILET AND LAVATORY FACILITIES	
31 Adequate number, convenient, accessible, designed and installed properly	3
32 Toilet rooms enclosed, self-closing doors, good repair, adequate hand cleaner, running water, temperature, hand drying facilities, waste receptacles	1
GARBAGE AND REFUSE DISPOSAL	
33 Containers or receptacles covered, adequate number, vermin proof, emptied frequently, clean	3

DESCRIPTION	WT
GARBAGE AND REFUSE DISPOSAL *(con't)*	
34 Outside storage area properly constructed, clean; adequate container washing facilities	1
INSECT, RODENT, OTHER ANIMAL CONTROL	
*35 No evidence of insects/rodents - unauthorized animals	4
FLOORS, WALLS, AND CEILINGS	
36 Floors: constructed, drained properly, in good repair; covering installation durable, dustless cleaning methods	1
37 Walls, ceilings, attached equipment: constructed properly, good repair, surfaces clean, dustless cleaning methods	1
LIGHTING	
38 Lighting adequate, fixtures shielded, protected	1
VENTILATION	
39 Rooms vented as required	1
*40 Filters and grease extracting equipment clean and properly installed	4
DRESSING ROOMS/AREAS	
41 Clean, lockers provided, convenient location, used	1
OTHER OPERATIONS	
*42 Necessary toxic items properly stored, labeled, used	4
43 Premises: Maintained free of litter, unnecessary articles - maintenance equipment properly stored, authorized personnel only	1
44 Clean/soiled linen properly stored	1
45 Complete separation of food operations from living/sleeping quarters, laundry	1
46 Other *(specify)*	
FOLLOW-UP	
47 Yes ☐	
48 No ☒	
RATING SCORE IF USED	
49 *(100)* Less weight of items violated 100 - 8 = 92	

*Critical deficiencies requiring immediate correction - Use DA Form 5161-1 for additional remarks.

SIGNATURE OF INSPECTOR	TIME	DATE
#11 Ron S. Stone E-7	0845	12/24/88
SIGNATURE OF RECEIVER		**DATE**
Mr. Hooper		24 DEC 88

DA FORM 5161, AUG 91

Figure 1–1. Comprehensive Food Service Inspection (Sample).

ITEM NUMBER	PARAGRAPHS*
1 ●●●●●●●●●●●	2-1, 2-2
2 ●●●●●●●●●●●	2-1, 2-7, 2-23
3 ●●●●●●●●●●●	2-2 thru 2-9, 2-13, 2-17, 2-19, 2-22, 2-24, 2-31, 2-32, 7-10, 8-2
4. ●●●●●●●●●●●	2-7 thru 2-9, 2-27, 2-32
5 ●●●●●●●●●●●	2-5, 2-8, 2-9, 2-27, 2-32
6 ●●●●●●●●●●●	2-18, 2-19, 2-22
7 ●●●●●●●●●●●	2-22, 2-28 thru 2-31
8 ●●●●●●●●●●●	2-2, 2-3, 2-6 thru 2-8, 2-10, 2-11, 2-15 thru 2-17, 2-19, 2-23, 2-24, 2-27, 2-31, 2-32, 2-35, 4-10, 6-7, 6-23, 7-1, 7-11, 7-14, 8-9, 10-9, 10-22
9 ●●●●●●●●●●●	2-2, 2-10, 2-19, 2-25, 2-26
10 ●●●●●●●●●●●	2-3, 2-5, 2-19, 2-25, 2-26
11 ●●●●●●●●●●●	3-6
12 ●●●●●●●●●●●	3-2
13 ●●●●●●●●●●●	3-4, 3-5, 4-32, 5-22, 10-15, 10-20
14 ●●●●●●●●●●●	3-4
15 ●●●●●●●●●●●	2-5, 2-7, 4-1 thru 4-14, 4-16, 4-17, 4-19, 4-21, 4-31, 4-34, 8-3, 10-1, 10-22
16 ●●●●●●●●●●●	2-27, 4-2, 4-3, 4-9, 4-10, 4-13, 4-15, 4-16, 4-19, 4-20, 4-31, 4-34, 5-24, 5-35, 8-3
17 ●●●●●●●●●●●	4-10, 4-22, 4-26, 4-27, 4-29
18 ●●●●●●●●●●●	4-26, 4-27
19 ●●●●●●●●●●●	4-26, 4-27
20 ●●●●●●●●●●●	4-26, 4-27
21 ●●●●●●●●●●●	2-7, 2-10, 2-11, 2-17, 2-19, 4-22, 4-26, 4-27, 7-2, 8-5
22 ●●●●●●●●●●●	4-23

ITEM NUMBER	PARAGRAPHS*
23 ●●●●●●●●●●●	2-7, 2-10, 2-11, 2-19, 4-22, 4-26, 4-27, 7-2, 7-14, 8-5,10-23
24 ●●●●●●●●●●●	4-22, 7-11, 7-14
25 ●●●●●●●●●●●	2-37, 3-4, 4-28, 4-30 thru 4-33, 6-7, 6-23, 7-13
26 ●●●●●●●●●●●	4-6, 4-8, 4-32, 4-33, 7-3, 8-4
27 ●●●●●●●●●●●	4-26, 4-27, 5-1 thru 5-7, 5-23, 5-24, 7-6, 7-13, 8-5, 10-19
28 ●●●●●●●●●●●	5-8, 5-24, 7-7, 7-8, 7-14, 8-6
29 ●●●●●●●●●●●	2-25, 5-9, 5-12 thru 5-14, 6-16, 7-7
30 ●●●●●●●●●●●	2-7, 5-10, 5-11, 5-13, 6-5
31 ●●●●●●●●●●●	5-15, 5-16, 5-21 thru 5-23, 8-7
32 ●●●●●●●●●●●	5-17, 5-18, 5-34, 8-7
33 ●●●●●●●●●●●	5-24 thru 5-26
34 ●●●●●●●●●●●	5-25
35 ●●●●●●●●●●●	5-25, 5-27 thru 5-34, 6-13, 6-31, 8-9, 10-16, 10-19 thru 10-21
36 ●●●●●●●●●●●	5-25, 6-2 thru 6-7, 6-12 thru 6-16, 7-13, 8-8, 10-17
37 ●●●●●●●●●●●	5-25, 6-8 thru 6-15, 8-9
38 ●●●●●●●●●●●	6-17, 6-18
39 ●●●●●●●●●●●	5-20, 6-19, 6-20
40 ●●●●●●●●●●●	6-21, 6-22
41 ●●●●●●●●●●●	6-23, 6-24
42 ●●●●●●●●●●●	2-36 thru 2-42, 4-23, 4-26, 4-27, 4-29, 5-7
43 ●●●●●●●●●●●	6-26, 6-30
44 ●●●●●●●●●●●	5-35, 6-28, 6-29
45 ●●●●●●●●●●●	6-27, 6-28

SAMPLE

*Appropriate paragraph will depend on the actual violation identified. List is not all inclusive and other paragraphs may apply.

DA FORM 5161, AUG 91

2

Figure 1–1. Comprehensive Food Service Inspection (Sample)—Continued.

ROUTINE FOOD SERVICE INSPECTION

For use of this form, see TB MED 530; the proponent agency is the Office of The Surgeon General. **SAMPLE**

INSTALLATION	BUILDING NO.	FACILITY DESIGNATION
Ft. Platte	E-2A	NCO Club - Flattop

PERSON IN CHARGE OF FACILITY

COPY REPORT FURNISHED TO

TYPE FACILITY 1
- ☐ 1. Troop Dining Facility
- ☐ 2 Cafeteria
- ☐ 3. Snack Bar
- ☐ 4. Hospital Dining Facility
- ☒ 5 Club
- ☐ 6. Other *(specify)*

RATING 2
- ☐ 1. Satisfactory
- ☒ 2. Unsatisfactory
- ☐ 3. Marginal
- ☐ 4. Other *(specify)*

PURPOSE 3
- ☒ 1. Regular
- ☐ 2. Courtesy
- ☐ 3. Reinspection
- ☐ 4. Other *(specify)*

COM-MAND	INSTALLATION	FACILITY	INSPECTOR	INSPECTION TIME *(MIN)*	DATE YR	DATE MO	DATE DAY	RESERVED
4 5	6 7 8 9 10	11 12	13 14 15	16 17 18	19 20	21 22	23 24	25 26 27 28 29 30 31 32 33 34
FC	ARLOC	09	011	155	88	11	18	

DESCRIPTION	YES	NO	NA
FOOD SOURCES, WHOLESOMENESS			
01 Only wholesome nonadulterated foods used	☒	☐	☐
02 Use of foods from approved sources	☒	☐	☐
FOOD PROTECTION			
03 Potentially hazardous food held at safe temperatures. Time/temperature requirements met.	☐	☒	☐
04 Hot foods held greater than 140 °F (60 °C)	☐	☒	☐
05 Cold foods held less than 45 °F (7 °C)	☒	☐	☐
06 Temperature of prepared foods reduced rapidly to 70 °F (21 °C) within 2 hours. Internal product temperature reaches 45 °F (7 °C) within 4 hours of refrigeration.	☒	☐	☐
FOOD STORAGE/DISPLAY			
07 Prepared and leftover potentially hazardous foods properly stored	☒	☐	☐
*08 Food not subject to contamination during storage/display	☒	☐	☐
09 Adequate refrigerated storage/display facilities	☒	☐	☐
10 Adequate hot food holding/display facilities	☒	☐	☐
*11 Convenient numerically scaled thermometers for monitoring air temperatures available for each hot and cold temperature zone	☒	☐	☐
FOOD PREPARATION			
12 Proper tempering of frozen foods	☒	☐	☐
13 Proper cooking temperatures: poultry, dressings, stuffed meats, internal product temperature greater than 165 °F (74 °C)	☒	☐	☐
14 Pork, pork products greater than 150 °F (66 °C)	☒	☐	☐
15 Other potentially hazardous foods greater than 140 °F (60 °C). Cooked beef and roast beef internal temperature greater than 145 °F (63 °C), exception - 130 °F (56 °C) dry cooked rate roast beef > 10 lbs.	☒	☐	☐
16 Proper microwave cooking temperatures	☒	☐	☐

DESCRIPTION	YES	NO	NA
FOOD PREPARATION *(con't)*			
17 Proper handling of foods during preparation	☐	☒	☐
18 Raw fruits and vegetables cleaned *(disinfected in emergencies)*	☒	☐	☐
19 Leftover, prepared foods reheated to 165 °F (74 °C) before serving	☒	☐	☐
20 Potentially hazardous foods offered for self service not re-served	☒	☐	☐
PERSONNEL			
21 Food service personnel free from communicable diseases, cuts, burns, boils, etc.	☒	☐	☐
*22 Only qualified personnel preparing food	☒	☐	☐
23 Good personal hygiene practices	☒	☐	☐
*24 Food service personnel *(KP's, etc.)* properly trained	☒	☐	☐
EQUIPMENT			
25 No cross connections/plumbing problems	☒	☐	☐
*26 Equipment/utensils properly cleaned, sanitized and stored	☒	☐	☐
27 Adequate equipment/utensil washing and sanitizing equipment, supplies. Properly used chemical test kit available.	☒	☐	☐
*28 Proper installation/maintenance of equipment	☒	☐	☐
*29 Garbage, refuse containers, covered, clean, vermin proof. Outside area clean.	☒	☐	☐
30 No indication of insects/rodents - unauthorized animals	☒	☐	☐
*31 Filters and grease extracting equipment clean and functioning properly	☒	☐	☐
32 Necessary toxic items properly stored, labeled, used	☒	☐	☐
33 No other critical deficiencies requiring correction to prevent possible foodborne outbreak	☒	☐	☐

*Noncritical deficiencies but require correction ASAP - Use DA Form 5161-1 for additional remarks

SIGNATURE OF INSPECTOR	TIME	DATE
#1 Rex L. Stone E-7	1045	11/8/88
SIGNATURE OF RECEIVER		**DATE**
Mr. Hooper		18 Nov 88

DA FORM 5162, AUG 91

Figure 1–2. Routine Food Service Inspection (Sample).

ITEM NUMBER	PARAGRAPHS*
1	2-1, 2-2, 2-11, 2-16, 5-7, 6-28, 6-30, 6-32, 10-4, 10-20
2	2-1, 2-23, 5-5, 8-2, 10-6, 10-19
3	2-2 thru 2-9, 2-13, 2-17, 2-19, 2-22, 2-24, 2-31, 2-32, 7-10, 8-2, 9-3, 10-12
4	2-4, 2-9, 2-13, 2-21, 2-27, 7-10, 8-2, 10-6
5	2-4, 2-8, 7-10, 8-2, 10-6
6	2-8, 2-19, 2-22
7	2-7, 2-19, 2-22, 2-27, 2-31, 6-23
8	2-7, 2-8, 2-19, 2-25, 2-35, 2-36, 5-35, 8-3, 10-6, 10-16, 10-22
9	2-8, 2-21, 2-27, 7-10
10	2-9, 2-21, 2-27, 7-10
11	2-8, 2-9, 2-27, 7-10, 10-13
12	2-18, 2-19, 2-22
13	2-13
14	2-13
15	2-13, 2-22
16	2-13
17	2-10, 2-19, 2-21, 2-22, 5-22
18	2-11, 2-12, 2-29, 9-3, 10-8, 10-23
19	2-14, 2-31
20	2-22, 2-29, 2-31
21.	3-2, 3-3
22	2-10, 3-1
23	3-4, 3-5, 6-24, 10-9, 10-15
24	3-6
25	2-7, 2-25, 5-9 thru 5-14, 7-7
26	2-7, 2-10, 2-11, 2-17, 2-19, 4-22, 4-26, 4-27, 4-31, 4-33, 7-2, 8-5, 10-21, 10-22
27	4-10, 4-22, 4-26, 4-27, 4-29, 5-6, 7-6, 8-5, 9-3
28	2-5, 2-7, 2-27, 4-1 thru 4-17, 4-19 thru 4-21, 4-31, 4-34, 5-24, 5-35, 6-15, 6-16, 8-3, 10-1, 10-22
29	5-24 thru 5-26, 6-26, 10-19
30	5-25, 5-27 thru 5-34, 6-13, 6-31, 8-9, 10-16, 10-19 thru 10-21
31	5-20, 6-19 thru 6-22
32	2-36 thru 2-42, 4-23, 4-26, 4-27, 4-29, 5-7
33	

SAMPLE

*Appropriate paragraph will depend on the actual violation identified. List is not all inclusive and other paragraphs may apply

DA FORM 5162, AUG 91

2

Figure 1–2. Routine Food Service Inspection (Sample)—Continued.

FOOD SERVICE SANITATION INSPECTION - REMARKS FORM

SAMPLE

For use of this form, see TB MED 530; the proponent agency is the Office of The Surgeon General.

Form will be attached to and become a permanent part of either DA Form 5161 or DA Form 5162.

FACILITY	DATE	INSPECTOR
NCO Club - Flattop	11/18/88	# 11 R. D. Stone

1. REMARKS

#3 Beef stew in kitchen prep area held on stove for 4 hours prior to service - highest temp 95 °F (a) - (Cooks worksheet info and observation).

#4 Baked fish on line, and Reserve for restocked not at 140 °F (b)

#17 Hands were used to mix salads - gloves or long handled utensils were not used.

#17 Cross contamination of food prep table with breaded raw fish and cooked fish ready for service.

#9 Kitchen prep refrig needed to be adjusted to lower setting (c) after 60 minutes stabilized (d)

Manager out briefed, all areas needing correction were discussed and corrective actions Required were explained. UNSAT INSPECTION based on poor food handling techniques and the high risk that these practices can cause food borne illness.

2. DATA

A. Refrigerator Temperature

UNIT	°F
(c) Kitchen Prep #1	55
(d) Kitchen Prep #1	41

B. Dishwashing Data	°F
(1) Manual (Pot + Pan) (a) Sanitizing Temp.	180
(b) Chemical Type	
(c) Conc. *(ppm)*	
(2) Mechanical (a) Wash Cycle Temp.	150
(b) Rinse Cycle Temp.	160
(c) Final Cycle Temp.	170
(d) Chemical Conc. *(ppm)*	

C. Heated Food Temperature

ITEM	°F
(a) Beef stew	95
(b) Baked Fish	90

D. Freezer Temperature All OK

UNIT	°F

DA FORM 5161-1, AUG 91

Figure 1–3. Food Service Sanitation Inspection—Remarks Form (Sample).

CHAPTER 2

FOOD PROTECTION

Section I. SANITARY QUALITY

2–1. Introduction

All food (including ice) will be obtained from approved sources as specified in AR 40–657/NAVSUPINST 4355.4F/AFR 162–32/MCO P10110.31G and will be wholesome.

2–2. Canned Foods

a. The use of food in hermetically sealed containers that have not been obtained from an approved source (that is, home canned foods) is prohibited.

b. Canned food that has abnormal odor, taste or appearance, or is in containers showing abnormalities such as dented seams, bulging at ends, swelling or leakage, will not be served without approval of the IMA. Food declared unfit for human consumption by the IMA will be destroyed or disposed of per AR 40–657/NAVSUPINST 4355.4F/MCO P10110.31G and DOD 4160.21–M.

2–3. Milk and Milk Products

a. Only pasteurized fluid milk and fluid milk products from approved plants will be used or served. Manufactured milk products will meet applicable Federal standards for quality.

b. Dry milk and dry milk products will be made from pasteurized milk and milk products.

c. Unless otherwise authorized by the IMA, dry milk and milk products reconstituted in the food service facility will not be used as fluid milk (beverage) for direct consumption by the customers. These requirements do not prohibit use of reconstituted dry milk products as a beverage for direct consumption by hospital patients.

d. Milk and fluid milk products for drinking purposes will be procured and served in the original, unopened, individual container of 1 pint or less in which they were packaged at the milk plant, or will be procured in approved containers for use with bulk milk dispensers. When approved by the IMA, use of original containers up to 1/2 gallon in size may be permitted.

NOTE

An exception is granted for use within Army child development services programs: Milk may be transferred from bulk milk dispensers, commercial gallon containers, or other approved commercial storage devices or containers to small serving pitchers. The pitchers will be covered and transported immediately to child activity rooms. All milk remaining in the serving pitchers at the end of the meal will be discarded. Serving pitchers are not to be used as storage containers.

e. Individual, single-service, disposable containers of 1 pint or less will be used when fresh milk is served in flight, in transit, at field exercises, to patients in isolation for infectious or suspected infectious disease, and to individuals under similar conditions where sanitary controls may be compromised.

f. Milk and fluid milk products will not be offered for consumption beyond product expiration date without approval from local veterinary personnel.

2–4. Shellfish

Only shellfish that have been procured from an approved source will be served in Army food service facilities. Keep shellfish in the original tagged or labeled containers until used.

Section II. PRODUCT PROTECTION

2–5. Introduction

All food, including ice, will be protected against contamination from dust, insects and rodents, unclean utensils and work surfaces, unnecessary handling, coughs and sneezes, flooding, drainage, overhead leakage, and other sources of adulteration. This applies when food is being stored, prepared, displayed, transported, served, or sold in food service facilities, or while being transported between such facilities. Potentially hazardous food (PHF) will be protected against conditions conducive to the growth of microorganisms.

2–6. Food Protection Measures

Minimum food protection measures include—

a. Applying good sanitation practices in the handling of food.

b. Maintaining high standards of personal hygiene.

c. Keeping PHF refrigerated or heated to temperatures that minimize the growth of pathogenic microorganisms.

d. Inspecting food products as to their sanitary condition prior to acceptance at the facility.

e. Cooking PHFs, as appropriate, sufficiently to kill harmful microorganisms.

f. Providing adequate personnel, equipment, and facilities to ensure sanitary operation.

g. Preventing infestation or contamination of food or food storage areas by insects and rodents.

2–7. Product Temperatures

a. The internal product temperature of PHF will be 45°F (7°C) or below, or 140°F (60°C) or above, at all times, except as provided in *b* below.

b. The cumulative time interval for holding PHF outside the safe temperature zone during preparation and serving will not exceed 3 hours. PHFs that have been maintained at unsafe product temperatures for greater than 3 hours cumulative time will be considered adulterated and will be discarded as food waste.

c. Whenever feasible, and if adequate refrigeration equipment is available, the ideal product temperature for PHFs is 40°F (4°C) or below.

d. The product temperature of foods being heated or being cooled (for example, the rapid cooling of pre-prepared hot food items) should be taken at the geometric center of the food item. Product temperature of foods being thawed or tempered should be measured at the surface of the product.

2–8. Product Thermometers

Metal, stem-type, numerically scaled, indicating or digital thermometers capable of being calibrated and accurate to ±2°F (1°C), will be on hand and used to assure the attainment and maintenance of proper internal cooking, holding, and refrigeration temperatures of all PHFs. Bimetallic dial thermometers are available through the Federal supply system under National Stock Number (NSN) 6685–00–444–6500. Product thermometer stems will be sanitized between uses. Thermometers containing mercury will not be used in contact with food or food-contact surfaces.

NOTE

A thermometer dial should not be immersed in liquid. The thermometer should not be exposed to temperatures exceeding the scale range.

2–9. Emergency Occurrences

The person-in-charge will immediately notify the supporting preventive medicine and veterinary services in the event of fire, flood, mechanical breakdown, power outage, or a similar event that might—

a. Result in the contamination of food, or

b. Prevent PHF from being held at required temperatures. Upon receiving notice of this occurrence, the supporting medical activities will take appropriate measures to protect the public health.

Section III. FOOD STORAGE

2–10. Introduction

Proper food storage minimizes contamination and improves shelf-life.

a. Food, whether raw or prepared, if removed from the container or package in which it was obtained, will be stored in a clean, covered container. Container covers will be impervious and nonabsorbent, except that clean linens or napkins may be used for covering bread or rolls. Solid cuts of meat will be protected by being covered in storage, except that quarters or sides of meat may be hung uncovered on clean, sanitized hooks if no food product is stored beneath the meat. Where dissimilar species of raw meats or raw and cooked items are stored in the same refrigeration unit, physical separation or other effective product protection will be provided to prevent cross-contamination.

b. Containers or bulk lots of food will be stored above the floor on clean racks, dollies, nonwood pallets, or other easily cleanable surfaces in such a manner as to be protected from contamination and pests. Storage racks and containers will be 6 inches (15 cm) above the floor surface or be easily moveable to facilitate inspection and cleaning.

c. Except for required automatic fire protection sprinkler heads, food and containers of food will not be stored under exposed or unprotected sewer lines or water lines. In existing facilities violating this requirement, the IMA will determine the need for drip pans or other corrective action. The storage of food and food related items in toilet rooms or vestibules is prohibited.

d. Food not subject to further washing or cooking before serving will be stored in a way that protects it against contamination.

e. Whenever possible, nonacidic bulk food, such as cooking oil, syrup, salt, sugar, or flour, should be stored in the original product package or container. If transfer is required, the storage containers will be labeled with the common name of

the food. For storage of bulk flour, sugar, and other similar items, place clean, disposable food grade plastic liners in metal storage cans with tight fitting lids. Only National Sanitation Foundation (NSF) approved materials will be used for plastic liners or storage bags that are in direct contact with food. The plastic garbage bags available through the supply system generally do not meet requirements for food storage.

f. Galvanized metal cans will not be used for storage of wet foods or beverages.

g. Acid foods will not be stored in containers or pipes that consist of toxic metals (antimony, cadmium, copper, zinc, lead).

2–11. Refrigerated Storage

Proper temperature control is the most effective means for minimizing the risk of foodborne illness and reducing loss through spoilage.

a. Enough conveniently located refrigeration equipment will be provided to assure the maintenance of PHF at required temperatures during storage. Each mechanically refrigerated unit storing PHF will be provided with a numerically scaled indicating thermometer, accurate to ±3°F (1.7°C), located to measure the air temperature in the warmest part of the refrigeration space. Calibrated recording thermometers, accurate to ±3°F (1.7°C), may be used in lieu of indicating thermometers. A zone-type thermometer without temperature graduations is not acceptable. Refrigeration equipment intended for storage will be designed and operated to maintain air temperatures of 40°F (4°C) or below to ensure that stored product temperatures are maintained below 45°F (7°C). Temperature setting should not be so low that partial freezing of food items occur. Refrigeration equipment intended and used exclusively for tempering or thawing frozen foods may be operated at a maximum air temperature of 45°F (7°C).

NOTES

1. Air temperatures should be taken after refrigeration equipment has reached equilibrium. This will minimize erroneous readings.
2. Inspecting personnel should pay primary attention to monitoring product temperatures.
3. Check refrigerator temperature frequently, especially at times of peak load and low load; make adjustment if indicated.

b. PHFs requiring refrigeration after preparation (pre-prepared food only) will be rapidly cooled (that is, within a 4–hour period) to an internal product temperature of 45°F (7°C) or below. During all handling, the food will be protected from contamination by an appropriate covering. Hot food should be covered or protected in such a way as to minimize any insulating dead air space that would retard cooling. Hot food initially may be left uncovered to prevent insulation condensation, but must be protected from contamination and covered as soon as it is cool enough to prevent condensation and heat retention. Rapid cooling will be accomplished by using one of the following methods which will bring the product temperature down to approximately 70°F (21°C) within 2 hours.

(1) Quick chilling with ice bath and agitation (stirring mechanically or manually every 20 to 30 minutes).

(2) Portioning to shallow pans (3 inches (7.6 cm) or less) or smaller containers (2 gallons or less).

(3) Using prechilled pans and containers for portioning products.

(4) Circulating cold water in steam jacket of kettles (where feasible).

(5) Short-term storage with agitation in walk-in freezer.

(6) Quick chilling by immersing cooking container in cold, running water and with product agitation.

(7) Spreading sliced or layered solid items in shallow pans, then refrigerating.

(8) Distributing the product among several refrigerators.

(9) Using a rapid-chill refrigerator to reduce the temperature prior to placing the food in a standard refrigerator.

c. PHFs to be transported will be prechilled and held at an internal product temperature of 45°F (7°C) or below unless maintained per paragraph 2–12*b*.

d. Frozen food will be kept frozen and stored at a product temperature of 0°F (−18°C) or below except that storage of food at 10°F (−12°C) is acceptable for a period not to exceed 7 days immediately prior to preparation or tempering. Ice cream being dispensed by a scoop can be held at 6°F (−14°C) to 10°F (−12°C) to facilitate serving.

e. Ice intended for human consumption will be potable and will be covered or otherwise effectively protected from contamination. Ice used for cooling stored food and food containers will not be used for human consumption.

f. Wet storage of food is prohibited, except for short-term holding of peeled or sliced potatoes (8–12 hours) and live seafood prior to preparation.

g. All food stored in refrigerated storage units will be covered or otherwise protected from contamination. Except for unpeeled hard-skin fruits

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and vegetables, direct storage of raw or prepared foods on refrigerator shelves is prohibited. Foods protected in single-shelf refrigerated display cases are not required to be individually covered.

2–12. Heated Storage

a. Enough conveniently located hot food holding units will be provided to assure the maintenance of food at the required temperature during holding. Each piece of equipment used for holding PHF will be provided with a numerically scaled indicating thermometer, accurate to ±3°F (1.7°C), located to measure the air temperature in the coolest part of the unit and to be easily readable. Recording thermometers, accurate to ±3°F (1.7°C), may be used in lieu of indicating thermometers. Where it is impractical to install thermometers on equipment such as hot-food tables, steam tables, steam kettles, heat lamps, cal-rod units, or insulated food transport carriers, a product thermometer will be available and used to check the internal product temperature.

b. The internal temperature of PHFs requiring hot holding will be 140°F (60°C) or above. PHF to be transported will be preheated to maintain a temperature of 140°F (60°C) prior to and during serving unless maintained per paragraph 2–11*c*.

c. Steam tables, warmers, or other hot food storage units are not designed nor considered satisfactory for rapid heating of PHFs. Food will be heated above 140°F (60°C) prior to placement in such holding equipment.

Section IV. FOOD PREPARATION

2–13. Introduction

a. Only qualified food service personnel as determined in paragraphs 3–3 and 3–6 are authorized to prepare food.

b. Food will be prepared with the least possible manual contact, with suitable utensils, and on surfaces that prior to use have been cleaned, rinsed, and sanitized to prevent cross-contamination.

c. Disposable plastic gloves should be worn when excessive handling of the food or ingredients is unavoidable. When used, gloves will be discarded and replaced frequently to prevent inadvertent contamination of the food from soiled gloves or from perspiration buildup within the gloves.

2–14. Raw Fruits and Vegetables

a. Fresh fruits and vegetables will be thoroughly washed and rinsed with potable water prior to serving.

b. Fresh fruits and vegetables suspected of being contaminated by parasitic ova or enteric microorganisms will not be used unless approved by the IMA. When authorized for use, fruits and vegetables, including leafy vegetables, may be served raw if thoroughly washed in clean potable water, then disinfected by use of Disinfectant, Food Service (NSN 6840–00–810–6396) according to label instructions. Where Disinfectant, Food Service is not available, disinfection may be accomplished by thoroughly washing, then soaking for 30 minutes in a 200–parts per million (ppm) chlorine solution, or by immersion in potable water at 160°F (72°C) for 1 minute. Prepare the chlorine solution by mixing 1 tablespoon of household liquid bleach (NSN 6910–00–598–7316, sodium hypochlorite—5 to 5.2 percent) with 1 gallon of cool potable water. All surfaces in the facility coming in contact with contaminated fruits and vegetables must be sanitized before being used for other food preparation.

2–15. Sulfiting Agents

Sulfiting agents (that is, sulfur dioxide, sodium sulfite, sodium and potassium bisulfite, and sodium and potassium metabisulfite) will not be—

a. Applied to fresh fruits and vegetables for raw consumption;

b. Applied to foods considered to be good sources of Vitamin B1, including fresh meat products; or

c. Used as a soaking solution to retard oxidation/or browning of potatoes prior to cooking.

2–16. Cooking PHFs

PHFs requiring cooking will be cooked to heat all parts of the food to an internal temperature of at least 140°F (60°C), except that—

a. Poultry, poultry stuffings (dressings), stuffed meats, and stuffings containing meat will 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. Poultry will not be stuffed.

b. Pork and pork products will be cooked to heat all parts of the food to at least 150°F (66°C). Pork and pork products cooked in a microwave oven will be cooked to an internal product temperature of 170°F (77°C).

c. Cooked beef and roast beef will be prepared by a cooking procedure that ensures a minimum internal temperature of 145°F (63°C) for each piece.

d. Rare roast beef (130°F minimum internal temperature) may be prepared using a roast that—

(1) Has not been deboned or otherwise handled.

(2) Weighs more than 10 pounds.

(3) Is prepared in an oven maintained at 250°F (121°C) or higher throughout the entire process. The desired minimum internal temperature will be maintained in all parts of the roast for at least the period listed in table 2–1.

Table 2–1. Temperature and time combination for roast beef.

Minimum internal temperature		*Minimum processing time in minutes after minimum temperature is reached*
Degrees Fahrenheit	*Degrees Celsius*	
130	54.4	121
131	55.0	97
132	55.6	77
133	56.1	62
134	56.7	47
135	57.2	37
136	57.8	32
137	58.4	24
138	58.9	19
139	59.5	15
140	60.0	12
141	60.6	10
142	61.1	8
143	61.7	6
144	62.2	5
145	62.8	Instantly

2–17. Reheating PHFs

PHFs that have been cooked, then refrigerated, and are intended to be served hot will be reheated rapidly to an internal product temperature of 165°F (74°C) or higher before being served or before being placed in hot-food holding units. Use of steam tables, food warmers, or similar hot-food holding facilities for cooking or reheating of PHFs is prohibited.

2–18. Dry Milk and Dry Milk Products

Reconstituted dry milk and dry milk products may be used in instant desserts, milk shakes, and whipped products, or for cooking and baking purposes. Powdered milk shake ice cream mixes and similar products are acceptable for their intended use.

2–19. Use of Eggs and Egg Products

a. Shell eggs will be refrigerated as soon as they are delivered and remain refrigerated until used.

b. All shell eggs will be thoroughly cooked before serving.

c. The serving of foods containing raw eggs (eggnog, homemade ice cream, Caesar salad, Hollandaise sauce) is prohibited.

d. Scrambled eggs will be cooked in small batches no larger than 3 quarts until there is no visible liquid egg.

e. Pasteurized liquid, frozen, or dry eggs and raw egg products (if used in lieu of whole shell eggs) will be used for cooking and baking purposes only. These requirements do not prohibit use of pasteurized liquid, frozen, or dry eggs and raw egg products for consumption by hospital patients, or for the preparation of eggnog and similar nonheat-treated beverages.

2–20. Nondairy Products

Nondairy creaming, whitening, or whipping agents may be reconstituted on the premises only when the products will be stored in sanitized, covered containers not exceeding 1 gallon in capacity and cooled to 45°F (7°C) or below within 4 hours after preparation. Individual packets of nondairy creamer do not require refrigeration unless labeling so requires.

2–21. Tempering Potentially Hazardous Frozen Foods

PHFs will be tempered or thawed only—

a. In designated tempering units operated at an air temperature not to exceed 45°F (7°C); or

b. In general refrigeration units operated at an air temperature not to exceed 40°F (4°C); or

c. As part of the conventional cooking process; or

d. In a microwave oven, provided the food is immediately transferred to conventional cooking facilities as part of a continuous cooking process, or when the entire, uninterrupted cooking process takes place in the microwave oven; or

e. Under potable running water at a water temperature of 70°F (21°C) or below. Water velocity will be sufficient to agitate and float off loose food particles into the overflow. When poultry is tempered in this manner, all surfaces of sinks, equipment, and utensils used will be sanitized immediately afterwards to minimize cross-contamination. Whenever practicable, frozen foods should be placed in a sanitized pot or other container and the water allowed to overflow into the sink. This is the least preferred method for thawing or tempering frozen foods.

2–22. Additional Requirements for Preparation of PHFs

a. Whenever feasible, PHFs will be prepared from chilled ingredients to retard bacterial growth.

b. Manual contact with the food will be kept to an absolute minimum. Hands will be thoroughly washed before contact with food, between contact with raw and cooked food, and between contact with soiled items and food.

c. The surfaces of equipment and utensils used for preparation, subsequent storage, or other direct contact with food will be effectively cleaned and

sanitized after each use. Such surfaces will be sanitized again prior to use unless the items have been stored so as to be protected from contamination. Refer to section VII, chapter 4, for more guidance on these subjects.

d. PHFs will be prepared as close to serving time as possible. Under certain circumstances, PHFs may be prepared for subsequent serving periods provided the product is—

(1) Rapidly chilled to an internal product temperature of 45°F (7°C) within 4 hours (use a rapid-chill refrigerator or a rapid cooling technique).

(2) Identified as pre-prepared and labeled with DA Label 177 (Pre–prepared Food) (fig 2–1) or any other system approved by the IMA, showing the date and time of preparation.

PRE-PREPARED FOOD
TB MED 530; OTSG

	DATE	TIME
Prepared	11/20/88	1045
Use by	12/1/88	1045

DA LABEL 177, AUG 91

Figure 2–1. DA Label 177, Pre-prepared Food (Sample).

(3) After preparation, continuously maintained in the appropriate refrigerated or frozen food environment. Where the above criteria can be met, PHFs, other than sandwiches, may be pre-prepared and held as follows:

Internal product temperature	Maximum time before serving
45°F (7°C)	36 hours
40°F (4°C)	5 days
0°F (–18°C)	45 days

NOTE

Foods not meeting the requirements of *d*(1) above will be classed as a leftover food and used within 24 hours.

e. Locally prepared puddings, pastry fillings (including synthetic), and soft or filled-type pastries such as pumpkin, synthetic cream, and custard-type pies and pastries (unless served immediately after preparation) will be refrigerated promptly after preparation to provide a product temperature of 45°F (7°C) or below.

f. Commercially prepared soft or filled-type pastries (such as pumpkin, synthetic cream, and custard-type pies and pastries) will be maintained at a product temperature of 45°F (7°C) or below until sale or consumption or for a maximum of 7 days after manufacture. If procured frozen, such items may be maintained for the duration of manufacturer's stated frozen shelf life, provided the product temperature is maintained at 0°F (–18°C) or less.

(1) Frozen commercially prepared soft or filled pastries may, as an alternative, be thawed under refrigeration. From the time the frozen product is placed in the refrigerator, it may be held for up to 48 hours. If not consumed within the 48 hours allowed, the product will be discarded as food waste.

(2) Specifically exempt from this provision are such commercially prepared items as individually packaged single or multiple portion pastry items (for example, filled cupcakes) normally handled by the vendor at ambient temperatures. By virtue of experience, they do not present a significant public health hazard.

g. At the discretion of the IMA, exception may be granted from refrigerating synthetic cream products provided that the synthetic filling contains undissolved sucrose (at least a 3.0:1 ratio of sucrose to water, considering all sucrose in the filling or other solute combination with an equivalent reduction of water activity). The manufacturer will provide documentation to the IMA showing that the complete or entire finished item (for example, pie) at the time of sale or consumption will not support growth of pathogenic microorganisms.

h. Commercially prepared bulk sandwich spreads (for example, chicken, ham, tuna), delivered frozen to the food service facility, will be thawed under refrigerated conditions. Once opened, the container and any contents not removed may be held under refrigeration for a maximum of 48 hours. Contents, once removed, will not be placed back into the bulk containers, but will be considered as leftovers (sec VI, this chap).

i. Delicatessen type salads (for example, macaroni, potato salads) and puddings when removed from commercially prepared bulk containers may be held for a maximum of 48 hours after opening provided provisions of section VI are followed. Opened bulk containers may be held to the expiration date as established by the manufacturer and approved by the veterinarians as long as the bulk containers have not been used as serving containers, but only used to replenish the serving line.

2–23. Sandwiches

Sandwiches are considered PHFs because of the nature of their fillings and the potential for contamination during preparation. For the purposes of this bulletin, sandwiches are divided into two broad classifications: "made-to-order" sandwiches and "pre-prepared" sandwiches.

2–24. Made-to-order Sandwiches

Made-to-order sandwiches are those prepared for an individual customer for immediate consumption.

a. Sandwiches intended to be eaten cold will be prepared using chilled ingredients. (Exceptions are allowed for certain fillings and dressings that will be raised to a product temperature of 50–60°F (10–15°C) to allow spreading. Sandwiches with these fillings and dressings will then be rapidly chilled to 45°F (7°C) or below until served.)

b. Sandwiches intended to be eaten hot will 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°F (60°C) prior to service.

c. In a mass feeding operation such as a dining facility, snack bar, or club, made-to-order sandwiches may be batch-prepared up to 1 hour prior to service provided they are maintained at safe temperatures and are protected from contamination per section V.

d. Made-to-order sandwiches will not be held as leftovers and will be discarded as food waste 3 hours after preparation.

2–25. Pre-prepared Sandwiches

All sandwiches except made-to-order sandwiches are classified as pre-prepared sandwiches. Sandwiches served in mobile food units, vending operations and all other operations, in which the sandwich is not prepared immediately prior to serving, are classified as pre-prepared sandwiches.

a. Pre-prepared sandwiches will be produced in preparation areas or ingredient rooms specifically operated during sandwich preparation for mass sandwich production.

b. Pre-prepared sandwiches will be individually wrapped.

c. All pre-prepared sandwiches will be individually labeled (DA Label 177), marked or stamped by the producer or manufacturer with the production date and time using a 24–hour system. Each carton, case, or box of sandwiches will be similarly marked and will also show the producer or manufacturer's name, plant number (when applicable), and address.

d. Leftovers will not be used in preparation of pre-prepared sandwiches.

e. Condiments will not be in direct contact with the sandwich ingredients.

f. Sandwiches will not be reworked, rewrapped, re-marked, relabeled, or otherwise treated to extend their shelf life.

g. Pre-prepared sandwiches are categorized into three types—

(1) *Type I*: Sandwiches that are held hot until consumed by the customer.

(*a*) Hot sandwiches, such as Reubens, hamburgers, etc., will be handled carefully to prevent foodborne illness. These sandwiches present a significant potential hazard when temperatures are not carefully controlled.

(*b*) Either the finished sandwich will be rapidly heated to the required product temperature (paras 2–16 and 2–17) during sandwich preparation, or the sandwich will be prepared from hot ingredients.

(*c*) Sandwiches will be kept at a product temperature of 140°F (60°C) or higher during storage.

(*d*) Total time from start of preparation to serving will not exceed 5 hours. Sandwiches not served within the 5–hour time limit will be discarded as food waste.

(*e*) Hot sandwiches will not be subsequently chilled, frozen, or retained as leftovers.

(2) *Type II*: Frozen sandwiches.

(*a*) Frozen sandwiches will be blast frozen.

(*b*) Frozen sandwiches will contain only the bread, meat, or cheese portions. Ingredients will be compatible with blast freezing.

(*c*) Frozen sandwiches will be kept frozen at 0°F (−18°C) during transport and storage. Whenever this requirement cannot be met, the sandwiches will be recategorized as chilled sandwiches and marked with an expiration date and time that does not exceed 60 hours after removal from the frozen environment. In addition, the requirements of (3)(*d*) through (*f*) below will be met.

(*d*) Commercially frozen sandwiches will be used within the manufacturer's stated shelf life. Shelf life for locally produced frozen sandwiches will be established by the IMA.

(*e*) When frozen sandwiches are tempered or refrigerated for service (for example, by placing them in a refrigerated vending machine), they will be treated as chilled sandwiches (see para (2)(*c*) above).

(*f*) Tempered or defrosted sandwiches will not be refrozen.

(3) *Type III*: Chilled sandwiches.

(*a*) These sandwiches will be prepared from chilled (45°F (7°C) or below) or frozen fillings. Exception is made for peanut butter, cheese spreads, and similar ingredients that cannot be spread if they are chilled.

(*b*) Meat, chicken, tuna fish, eggs, and other similar high protein salad fillings used in pre-prepared chilled sandwiches will be acidified to pH 4.5 or below. The sandwich producer or manufact-

urer will provide written laboratory results from the ingredient manufacturer documenting that ingredients comply with this requirement.

(*c*) Production scheduling will minimize the time that sandwich ingredients are at unsafe temperatures.

(*d*) Chilled sandwiches will be open dated with an expiration date and time that does not exceed 60 hours after production.

(*e*) Chilled sandwiches will be kept at a product temperature of 45°F (7°C) or below during storage, transport, and service. Sandwiches exceeding this temperature will be discarded.

(*f*) Chilled sandwiches will not be frozen.

Section V. FOOD DISPLAY AND SERVICE

2–26. Milk and Cream Dispensing

a. Milk and milk products for drinking purposes will be—

(1) Provided to the consumer in an unopened, commercially filled package not exceeding 1 pint in capacity, or

(2) Drawn by the consumer from a commercially filled container stored in a mechanically refrigerated bulk milk dispenser. Both the container and the bulk milk dispenser will meet applicable NSF standards (see app B). Where a bulk dispenser for milk and milk products is not available, the IMA may authorize use of commercially filled containers of not more than 1/2 gallon (2 liter) capacity as an emergency measure. Containers will be kept closed and maintained at safe temperatures (para 2–7).

NOTE

An exception is granted for use within Army child development services programs: Milk may be transferred from bulk milk dispensers, commercial gallon containers, or other approved commercial storage devices or containers to small serving pitchers. The pitchers will be covered and transported immediately to child activity rooms. All milk remaining in the serving pitchers at the end of the meal will be discarded. Serving pitchers are not to be used as storage containers.

b. Milk dispensing tubes will be cut diagonally approximately 1/2 inch (1.3 cm) on type A dispensers, and 1 inch (2.5 cm) on type B dispensers, from the base of the cutoff valve.

c. Cream or "half and half" will be provided in an individual service container, protected pour-type pitcher, or drawn from a refrigerated dispenser designed and approved for such service.

d. Nondairy creaming or whitening agents will be provided in an individual service container, protected pour-type pitcher, or drawn from a refrigerated dispenser that meets applicable NSF standards and is designed for such service.

e. Milk for carry-out service will be provided in individual cartons.

f. Bulk milk dispensers will be secured to the stand with the safety straps provided by the manufacturers to prevent a possible safety hazard.

2–27. Condiment Dispensing

a. Condiments, seasonings, and dressings for smorgasbord or salad bar use will be provided in individual packages, from dispensers, or from containers protected per paragraph 2–30.

b. Condiments, seasonings, and dressings provided for table or counter service will be individually portioned, except that catsup, mustard, steak, and other sauces may be served in the original, covered, pour-type container or other approved dispenser. Sugar for consumer use will be provided in individual packages or in pour-type dispensers.

c. Salad bar dressings not meeting the requirements of a non-PHF will be displayed under refrigeration and be discarded after 48 hours.

d. Condiments, seasonings, and dressings for outdoor use will be provided in individual packages only.

2–28. Ice Dispensing

Ice for consumer use will be dispensed only by employees with scoops, tongs, or other ice-dispensing utensils or through automatic self-service, ice-dispensing equipment. Use of glassware for scooping ice from bins is prohibited. Ice-dispensing utensils will be stored either on a clean dry surface, in a continuously flowing dipper well, in an approved clean sanitizing solution, or in the ice with the dispensing utensils' handles extended out of the ice. Between uses, ice-transfer receptacles will be stored in a way that protects them from contamination. Ice storage bins will be self-draining with an indirect waste connection. (For specific requirements for mobile food service, see para 7–5*c*.)

2–29. Dispensing Utensils

To avoid unnecessary manual contact with food, suitable dispensing utensils will be used by employees or provided to consumers who serve themselves. Separate dispensing utensils will be provided for each item served. Between uses during service, dispensing utensils will be—

a. Stored in the food with the dispensing utensil handle extended well out of the food; or

b. Stored clean, dry, and protected from contamination; or

c. Stored in a continuous flowing water dipper well.

2–30. Display Units

Enough hot and cold food display units will be available to maintain the required temperature of PHFs. Open food or drink placed on display in any type of food-service operation, including smorgasbords, buffets, and cafeterias, will be protected against contamination from consumer and other sources by easily cleanable counter-protector devices, cabinets, display cases, containers, sneeze-guards, or other effective protective equipment. Such protective equipment will effectively intercept a direct line between the consumer's mouth and any food.

a. Refrigerated display cases will be provided with an easily readable numerically scaled thermometer accurate to ±3°F (1.7°C). Display cases will be capable of maintaining an internal product temperature of 45°F (7°C) or below.

b. Heated display cases will be capable of maintaining a product temperature of 140°F (60°C) or above. Heated display cases will not be used to bring product temperature up to required holding temperatures. Food will be heated to above 140°F (60°C) before being placed in the display case.

c. Product temperatures of foods will be checked frequently during display.

d. Wrapped sandwiches will not be stored in direct contact with ice.

e. Wet display is prohibited (see glossary for definition of wet storage), except that head-on or gutted fish (not fillets) and sea food in shells may come in contact with ice in display cases.

Section VI. LEFTOVERS

2–31. Introduction

a. Leftovers are categorized as PHFs and non-PHFs. The major concern of this bulletin is the prevention of foodborne illness; therefore, primary emphasis is placed on the PHF category.

b. Foods retained as leftovers should be kept to a minimum through proper food service management, such as through use of small batch preparation, progressive cooking, and knowledge of diner preferences.

2–32. Re-serving Food

Individual portions of food once served to a consumer will not be retrieved for re-serving or otherwise reused except as provided below:

a. Unsliced, hardskinned fruits may be retained for reuse provided they are washed.

b. Unopened, commercially packaged, non-PHF (for example, packaged crackers and individually packaged condiments) may be retained for reuse.

2–33. Non-potentially Hazardous Foods

Non-PHFs may be retained as leftovers provided they were protected from contamination as provided by section V.

2–34. Potentially Hazardous Foods

a. Foods that have been creamed or handled a great amount (for example, hashes, most gravies and dressings, and creamed meats) and items that are highly perishable (for example, most seafood) will not be retained as leftovers.

b. PHFs to be retained as leftovers will meet the following criteria:

(1) Food has been held at safe temperatures.

(2) Food was protected against contamination during serving by use of sneezeguards and was served by authorized servers using proper serving utensils; or was individually wrapped or packaged. Nonpackaged or unwrapped PHFs offered to the customer for self service will not be retained as leftovers.

c. Hot items to be chilled will meet the requirements of paragraph 2–8*b*.

d. Leftover PHFs will be labeled as leftovers identified with DA Label 178 (Leftover—Use Within 24 Hours) (fig 2–2) showing date and time it was removed from service.

NOTE

This labeling is required only for leftover PHFs.

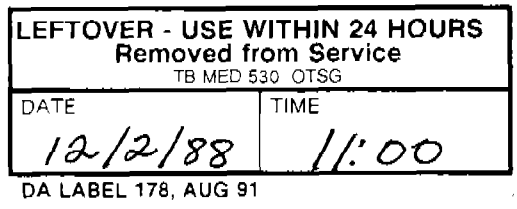

Figure 2–2. DA Label 178, Leftover—Use Within 24 Hours (Sample).

e. Leftover PHFs may be retained for 24 hours chilled (45°F (7°C) or below) or for 5 hours if maintained hot (140°F (60°C) or above).

f. Chilled leftover products intended to be reserved hot will be reheated to an internal temperature of 165°F (74°C).

g. Leftover PHFs may be reoffered for service once. The product remaining after that serving period will be discarded.

h. Freezing leftover PHFs is prohibited.

i. Leftover PHFs will not be mixed with fresh ingredients and held another 24 hours as leftovers.

Section VII. TRANSPORTATION

2–35. Food Protection During Transit

During transportation, food and utensils will be kept in covered containers or completely wrapped or packaged so as to be protected from contamination. Foods in original individual packages do not need to be overwrapped if the original package has not been torn or broken. During transportation, food will meet the requirements of this bulletin relating to food protection and food storage (see secs II and III, this chap).

2–36. Transporting Soiled Items

When soiled equipment or utensils are transported, such items will be transported in closed containers.

2–37. Use of Uncovered Vehicles

Tactical vehicles or commercial cargo trucks used for transporting rations from the supply source to the field kitchen or food preparation facility will be covered and cleaned per paragraph 2–38.

2–38. Unsanitary Vehicle Restrictions

A vehicle used for transporting trash, garbage, soiled linen, or other similar uses will not be used for transporting food or clean utensils unless it has been thoroughly cleaned with a hot water and detergent solution between uses. At no time will food or clean utensils be transported simultaneously with trash, garbage, or soiled linen on the same vehicle.

Section VIII. STORAGE AND USE OF POISONOUS AND TOXIC MATERIALS

2–39. Container Identification

Only those poisonous and toxic materials normally required to maintain the facility in a sanitary condition or to sanitize equipment and utensils will be present in any area used in connection with food service facilities. These materials will be prominently and distinctly labeled for easy identification and kept in their original containers. However, bulk detergents, sanitizers, and related cleaning or drying agents may be broken down into smaller, distinctly labeled containers.

2–40. Storage

All poisonous or toxic materials (that is, detergents, sanitizers, polishes) will be stored in cabinets or in a similar physically separated place used for no other purpose. To minimize contamination, poisonous or toxic materials will not be stored above food, food equipment, utensils, or single-service articles. This requirement does not prohibit the convenient availability of detergents or sanitizers at utensil or dishwashing stations.

2–41. Insecticides and Rodenticides

Insecticides and rodenticides will not be kept or used in a food service facility unless approved by the IMA.

2–42. Permissible Cleaners and Chemicals

Only those sanitizers, detergents, and other toxic chemicals that are listed in part 178, title 21, Code of Federal Regulations (21 CFR 178) will be on hand or used in any food service facility. A U.S. Environmental Protection Agency (EPA) registration number will be present on all sanitizer labels.

2–43. Materials Segregation

When not in use, poisonous and toxic materials will be segregated from food products and stored in a locked and labeled cabinet(s). Sanitizing and cleaning compounds will not be stored in the same cabinet or area of the room with any other poisonous materials.

2–44. Labeling

Poisonous and toxic materials will be used only per labeled instructions.

2–45. Phenolic Compounds

Phenolic compounds will not be used for sanitizing food service utensils or equipment.

Section IX. PERSONAL MEDICATIONS AND FIRST-AID SUPPLIES

2–46. Personal Medications

Personal medications will not be stored in food storage, preparation, or service areas.

2–47. Medical Supplies Storage

Unless authorized by the IMA, maintenance of first-aid supplies and medication such as bandaids, gauze, antiseptics, and pain relievers, such as aspirin, in a food service facility is prohibited.

a. Authorization may be made based on extenuating circumstances such as remoteness of the facility to medical treatment.

b. When authorized, first-aid supplies will be stored in a way that prevents them from contaminating food and food-contact surfaces, and in such a manner to prevent the first-aid supplies from being contaminated.

c. Signs will be conspicuously posted with emergency telephone numbers and first-aid procedures for choking. Posters showing first aid for choking (Heimlich Maneuver) can be obtained from your local American National Red Cross Chapter, or the National Restaurant Association, 1200 Seventeenth St., N.W., Washington, DC 20036–3097.

Section X. ATYPICAL FOOD SERVICE OERATIONS

2–48. Standards

Meat markets, delicatessen type stores, and retail food stores will meet standards described in applicable portions of this bulletin. Additional sanitary requirements for various establishments that prepare or provide food items to the Armed Forces are specified by military or Federal standards in AR 40–657/NAVSUPINST4355.4F/MCOP10110.31G.

2–49. Applying These Standards

Questions about these operations should be directed to Commander, U.S. Army Environmental Hygiene Agency, ATTN: HSHB–MI–S, APG, MD 21010–5422.

CHAPTER 3

FOOD SERVICE PERSONNEL

3–1. Introduction

a. Only qualified personnel as prescribed in paragraphs 3–3 and 3–6 are authorized to prepare foods.

b. Military personnel detailed by daily duty roster and food service attendants (contract civilian, local national, etc.) who are not fully qualified may, when authorized by the IMA, serve food and perform limited food preparation duties such as preliminary vegetable preparation.

c. Unauthorized personnel will be prohibited in the food preparation, storage, or equipment or utensil washing areas of a food service facility. Signs will be posted to this effect.

3–2. Employee Health

a. No person will work in a food service facility in any capacity unless cleared for specific duty by the IMA while—

(1) Infected with a disease in a communicable form that can be transmitted by foods or who is a carrier of organisms that cause such a disease; or

(2) Having a boil, an infected wound, or an acute respiratory infection.

b. Supervisors will inspect all personnel daily at the start of the work period. Persons who exhibit signs of illness to include skin disease, diarrheal illness (admitted or suspected), burns, boils, or cuts will be referred to the IMA for evaluation. Particular attention will be directed to—

(1) Food service attendants who are specifically authorized by the IMA to serve or otherwise handle food and sanitize equipment and utensils.

(2) Detailed military personnel.

c. Personnel referred for medical evaluation will provide their supervisors with a written statement signed by a physician delineating duty limitations, if any, or stating that the individual is fit for duty as a food service employee.

3–3. Medical Examinations

a. The IMA will determine the need for or extent of preemployment and periodic medical examinations. Also, based on local circumstances, the IMA may require medical examinations necessary to detect and control the spread of diseases through food. A written policy will be established and disseminated by the IMA. A copy of this policy will be forwarded to the major Army command (MACOM) surgeon.

b. Preemployment and periodic medical examinations of food service personnel within the continental United States (CONUS) are not normally required. Such examinations can give a false sense of security to employees and supervisory personnel. Emphasis and resources will be placed instead on training food service personnel in personal hygiene, food sanitation, and disease control.

c. Persons who have been absent from work because of any illness will be referred to the IMA for a determination as to fitness for duty prior to resuming work. Persons referred will be evaluated and if found fit will be provided a written clearance signed by a physician authorizing return to duty as a food service employee.

3–4. Personal Cleanliness

a. General. Employees will maintain a high degree of personal cleanliness and will conform to good hygienic practices during all working periods in the food service facility.

b. Handwashing. Personnel will thoroughly wash their hands and the exposed portions of their arms with soap and warm water before starting work, after using toilet facilities, using tobacco, between handling soiled surfaces (includes body parts such as hair, nose, mouth, ears, etc., and soiled clothing) and clean utensils and equipment, between handling raw and cooked foods, after performing custodial duties (including handling garbage or trash), and during work as often as necessary to keep them clean. Signs will be posted to this effect in latrines used by food service personnel.

c. Uniforms. All personnel working in a food service facility will wear a clean uniform daily. Except during field operations, white, pastel, or other light-colored uniforms that readily show accumulations of soil or dirt will be worn by all employees, including ware washers and permanent food service attendants. This does not apply to personnel while stocking canned, packaged, or otherwise fully protected foods or to checkout clerks in retail food stores. Military personnel detailed by daily roster to work as food service attendants and who are authorized on the serving line or in food preparation areas will wear clean, light-colored uniforms or wear clean, light-colored aprons over clean duty uniforms. Wearing of roundnecked "T" shirts as an outer garment is acceptable while performing custodial duties.

d. Jewelry. With the exception of plain wedding bands, emergency medical bracelets or necklaces,

food service personnel will not wear any jewelry such as bracelets, watches, rings, etc., that is likely to come into contact with food during preparation and handling.

e. Hair restraints. Effective hair restraints will be used by all personnel working in food service facilities. Hair restraints will effectively prevent hair from entering food or falling onto food-contact surfaces. Hair restraints will be kept clean. Determining the adequacy of such restraints is a command responsibility. Personnel with hair, including facial hair, that cannot be adequately restrained will be prohibited from food service operations.

f. Custodial duties. Personnel who prepare or serve food will not clean latrines, garbage cans, sewers, drains, ventilation hoods, grease traps, or perform similar custodial duties during the period of food preparation. This is not intended to diminish cooks' responsibilities to maintain "clean-as-you-go" procedures, or to prohibit personnel from performing custodial duties at the end of their shifts.

3-5. Employee Practices

a. Employees will consume food only in designated dining areas. An employee dining area will be located in an area where contamination of food and food service equipment or utensils will not occur. This requirement is not intended to prohibit recipe testing or consumption of drinking water. Recipe testing will be accomplished by the use of clean sanitized utensils. Portions withdrawn for testing will be discarded as food waste. Utensils used will be cleaned and sanitized before reuse.

b. Personnel will not use tobacco in any form while engaged in food preparation or service, or while in equipment and utensil washing or food preparation areas. An area should be designated where personnel are permitted to use tobacco. Personnel will not resume work after using tobacco without first washing their hands. Signs will be posted to this effect.

c. Personnel will keep their fingernails trimmed and clean.

d. Personnel will minimize hand contact with parts of tableware that will come into contact with food or the patrons' mouths.

3-6. Training

a. Applicability. All food service personnel will be instructed in the principles and practices of foodborne illness prevention and in first aid for choking.

b. Native language. Educational programs, signs, and other instructional or directive material will be developed and presented in the native language of the food service personnel.

c. Supervisors. Food service supervisors (military or civilian shift leaders, night baker or cook, food service managers, or anyone responsible for the direct supervision of food handlers) will complete or provide evidence of having completed a formal training program in food sanitation that meets the Food and Drug Administration Food Service Manager Training and Certification Program requirements listed below. The formal training program will be conducted by the IMA, with support provided by veterinary personnel and hospital dietitians, or any other resource approved by the IMA. Food service supervisors will maintain a certificate from the IMA or from an Office of The Surgeon General (OTSG) recognized organization such as the Educational Foundation of the National Restaurant Association (formerly the National Institute for Food Service Industry (NIFI)) or Educational Testing Service (ETS). (If an ETS certification examination is used, follow a formal course of instruction approved by the IMA.)

(1) Minimum course content will cover the following subject areas:

(*a*) Food (4 hours): foodborne disease; food protection.

(*b*) Facilities (2–4 hours): Sanitary—water and waste disposal, handwashing, plumbing; cleaning or sanitizing; nonfood supplies; construction and maintenance of physical facilities.

(*c*) Food Handlers (2–4 hours): Personal hygiene; food handling practices; operational problems.

(*d*) Management (4 hours): Self inspection; motivation; personnel training.

(*e*) Evaluation or Examination (1 hour).

(2) Training will stress the principles involved in prevention of foodborne illness, cutline the role of supervisors in training of other food service employees, and emphasize other areas of local concern (that is, quality assurance inspections by supervisory personnel).

d. Food service personnel other than supervisory personnel. All new food service employees will receive an introductory food sanitation training course. The IMA will provide technical guidance to food service supervisory personnel conducting the training, and also provide assistance, if requested, in the presentation of the new employee training classes. Ongoing training in food service sanitation will be provided to each food service employee. Scope of the ongoing training will be directed to the role of the individual in the prevention of foodborne illness. Ongoing training will be conducted by supervisory food service personnel using outlines approved by the IMA. Supervisors will maintain records of this training.

CHAPTER 4
EQUIPMENT AND UTENSILS

Section I. GENERAL STANDARDS

4–1. Requirements

a. All food service equipment and utensils used in a food service facility will meet applicable standards of the NSF (app B) and Underwriters Laboratories (UL), Inc., or other laboratory or national consensus standards acceptable to The Surgeon General (TSG). Equipment and utensils for which no applicable standards exist will meet the requirements of NSF *Basic Criteria C–2 for Special Equipment and Devices.* Requirements stipulated herein will be incorporated into appropriate specifications, contracts, and procurement documents for type classified, centrally or locally procured, leased and built-in-place food service equipment and utensils.

b. Offshore procurement of foreign manufactured food service equipment for use in overseas areas is authorized provided the equipment meets sanitation standards acceptable to TSG. The acceptability of the foreign food sanitation standards will be established by TSG. Contracting officers will contact HQDA (SGPS–PSP), 5109 Leesburg Pike, Falls Church, VA 22041–3258 and receive written approval prior to initiation of offshore procurement actions.

4–2. Compliance Measures

a. Compliance with NSF standards and criteria will be demonstrated by—

(1) Display of the NSF seal on the equipment and listing in the NSF annual listing *Food Service Equipment and Related Products, Components and Materials* for the year the equipment was manufactured; or

(2) Through NSF's one-time evaluation program; or

(3) Certification from a recognized independent testing laboratory, acceptable to TSG, stating that the equipment or utensils meet applicable standards. Acceptability of the testing laboratory by TSG will be obtained prior to awarding of any contract or procurement documents.

b. Compliance with UL standards will be demonstrated by—

(1) Testing or approval by UL.

(2) Certification by other independent testing laboratory acceptable to TSG that the equipment meets UL standards.

Section II. MATERIALS

4–3. Introduction

a. Multiuse equipment and utensils will be constructed, maintained, and repaired with safe materials, including finishing materials. Materials will be—

(1) Corrosion resistant and nonabsorbent.

(2) Smooth, easily cleanable, and durable under conditions of normal use.

b. Single-service articles will be made from clean, sanitary, and safe materials.

c. Equipment, utensils, and single-service articles will not impart odors, color, or taste, or otherwise contribute to the adulteration or contamination of food.

4–4. Solder

Solder, if used, will be composed of safe materials, be corrosion resistant, and not leach out any toxic materials under normal contact with food or cleaning or sanitizing agents.

4–5. Wood

Hard maple or equivalent nonabsorbent materials that meet the general requirements set forth in paragraph 4–3, and that are listed by NSF may be used for cutting blocks, cutting boards, and baker's tables. Wood may also be used for salad bowls, provided the requirements of paragraph 4–3 are met, and for single-service articles such as chop sticks, stirrers, or individual ice cream spoons. The use of wood as a food-contact surface under other circumstances is prohibited.

4–6. Plastics

Use of safe and nonabsorbent plastics, rubber, or rubber-like materials are permitted for multiuse equipment provided the materials are—

a. Resistant under normal use to scratching, scoring, decomposition, crazing, chipping, and distortion.

b. Of sufficient weight and thickness to permit cleaning and sanitizing by normal ware-washing methods.

c. NSF listed and meet or exceed the other requirements set forth in paragraph 4–3. The use of these materials as a food-contact surface under other circumstances is prohibited.

4–7. Mollusk and Crustacea Shells

Mollusk, crustacea, and similar shells with the shellfish intact (as received in the natural state) may be used only once as a serving container. Further reuse of such shells for food service is prohibited.

4–8. Applying Paint

Application of paint or other use of paint on a food-contact surface is prohibited.

4–9. Single Service

Reuse of single-service articles is prohibited.

Section III. SEALING COMPOUNDS

4–10. Requirements

a. Sealing compounds will provide a water and vermin-tight seal.

b. All sealing compounds will—

(1) Be sufficiently pliable for ease of application, yet be adequately firm, after application, so as not to be gummy or sticky.

(2) Be nonshrinking and will retain reasonable elasticity after installation.

4–11. Uses

a. Sealing compounds used in the installation of refrigeration equipment will be capable of withstanding alternating room temperatures and refrigerator temperatures without cracking or unsealing.

b. Sealing compounds used in the installation of cooking and warming equipment will be capable of withstanding alternating room temperatures and heating temperatures without cracking or unsealing.

c. Sealing compounds used on food-contact surfaces will be NSF or U.S. Department of Agriculture (USDA) listed.

d. Materials or equipment requiring use of sealing compounds will be physically secured before such compounds are applied.

e. Sealants will conform to the basic requirements for materials for the zone of use including toxicity, smoothness, cleanability, and odor.

f. Sealants will not be used to fill open spaces or voids that result due to improper design or fabrication.

Section IV. DESIGN AND FABRICATION

4–12. Introduction

All equipment and utensils, including plasticware, will be designed and fabricated for durability under conditions of normal use. They will be resistant to denting, buckling, pitting, chipping, and grazing.

a. Food-contact surfaces will be—

(1) Easily cleanable.

(2) Smooth and free of breaks, open seams, cracks, chips, pits, and similar imperfections.

(3) Free of difficult-to-clean internal corners and crevices. Cast iron may be used as a food-contact surface only if the surface is heated, such as in grills, griddle tops, and skillets. Threads will be designed to facilitate cleaning; ordinary "V" type threads are prohibited in food-contact surfaces, except that, in equipment such as ice makers or hot oil cooking equipment and hot oil filtering systems, use of such threads will be minimized.

b. Equipment containing bearings and gears requiring unsafe lubricants will be designed and constructed so that the lubricant cannot leak, drip, or be forced into food or onto food-contact surfaces. For those pieces of equipment that cannot be designed to prevent contact of lubricants with food or food-contact surfaces, only safe lubricants listed in USDA Pub 1419 will be used.

c. Tubing used to convey beverages or beverage ingredients to dispensing heads may be in contact with stored ice, provided that such tubing is—

(1) Fabricated from safe materials.

(2) Grommeted at entry and exit points to minimize moisture (condensation) from entering the ice machine or the ice storage bin.

(3) Kept clean.

Drainage or drainage tubes from dispensing units will not pass through the ice machine or the ice storage bin. Drainage tubes will be cleaned or replaced on a regular basis to prevent contaminant buildup on the inside tubing walls.

d. Sinks and drain boards will be self-draining.

e. Bulk milk dispensers, multiservice shipping and dispenser containers, and dispensing tubes will conform to the provisions of MIL STD–175.

4–13. Accessibility

Unless designed by the manufacturer and approved by the IMA for in-place cleaning, all food-contact surfaces will be accessible for cleaning and inspection—

a. Without being disassembled; or

b. By disassembling without the use of tools; or

c. By easy disassembling with the use of only simple tools such as pliers, a screwdriver, or an open-end wrench.

4–14. In-place Cleaning

Equipment intended for in-place cleaning will be designed and fabricated so that—

a. Cleaning and sanitizing solutions can be circulated throughout a fixed system using an effective, approved, cleaning and sanitizing regimen.

b. Cleaning and sanitizing solutions can contact all interior food-contact surfaces.

c. The system will be self-draining or capable of being completely evacuated.

4–15. Pressure Spray Cleaning

Fixed equipment designed and fabricated to be cleaned and sanitized by pressure spray methods will—

a. Have sealed electrical wiring, switches, and connections.

b. Be approved by the UL or other independent testing laboratory acceptable to TSG for pressure spray cleaning.

4–16. Thermometers

Equipment thermometers designed for immersion into food or cooking media will be of metal stem-type construction, numerically scaled and accurate to ±2°F (1°C) and be easily calibrated. Mercury or other liquid-in-glass thermometers will not be used in contact with food or food-contact surfaces, except for metal shielded maximum registering thermometers used to check dishwashing machine operations.

4–17. Nonfood-contact Surfaces

Surfaces of equipment not intended for contact with food, but exposed to splash or food debris or otherwise require frequent cleaning, will be—

a. Designed and fabricated to be smooth, washable, free of unnecessary ledges, projections, or crevices, and readily accessible for cleaning.

b. Of such material and in such repair to be easily maintained in a clean and sanitary condition.

4–18. Walk-in Freezers and Walk-in Refrigerators

a. All parts of the floor of each walk-in freezer or walk-in refrigerator, except prefabricated units, will be graded to drain to the outside through a wastepipe, doorway, or other opening that is indirectly connected to a drain and protected against the entrance of vermin.

b. Floor drains may be provided inside of walk-in prefabricated refrigerators, but not inside of prefabricated freezers. When floor drains are provided inside of walk-in prefabricated refrigerators, they will be of the indirect type to minimize sewage back-up and will be trapped to minimize passage of sewer gas.

c. Floor drains will be provided outside of walk-in prefabricated refrigerators and freezers to receive condensate from evaporator coils. The floor drains should be located to minimize the length of the condensate lines from the evaporator coils.

Section V. EQUIPMENT INSTALLATION AND LOCATION

4–19. Introduction

Food service equipment will be installed using guidance provided in NSF's *Manual on Sanitation Aspects of Installation of Food Service Equipment,* and the specific requirements presented in this bulletin.

4–20. Exposed Piping

No food service equipment will be located under exposed or unprotected sewer or water lines, open stairwells, or other sources of potential contamination. This requirement does not minimize storage of food in areas served by automatic fire protection sprinkler heads provided the requirements of National Fire Protection Association (NFPA) Standard 13 are followed.

4–21. Table-mounted Equipment

a. Equipment that is placed on tables or counters, unless portable, will be—

(1) Sealed to the table or counter, or elevated on legs to provide at least a 4–inch (10 cm) clearance between the table or counter and equipment; or

(2) Installed to facilitate the cleaning of the equipment and adjacent areas.

b. Portable equipment will be small and light enough (65–70 pounds) to permit its being easily moved by one person.

4–22. Floor-mounted Equipment

Floor-mounted equipment, unless portable or easily moveable, will be—

a. Sealed to the floor; or

b. Installed on a raised platform of concrete or other smooth masonry in a way that meets all the requirements for sealing or floor clearance; or

c. Elevated on legs to provide at least a 6–inch (15 cm) clearance between the floor and equipment (exception: vertically-mounted floor mixers may be elevated so as to provide at least a 4–inch (10 cm) clearance between the floor and equipment if no part of the floor under the item is more than 6 inches (15 cm) reach for cleaning access); or

d. Installed to permit access to areas requiring cleaning; or

e. Sealed to adjoining equipment or adjacent walls or ceilings unless sufficient space is provided for easy cleaning between, behind, and above each unit of fixed equipment (see NSF's *Manual on Sanitation Aspects of Installation of Food Service Equipment*).

4–23. Aisles and Working Spaces

Aisles and working spaces between units of equipment and walls will be unobstructed and of sufficient width to permit employees to perform their duties readily without contamination of food or food-contact surfaces by clothing or other personal contact. All easily moveable storage equipment such as pallets, racks, and dollies will be positioned to provide accessibility to working areas.

Section VI. EQUIPMENT AND UTENSIL CLEANING AND SANITIZING

4–24. Cleaning Frequency

a. Tableware will be washed, rinsed, and sanitized after each use.

b. Kitchenware and food-contact surfaces of equipment and other utensils will be washed, rinsed, and sanitized after each period of use and after any interruption of processing which would allow the multiplication of bacteria to harmful quantities. Items of significance include cutting boards, knives, slicers, mixers, grinders, food-preparation sinks, and frozen dessert machines.

c. Where equipment and utensils are used for the preparation of PHFs on a continuous or production-line basis, utensils and food-contact surfaces of equipment will be washed, rinsed, and sanitized at intervals throughout the work period. This schedule will be approved by the IMA based on food temperature, type of food, and amount of food debris accumulation. A copy of the approved cleaning schedule will be posted at the worksite.

d. Equipment and food-contact surfaces that have touched any raw food product must be cleaned and sanitized thoroughly before touching any other food.

e. The food-contact surfaces of grills, griddles, and similar cooking devices, and the cavities and door seals of microwave ovens will be cleaned at least once per operating shift. This requirement does not apply to equipment protected from contamination and not used or otherwise soiled. The food-contact surfaces of all cooking equipment will be kept free of encrusted grease, food debris, and other accumulated soil.

f. Deep fat fryers will be drained, the fat strained, and internal surfaces wiped clean of soil and debris at the end of each day's use. External surfaces should be cleaned daily. Deep fat fryers will be covered with a tight closing lid when not in use.

g. Nonfood-contact surfaces of equipment will be cleaned as often as necessary to keep the equipment free of accumulation of dust, dirt, food particles, and other debris.

4–25. Wiping Cloths

Sponges and sponge-type cloths are prohibited for use in food service facilities. Single-use paper towels or disposable cloths are preferred to reusable wiping cloths. If reusable wiping cloths are used, the following measures are required:

a. Cloths used for wiping food spills on tableware, such as plates or bowls being served to the consumer, will be clean, dry, and used for no other purpose.

b. Moist clean cloths will be used for wiping food spills on kitchenware and food-contact surfaces of equipment and for other purposes. These cloths will be rinsed frequently in a sanitizing solution, and will be stored in a sanitizing solution between uses.

c. Cloths used for cleaning nonfood-contact surfaces of equipment such as counters, dining table tops, and shelves will be kept clean and rinsed as specified in paragraph *b*, and used for no other purpose.

4–26. Steel Wool

Steel wool and steel wool pads will not be used for cleaning food-contact surfaces in any food service operation within the U.S. Army. Use of woven brass or plastic pads is allowed for scrubbing pots and pans provided the pads are cleaned and sanitized after each cleanup period.

4–27. Detergents and Sanitizers

Detergents and sanitizers will be used per the manufacturer's label instructions and only for those applications specified on the label. Detergents and sanitizers will be listed in 21 CFR 178 as approved for the intended use. Sanitizers used will be listed as not requiring a potable water rinse and also be registered with the EPA for food service use.

4–28. Manual Cleaning and Sanitizing

Guidance on manual cleaning and sanitizing is contained in MIL–HDBK–740. MIL–HDBK–740 is a general reference. Disregard pages 1 through 3, and supplement the guidance given with FM 10–23. Where conflicts between instructions in

MIL–HDBK–740 and this bulletin exist, this bulletin will be followed.

a. For manual washing, rinsing, and sanitizing of utensils and equipment, a sink with not fewer than three compartments will be provided and used. Sink compartments will be large enough to permit the accommodation of the equipment and utensils. In new construction or renovation, each compartment of the sink will be individually supplied with adequate hot and cold potable running water.

b. Fixed equipment and utensils, and equipment too large to be cleaned in sink compartments, will be preflushed or prescraped, washed with hot detergent solution, rinsed, and sanitized per paragraph *e* below.

c. Drainboards or easily movable dish tables of adequate size will be—

(1) Provided for proper handling of soiled utensils prior to washing and for cleaned utensils following sanitizing.

(2) Located so not to interfere with the proper use of the dishwashing facilities.

d. Except for fixed equipment and utensils too large to be cleaned in sink compartments, manual washing, rinsing, and sanitizing will be conducted in the following sequence:

(1) Sinks will be cleaned prior to use.

(2) Equipment and utensils will be preflushed or prescraped and, when necessary, presoaked to remove gross food particles and soil. The preflush water temperature should not exceed 80°F (27°C).

(3) Equipment and utensils will be thoroughly washed in the first compartment with a detergent solution that is kept clean and has a water temperature between 110–120°F (43–49°C).

(4) Equipment and utensils will be rinsed free of detergent and abrasives with hot (120–140°F) (49–60°C) clean water in the second compartment.

(5) Equipment and utensils will be sanitized in the third compartment according to one of the methods outlined in paragraph *e* below.

e. The food-contact surfaces of all equipment and utensils will be sanitized by—

(1) Immersion for at least 1/2 minute in clean, hot water at a temperature of at least 170°F (77°C); or

(2) Immersion for at least 1 minute in a clean solution containing at least 50 ppm of available chlorine [1] as a hypochlorite at a temperature of at least 75°F (24°C), but not more than 110°F (43°C); or

(3) Immersion for at least 1 minute in a clean solution containing at least 12.5 ppm of available iodine [2] and having a pH not higher than 5.0 at a temperature of at least 75°F (24°C), but not more than 110°F (43°C); or

(4) Immersion in a clean solution containing any other chemical sanitizing agent allowed under 21 CFR 178.1010 that provides the equivalent bactericidal effect of a solution containing at least 50 ppm of available chlorine as a hypochlorite at a temperature of at least 75°F (24°C) for 1 minute (certain chemical disinfectants have maximum safe use temperatures noted on label instructions that will be followed); or

(5) Treatment with steam free from materials or additives other than those specified in 21 CFR 173.310 in the case of equipment too large to sanitize by immersion, but in which steam can be confined; or

(6) Rinsing, spraying, or swabbing the equipment or utensil with a chemical sanitizing solution of at least twice the strength required for that solution when used as an immersion sanitizer per (2), (3), or (4) above.

f. When hot water is used for sanitizing, the following facilities will be provided and used:

(1) An integral heating device or fixture installed in, on, or under the sanitizing compartment of the sink capable of maintaining the water at a temperature of at least 170°F (77°C).

(2) A numerically scaled indicating thermometer, accurate to +3°F (1.7°C), easily calibrated, convenient to the sink for frequent checks of water temperature.

(3) Dish baskets of such size and design to permit complete immersion of the tableware, kitchenware, and equipment in the hot water.

g. When chemicals are used for sanitizing, they will be used per labeled instructions and will not have concentrations higher than the maximum permitted under 21 CFR 178.1010. A test kit or other device that accurately measures the ppm concentration of the solution will be on hand at the facility and used by the food service personnel to monitor the sanitizer concentration.

4–29. Mechanical Cleaning and Sanitizing

Basic guidance on mechanical cleaning and sanitizing is contained in MIL–HDBK–740, and NSF pamphlet, *Recommended Field Evaluation Procedures for Spray-Type Dishwashing Machines.*

a. Cleaning and sanitizing may be accomplished by use of spray-type or immersion dishwashing

[1] One tbsp (0.5 oz) of household type chlorine bleach in 4 gallons of water provides a starting solution of approximately 50 ppm available chlorine. When chlorine bleach is used as a sanitizer, the concentration of available chlorine will be checked frequently with a test kit or chlorine test paper.

[2] Iodine solutions are preferred because of lower volatility, and visible evidence of presence of the active ingredient in solution. (Iodine concentration test strips or papers are available from commerical sources.)

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machines, or by any other type of machine or device that meets the NSF standards for mechanical dish or pot and pan washing equipment. Local modification of such equipment is prohibited because it may invalidate manufacturers' warranty and NSF listing. Machines and devices will be operated per manufacturer's instructions, and utensils and equipment placed in the machine will be exposed to all dishwashing cycles. Automatic detergent dispensers, wetting agent dispensers, and liquid sanitizer injectors, where provided, will meet the requirements of NSF Standard 29 and be properly installed and maintained.

b. The pressure of the final rinse water supplied to spray-type dishwashing machines will be not less than 15 nor more than 25 pounds per square inch measured in the water line immediately adjacent to the final rinse control valve. A 1/4–inch iron pipe size (IPS) valve will be provided immediately upstream from the final rinse control valve to permit checking the flow pressure of the final rinse water by Directorate of Engineering and Housing personnel.

c. Machine or water line-mounted numerically scaled indicating thermometers, accurate to ±3°F (1.7°C), and easily calibrated, will be provided to indicate the temperature of the water in each tank of the machine and the temperature of the final rinse water as it enters the manifold.

d. Checking temperatures in dishwashing machines will be accomplished using the guidelines contained in NSF Standard 3 and NSF pamphlet *Recommended Field Evaluation Procedures for Spray-Type Dishwashing Machines.*

e. Rinse water tanks will be protected by baffles, curtains, or other effective means to minimize the entry of wash water into the rinse water. Conveyors in dishwashing machines will be accurately timed to assure proper exposure time in wash and rinse cycles per manufacturers' specifications listed on the machine data plate.

f. Drainboards will be provided and be of adequate size for the proper handling of soiled utensils prior to washing and for drying of cleaned utensils after sanitizing.

g. Equipment and utensils will be flushed or scraped and, when necessary, soaked to remove gross food particles and soil prior to being washed in a dishwashing machine unless a prewash cycle is a part of the dishwashing machine operation. Equipment and utensils will be placed in racks, trays, or baskets, or on conveyors in a way that food-contact surfaces are exposed to the unobstructed application of detergent wash and clean rinse waters and that permits free draining.

h. Machines using chemicals for sanitizing may be used provided that they meet requirements of NSF Standard 3 for chemical sanitizing, and—

(1) The temperature of the wash water is not less than 120°F (49°C).

(2) The wash water is kept clean.

(3) Chemicals added for sanitizing purposes are automatically dispensed and an alarm system is provided to indicate that the chemical feed has been interrupted.

(4) Utensils and equipment are exposed to the final chemical sanitizing rinse per the manufacturers' specifications for time and concentration as listed on the machine data plate.

(5) The chemical sanitizing rinse water temperature is maintained within the temperature range specified by the machine's manufacturer.

(6) Chemical sanitizers used will meet the requirements of 21 CFR 178.1010 and be approved by the manufacturer for use with the machine.

(7) A test kit or other device that accurately measures the ppm concentration of the sanitizing solution will be available and used.

i. Machines using hot water for sanitizing may be used provided they meet applicable NSF standards, and the wash water and pumped rinse water are kept clean and maintained at the temperatures listed in NSF Standard 3, as indicated on the machine data plate, or as listed in the NSF annual listing, *Food Service Equipment and Related Products, Components and Materials.*

j. All dishwashing machines will be thoroughly cleaned at least daily and will be operated and serviced as specified by the manufacturer.

4–30. Drying

After sanitizing, all equipment and utensils will be completely air dried. Appropriate drying area will be provided for the racks coming out of the dishwashing machine to permit air drying and to prevent recontamination of the clean items. The use of dish towels is prohibited.

4–31. Emergency Procedures

When requirements for washing and sanitizing utensils as specified in this bulletin cannot be met, single-service utensils will be used. An adequate supply of liquid concentrate chemical sanitizers meeting the provisions of 21 CFR 178.1010 will be maintained at all food service facilities to meet chemical sanitizing requirements and serve as a backup sanitizing system where hot water is used as the primary sanitizing system. Commercially available products that are EPA-registered and labeled for use on food-contact surfaces will be procured to meet this requirement in garrison-type operations. Because of increased costs and limited shelf-life when compared with liquid commercial

concentrate products, Disinfectant, Food Service (NSN 6840–00–810–6396) should be used only for field operations. All sanitizers and disinfectants will be used per labeled instructions.

Section VII. EQUIPMENT AND UTENSIL HANDLING AND STORAGE

4–32. Handling

Cleaned and sanitized equipment and utensils will be handled in such a manner that protects them from contamination. Spoons, knives, and forks will be touched only by their handles. Cups, glasses, bowls, plates, and similar items will be handled without skin contact with inside surfaces or surfaces that contact the user's mouth.

4–33. Storage

a. Cleaned and sanitized utensils and equipment will be stored at least 6 inches (15 cm) above the floor in a clean, dry location in a way that protects them from splash, dust, and other possible sources of contamination. The food-contact surfaces of fixed equipment will also be protected from contamination. Equipment and utensils will not be placed under exposed sewer lines or water lines, except for automatic fire protection sprinkler heads.

b. Utensils will be air dried before being stored or will be stored in a self-draining position.

c. Glasses and cups will be stored inverted. Other stored utensils, plates, saucers, and bowls will be covered or inverted to protect them from recontamination. Facilities for the storage of knives, forks, and spoons will be designed and used to present the handle to the employee or consumer. Unless clean tableware is prewrapped, holders for knives, forks, and spoons at self-service locations will protect these articles from recontamination and present the handle of the utensil to the consumer.

4–34. Single-service Articles

a. Single-service articles will be stored at least 6 inches (15 cm) above the floor in closed cartons or containers that protect them from contamination.

b. Single-service articles will be handled and dispensed in a manner that prevents contamination of surfaces that may come in contact with food.

c. Single-service knives, forks, and spoons packaged in bulk will be inserted into holders or be wrapped by employees who have washed their hands immediately prior to sorting or wrapping the utensils. Unless single-service knives, forks, and spoons are prewrapped or prepackaged, holders will be provided to protect these items from contamination.

d. Straws will be individually packaged or will be dispensed in a sanitary manner.

e. Single-service articles will not be reused.

4–35. Prohibited Storage Area

The storage of food service equipment, utensils, or single-service articles in toilet rooms, vestibules, or utility rooms is prohibited.

Section VIII. MAINTENANCE AND REPLACEMENT

4–36. Requirements

a. Food service equipment will be maintained and replaced per TM 10–415 and manufacturer's guidance. Equipment will be replaced at the interval specified in applicable supply bulletins to facilitate continued optimal service or when continued use of such equipment is deemed by the IMA to be hazardous to health.

b. Food service utensils, including tableware, will be replaced when chipped, cracked, gouged or broken, or when continued use of such utensils is deemed by the IMA to be hazardous to health.

c. Existing serviceable non-NSF listed equipment that does not present a public health hazard may be authorized by the IMA for continued use.

4–37. Standards

All new equipment and utensils will meet NSF standards (para 4–1).

CHAPTER 5

SANITARY FACILITIES AND CONTROLS

Section I. WATER SUPPLY

5–1. Introduction

Sufficient potable water will be provided at each food service facility and meet requirements of TB MED 576 for fixed facilities or requirements of TB MED 577 for field operations.

5–2. Culinary Purposes

Only potable water will be used for culinary purposes. Except under conditions of field food service operations or exercises, adequate quantities of both hot and cold running water under pressure will be provided in all areas where food is prepared or where equipment, utensils, or containers are washed.

5–3. Surveillance

Potable water at fixed food service facilities will be tested per TB MED 576. Field water requirements are specified in TB MED 577.

5–4. Transportation

All potable water not provided directly by pipe from the source to fixed food service establishments will be transported in a bulk water transport system and will be delivered to a closed-water system. Both of these systems will be constructed and operated to protect the water from contamination.

a. Water trailers and bulk water transport systems supporting food service operations will be inspected by the IMA for cleanliness, integrity, and proper maintenance. A copy of the inspection report will be maintained by the user.

b. Chlorine residuals will be checked per FM 21–10–1. The required chlorine residual will be specified by the IMA.

5–5. Bottled Water

Bottled and packaged potable water will be obtained only from an approved source and will be handled and stored so that it is protected from contamination. Bottled and packaged potable water will be dispensed from the original container only.

5–6. Water Under Pressure

At fixed facilities, water will be provided at the required temperature and pressure to meet operational requirements.

a. At existing facilities using hot water for sanitizing, the minimum acceptable water temperature for input water to booster heaters and under the sink heaters is 140°F (60°C).

b. At new facilities or renovations, the capacity of booster heaters and under the sink heaters will be based upon input water temperatures to ensure meeting public health requirements.

Section II. STEAM

5–7. Authorized Use

a. Steam used for cleaning or disinfecting food-contact surfaces will be free from any materials or additives other than those additives in the concentration allowed in 21 CFR 173.310.

b. Use of heat exchange-type steam generator units that produce steam from potable water without the use of boiler additives is authorized.

5–8. Prohibited Use

a. Direct, live-steam cooking of foods with steam generated from a central or building boiler is prohibited because of the difficulty and costs in evaluating steam additive levels.

b. Direct, live-steam injection to heat sanitizing water in hand dishwashing operations is prohibited due to safety reasons.

Section III. SEWAGE

5–9. Approved Disposal Systems

All sewage, including liquid waste from food processing and cleaning, will be disposed of through a properly functioning sanitary sewage disposal system.

5–10. Prohibited Disposal Systems

Nonwater-carriage sewage disposal systems are prohibited for fixed food service facilities, but may be authorized by the IMA for use in conjunction with temporary food service establishments or field food service operations.

Section IV. PLUMBING

5–11. Introduction

Plumbing will be sized, installed, maintained, and operated per the applicable plumbing code required by Office, Chief of Engineers (OCE), *Architectural and Engineering Instructions Design Criteria*, and TM 5–810–5/AFM 88–8.

5–12. Cross-connection

There will be no cross-connection between the potable water supply and any nonpotable water supply, or any other source of pollution that might contaminate the potable water supply.

5–13. Back Syphon Prevention

a. The potable water system will be installed to minimize the possibility of backflow. Devices will be installed to protect against backflow and back siphonage at all fixtures and equipment where an air gap at least twice the diameter of the water supply inlet is not provided between the water supply inlet and the fixture's flood level rim.

b. Except for properly trapped open sinks, there will be no direct connection between the sewage system and any drains originating from equipment in which food, portable equipment, or utensils are placed. When a dishwashing machine is located within 5 feet of a trapped floor drain, the dishwasher waste outlet may be connected directly on the inlet side of a properly vented floor drain trap when permitted by applicable plumbing code.

c. Bar and fountain sink traps will be vented. Exception: When sinks in bars, soda fountains, and counters are located so that traps serving such sinks cannot be vented, the sink drains will discharge through an air gap or air break into a floor drain, sink, or hopper that is properly trapped and vented.

d. A hose will not be attached to a faucet unless backflow prevention is provided. (Work orders will be initiated to provide backflow prevention where required.)

5–14. Grease Traps

Grease traps will be located as to be easily accessible for servicing. In new construction or renovation, grease traps will be external to the building unless approved by IMA design review.

5–15. Food-waste Grinders

a. Food-waste grinders will be—

(1) Designed, installed, and maintained per current American Society of Sanitary Engineers (ASSE) standards and applicable plumbing code.

(2) Provided with an adequate supply of water at a sufficient flow rate to ensure proper functioning of the unit.

(3) Trapped separately from any other fixtures or sink compartments.

(4) Easily cleanable and will be kept clean.

b. Food-waste grinders will not be connected to discharge through a grease trap or interceptor.

5–16. Floor Drains

See paragraph 6–6.

Section V. TOILET FACILITIES

5–17. Installation

a. Adequate toilet facilities, as prescribed by 29 CFR 1910.141 and TM 5–810–5/AFM 88–8, will be provided at each food service facility. Toilets will be conveniently located and accessible for use by all food service personnel.

b. Except for carryout or stand-up type operations, adequate, convenient toilet facilities will be provided for patrons.

c. All plans for new construction and renovation of existing facilities, except for AAFES fast food facilities, will include separate toilets for patrons and staff to the maximum extent practicable.

5–18. Design

Toilets and urinals will be constructed and installed to be easily cleanable. Toilet seats will be made of smooth and nonabsorbent material.

5–19. Rooms

Doors to all toilet rooms will be of tight-fitting, self-closing, vermin-proof construction. Toilet facilities will not open directly into any area where food is stored, prepared or served or into utensil washing areas. Wall and floor space to a point 1 foot in front of the urinal lip and 4 feet above the floor, and at least 1 foot to each side of the urinal, will be waterproofed with a smooth, readily cleanable, nonabsorbent material.

5–20. Fixtures

Toilet facilities, including rooms and fixtures, will be kept clean and in good repair. Adequate supplies of hand soap and paper towels will be provided.

5–21. Signs

Signs will be conspicuously posted directing all personnel to wash their hands after using the toilet. Multilingual signs will be provided when appropriate.

5–22. Ventilation

a. In existing construction, mechanical or natural ventilation will be provided to eliminate irritants and objectionable odors.

b. In new construction, mechanical exhaust ventilation exhausting to the outdoors will be provided. Mechanical ventilation systems will be designed to provide at least 10 air changes per hour.

Section VI. HANDWASHING FACILITIES

5–23. Introduction

All food service facilities will be provided with adequate conveniently located lavatory facilities for food service personnel. Separate patron facilities will be provided to the maximum extent practicable.

5–24. Installation

Lavatories for food service personnel will be located throughout food preparation areas, behind or adjacent to serving areas, within utensil washing areas, and within toilet rooms or vestibules to permit convenient and expeditious use by all personnel at their work stations. Sinks used for food preparation and washing of equipment and utensils will not be used for handwashing.

5–25. Faucets and Supplies

a. Each lavatory will be provided with hot and cold water tempered by means of a mixing valve or combination faucet, and hand-cleaning soap or detergent. In new or renovated facilities, blade-type, wrist-operated faucets and detergent dispensers should be provided.

b. A supply of disposable towels or commercially laundered roller towels will be provided at each lavatory. Warm air hand dryers may be substituted for disposable or roller towels at lavatories that are used solely by patrons. Warm air hand dryers will not be the sole means of hand drying at employee lavatories. Waste containers will be provided.

Section VII. GARBAGE AND REFUSE

5–26. Containers

a. Garbage and refuse containers (20–30 gallon cans, dumpsters, compactors, and compactor systems) will be nonabsorbent, leak-proof, easily cleanable, and insect– and rodent–proof.

(1) Containers used in food preparation and utensil washing areas will be kept covered when not in use. To reduce contamination of the food handlers' hands, the lids should be kept off indoor garbage or refuse containers while they are being used.

(2) Containers stored outside the establishment will be provided with tight-fitting lids, doors, or covers; and kept covered. In containers designed with drains, drain plugs will be in place at all times, except during cleaning.

b. There will be sufficient containers to hold all garbage and refuse between pickup periods.

c. Soiled containers, dumpsters, and compactors will be cleaned at a frequency established by the IMA. A suitable cleaning area will be provided for mop and garbage can cleaning. Hot, high-pressure water and detergent soap will be used to clean the items. Dumpsters will be cleaned in-place using high-pressure spray with a self-contained vacuum residue collector or removed to a central location for cleaning if not located on a hardstand with washdown and drainage capabilities.

d. Compactor-type trash units will be located on concrete slabs that have drains and be located outside the facilities and adjacent to access doors.

e. Bulk collection dumpsters will be located in an area adjacent to the receiving area, but no closer than 50 feet from the facility entrance doors.

5–27. Storage

a. Garbage and refuse will be stored in vermin-proof containers. Plastic or wet-strength paper bags will be tightly sealed before being placed in outside storage areas or dumpsters. Outside storage of unprotected plastic bags, wet-strength paper bags, or baled units containing garbage or refuse is prohibited. Cardboard or other packaging material not containing garbage or food wastes does not need to be stored in covered containers. Cardboard boxes should be broken down prior to placement in dumpsters to reduce volume.

b. When provided, internal garbage or refuse storage rooms will be—

(1) Constructed of easily cleanable, nonabsorbent, washable materials.

(2) Kept clean.

(3) Insect and rodent-proof.

(4) Large enough to store the garbage and refuse between pickup periods.

c. Where outside storage areas or enclosures are provided, such areas will be large enough to store

the garbage and refuse containers and will be kept clean.

d. Garbage and refuse containers, dumpsters, and compactor systems located outdoors will be stored on or above a smooth surface of nonabsorbent material such as concrete or machine-laid asphalt that is kept clean and maintained in good repair.

5–28. Collection and Disposal

Garbage and refuse will be collected at a frequency approved by the IMA. Spillage resulting from collection will be promptly cleaned up by the collection vehicle operator. Specific collection requirements for waste disposal are contained in AR 420–47 and TM 5–634.

Section VIII. INTEGRATED PEST MANAGEMENT—FOOD SERVICE

5–29. Introduction

Because of the significant potential for contamination and economic losses resulting from pest infestations of food and food stuffs, effective measures will be used to prevent pests from gaining access to and harboring in food service facilities, and to detect infestations rapidly in order to limit their spread. Integrated pest management (IPM) principles will be used in selecting and recommending pest prevention and control measures, both nonchemical (to include sanitation, harborage reduction and exclusion) and chemical control techniques, as needed, but emphasizing sanitation, exclusion, and other nonchemical measures. See AR 40–5, TM 5–632, and USAEHA TG 102 for additional guidance. The success of IPM food service will be dependent on the communication and cooperation among food service, medical, veterinary, and pest management personnel.

5–30. Structural Design

During design review, emphasis will be placed on identifying areas that could lead to the possible entrance and harborage of pests.

5–31. Surveillance

a. The IMA will be responsible for pest surveillance of food service facilities and operations.

b. The results of surveillance will be recorded, maintained on file, and reported to pest management or contract personnel. Appropriate nonchemical and chemical control methods will be recommended to dining facility personnel. Where nonchemical IPM methods have failed to adequately manage pest populations, chemical control may be used as a supplement. However, chemical control will only be used in conjunction with nonchemical control measures.

5–32. Stock Handling Practices

a. Stock rotation on a "first in, first out" basis must be used to prevent older products from becoming infested and to reduce the potential for the spread of pests from already infested products.

b. Food items found infested should be sealed in a plastic bag and removed from the building, treated, and discarded. The IMA must be notified by food service personnel of the infestation so that a survey of the area can be performed. A few specimens should be saved for identification purposes. Veterinary personnel will report pest damage of stored products per guidance in AR 40–657/NAVSUPINST4355.4F/MCOP10110.31G.

5–33. Pest Exclusion

a. Heavy weed growth within 25 feet of the facility should be eliminated.

b. Surplus pallets should be stacked away from the buildings.

c. Exterior lighting should be of a type and so located that it will not attract insects.

d. Any holes existing in or under walls should be eliminated and all cracks around door frames sealed with caulking or other approved material.

e. Doors should open outward, be tight fitting, and kept closed when not in use. Approved, controlled air curtains may be used, if installed so that pests are blown away from the entrance and not into the building (see NSF Standard 37 for guidance). Air velocity, measured 3 feet above the floor, will be at least 600 feet per minute (fpm) for personnel entranceways and at least 1,600 fpm for service entranceways. Food service facility doors will be self-closing.

f. Entrances for plumbing and electrical lines will be sealed where they penetrate the building.

g. Operable windows and air exhaust and intake openings will be screened using material of not less than 16–mesh to the inch. Expanded metal mesh or 1/4–inch mesh hardware cloth will be used where rodent entry is a problem.

h. Loading docks that are not of solid construction and have an open area underneath them will be kept free of debris, excess pallets, and packing material.

5–34. Sanitation

a. Proper sanitation practices will substantially reduce pest food supplies and harborage. Without proper sanitation practices, chemical and other nonchemical control measures will be ineffective.

b. Rodent droppings will be cleaned up as soon as detected and any food containers involved evaluated for contamination.

5–35. Additional Nonchemical Control Methods

a. Snap traps placed around the inside perimeter of the facility and along runways are an effective rodent control measure.

b. Glue boards can be used in place of or in conjunction with snap traps for controlling mice and rats.

c. Repellent glues, birdnetting, or porcupine wire may be used to keep birds off roosting points.

d. Light traps are not effective for insect control and are not recommended for use in food service facilities. Light traps are useful for monitoring insect populations and may be placed in food service warehouses to monitor stored product pest populations.

e. Ultrasonic and electromagnetic devices have not been scientifically proved to repel pests nor approved by the Armed Forces Pest Management Board. Accordingly, these devices will not be used.

f. Hanging sticky fly paper may be used in nonfood areas (for example, storage areas, vestibules). They will not be used in food preparation, serving, or dining areas where food may be contaminated by insects or insect parts falling from the hanging paper. Do not hang glue paper above a heat source, since the glue will melt and drip.

g. Cockroach infestations in portable food carts used in healthcare facilities are difficult to control. USAEHA TG 106 should be used to determine the appropriate control method.

h. Devices designed to electrocute flying insects can be effective against some pests of public health importance and are acceptable for use if they are positioned so that dead insects are prevented from falling on exposed food, food-contact surfaces, or clean equipment and utensils, and if the traps have an escape resistant tray that is emptied at least weekly. For proper positioning of devices in food service facilities where food, food-contact surfaces, equipment, and utensils are exposed, the following criteria must be met:

(1) Use wall type devices only. Ceiling type units are not permitted in these areas.

(2) Install so that the center of the device is not more than 3 feet above the floor.

(3) Install no closer than 5 feet from exposed items or areas.

(4) Devices must be accepted, certified, listed, labeled, or otherwise determined to be safe by a nationally recognized testing laboratory acceptable to TSG.

(5) Locate the device so that pests external to the facility are not attracted into the facility by the light.

5–36. Chemical Control Methods

a. Pesticides will be applied in the food preparation, storage, and serving areas only by trained or certified pest management personnel and only as a supplement to nonchemical control measures.

b. Pesticide application may be made in nonfood areas based on the pest surveillance conducted by the local IMA.

c. Coordination between the IMA, food service, and pest management personnel is imperative to ensure that the pesticide applications are efficient and effective.

d. Pesticide application will be made when the food preparation area is not in operation.

e. Following the application of residual insecticides, avoid washing the treated areas for 48 hours. After application of any pesticide, adjacent or exposed food preparation surfaces will be thoroughly cleaned before preparing subsequent meals.

f. Residual insecticides will not be used to treat food carts used by healthcare food service facilities. Carts treated with nonresidual pesticides will not be used to transport food until the carts have been steam-cleaned.

g. Automatic aerosol pesticide dispensing devices will not be used in food serving or preparation areas on Army installations.

Section IX. LINENS

5–37. Clean Linens and Clothes Storage

a. Clean linens and clothes will be stored in a clean place and protected from contamination until used.

b. An adequate supply of clean linens, coats, aprons, other required work uniforms, cleaning cloths, and similar laundered items must be provided.

5–38. Soiled Linens and Clothes Storage

a. Soiled linens and clothes will be stored separately from clean linen, food storage, or food preparation and serving areas in nonabsorbent containers or washable laundry bags until removed for laundering.

b. Soiled linens and clothes will not be stored in cold food storage areas or rooms.

CHAPTER 6

CONSTRUCTION AND MAINTENANCE OF FOOD SERVICE FACILITIES

Section I. CRITERIA

6–1. Standards and Design

Food service facilities at fixed installations will be designed, constructed, and maintained for that purpose only. Standards and design criteria are provided in *Architectural and Engineering Instructions Design Criteria*, OCE. Specific requirements for food service facilities are provided by this bulletin. (See para 1–4*d*(7).)

6–2. Paint

Lead base paint and paint containing pesticides will not be used in food service facilities.

Section II. FLOORS

6–3. Construction

Floors and floor coverings of all serving lines; customer self-service, food preparation, food storage, and utensil washing areas; walk-in refrigeration units (built in place and prefabricated floors); dressing, locker, and toilet rooms; vestibules; and other similar areas will be constructed of smooth, durable material such as quarry tile, sealed ceramic tile, or other approved material. All jointed type materials will have smooth junctures. The binding cement, mortar, or grout (epoxy) jointed materials will be water– and grease–proof, and erosion resistant. Floors will be maintained in good repair. The use of an anti-slip floor covering is acceptable in areas where necessary for safety reasons. However, anti-slip floor coverings will be of such materials and construction to allow thorough cleaning. Floor materials will be compatible with intended cleaning methods.

6–4. Carpeting

Carpeting may be authorized only for administrative and patron dining areas. If used, carpeting will be of closely woven construction, properly installed, easily cleanable, maintained in good repair, and will meet applicable requirements of ETL 1110–3–323.

6–5. Prohibited Floor Coverings

a. The use of sawdust, wood shavings, peanut hulls, or similar material as a floor covering is prohibited.

b. In butcher shops of food service facilities, the use of clean butcher paper or USDA approved sawdust substitutes are authorized if used per MIL STD–903.

6–6. Floor Drains

Properly installed, trapped floor drains will be provided in floors that are water-flushed for cleaning, that receive discharges of water or other fluid waste from equipment, or in areas where pressure spray methods for cleaning equipment are used. Where equipment discharges onto the floor, the drain will be provided with a sump and removable protective grate to receive the waste. Such floors will be constructed only of sealed concrete, ceramic tile, or similar materials and will be graded to drain. For additional guidance, see TM 5–810–5/ AFM 88–8.

6–7. Cove Base

In new construction or renovation, junctures between floor and wall will be coved and sealed.

6–8. Mats and Duckboards

Mats and duckboards, if used, will be designed and constructed for easy cleaning. All mats and duckboards procured subsequent to publication of this bulletin will be constructed per NSF Standard 52. Wooden duckboards will not be used as storage racks.

Section III. WALLS AND CEILINGS

6–9. Maintenance

Walls and ceilings, including doors, windows, skylights and similar closures, will be maintained in good repair. Asbestos materials will be handled per TB MED 513.

6–10. Construction

The walls, including nonsupporting partitions, wall coverings, and ceilings, will be light colored, nonabsorbent, and easily cleanable in areas such as—

a. Walk-in refrigeration units.
b. Food preparation areas.
c. Equipment and utensil washing areas.
d. Toilet rooms.
e. Vestibules in permanent facilities.

Where concrete block is used in these locations, it will be finished and sealed with ceramic tile, epoxy paint, or skim coat plaster to provide an easily cleanable surface. In new construction and renovation, use of ceramic tile or glazed structural units is recommended for wall construction in areas subject to heavy soiling. Gypsum wallboard on steel studs will not be used in food preparation, serving, storage, self-service areas, dishwashing, pot and pan washing, toilet, and toilet areas, or other areas subject to water damage or high humidity. Gypsum wallboard will not be used in areas used by mobile food service equipment. Water-resistant gypsum wallboard protected by cement backer-board and ceramic tile can be used to sheath stud walls. Acoustical materials used in areas exposed to grease or high humidity will be constructed and installed to provide a reasonably nonabsorbent, easily cleanable surface. Such materials may require periodic replacement to maintain sanitary standards. Exposed corners of glazed structural units, concrete masonry unit partitions and columns subject to damage from portable food service equipment will have protective guards not less than 72 inches above the finished floor.

6–11. Exposed Construction

Studs, joists, rafters, or other unfinished building materials will not be exposed in any walk-in refrigeration units, food preparation areas, equipment washing and utensil washing areas, toilet rooms, and vestibules. If exposed in other rooms or areas, they will be finished to provide a smooth, easily cleanable surface.

6–12. Attachments

Light fixtures, vent covers, wall-mounted fans, poster- and blackboards, decorative materials, and similar equipment attached to walls and ceilings will be—

a. Easily cleanable.
b. Maintained in good repair.
c. Mounted so as to minimize vermin harborage or entrance to the unit.

Section IV. UTILITY AND SERVICE LINE INSTALLATIONS

6–13. Introduction

Service lines and utilities will be designed and installed to facilitate proper cleaning of floors, walls, and ceilings. Whenever feasible, connections should be from the ceiling as opposed to through the floor or wall.

6–14. Openings Through Walls, Floors, and Ceilings

Utility and service lines and openings through horizontal and vertical surfaces will be sealed to prevent the passage of moisture, insects, rodents, or birds.

6–15. Exposed Utility and Service Lines

Exposed utility and service lines will be kept to a minimum. Where exposed pipes and service lines are required and do not provide a safety hazard, they will be at least 6 inches (15 cm) above the floor and 1 inch (2.54 cm) from the wall and adjacent pipe(s) to promote cleaning. In new construction, utility and service lines will not be exposed on walls, floors, or ceilings in walk-in refrigeration units, food preparation areas, equipment washing and utensil washing areas, toilet rooms, and vestibules.

Section V. CLEANING FACILITIES AND EQUIPMENT

6–16. Introduction

Cleaning of floors and walls, except for cleanup of spills, will be performed when the least amount of food is exposed, such as after closing or between meals. All surfaces, attached equipment, and decorative materials will be kept clean. Only dustless methods of cleaning such as vacuum cleaning (with microfiltration on the exhaust) or wet cleaning will be used.

6–17. Custodial Facilities

The use of lavatories, food utensil or equipment washing sinks, or food preparation sinks is prohibited for the—

a. Cleaning of mops or similar wet-floor cleaning tools.
b. Disposal of mop water or similar liquid waste.

In new or renovated facilities, one utility sink or curbed cleaning facility with a drain to the sanitary sewer will be provided. Mop racks will be used to suspend mops (hung head down) to facilitate air drying.

Section VI. LIGHTING

6–18. Introduction

a. Permanently fixed, artificial light sources will be installed to provide at least 50 foot-candles of light on all food preparation surfaces and at equipment or utensil washing work levels.

b. Permanently fixed, artificial light sources will be installed to provide general illumination levels of at least—

(1) 30 foot-candles of light at a distance of 30 inches from the floor throughout food preparation, serving, and warewashing areas.

(2) 20 foot-candles of light in utensil, equipment, and food storage areas; lavatory and toilet areas; and in dining areas during cleaning operations.

(3) 10 foot-candles of light in walk-in refrigeration units.

6–19. Protective Shielding

a. Shatterproof bulbs or shielding to protect against broken glass falling onto food will be provided for all artificial lighting fixtures located over, by, or within food preparation, service, and display facilities; storage areas for unpackaged foods; and facilities where utensils and equipment are cleaned and stored.

b. Infrared or other heat lamps will be protected against breakage by a shield surrounding and extending beyond the bulb, leaving only the face of the bulb exposed.

Section VII. VENTILATION

6–20. Introduction

a. All dishwashing, pot and pan washing areas, food preparation, processing and serving areas, dressing or locker rooms, toilet rooms, indoor garbage, or refuse storage areas will be ventilated to avoid excessive heat, steam, condensation, obnoxious odors, smoke, and fumes. Ventilation hoods and devices will be designed to prevent grease or condensate from dripping into food or onto food-contact surfaces.

b. In kitchens served by a common building ventilation system, all air from the kitchen will be exhausted to the outdoors and not recirculated.

c. All cooking equipment used in processes producing smoke or grease-laden vapor (that is, deep fat fryer, ranges, griddles, and broilers) will be provided with a local exhaust ventilation system and attendant fire protection system per NFPA Standard 96.

d. All cooking equipment used in processes producing steam condensate and not producing smoke or grease-laden vapors, if not adequately controlled by general dilution ventilation, will be provided with local exhaust ventilation systems that exhaust to the outdoors.

6–21. Exhaust Rates

a. Exhaust rates for ventilation systems serving griddles, stoves, steam kettles, deep fat fryers, and other such heat and steam and grease-laden air-producing equipment will be of such velocity to provide for their adequate capture and removal.

b. Dishwashing and pot and pan washing areas will have ventilation rates—

(1) Not less than 20 air changes per hour, or

(2) As required by *Architectural and Engineering Instructions Design Criteria*, or

(3) As recommended by the dishwashing machine manufacturer. The dishwashing machine exhaust system will provide the air capacity in CFM as recommended by the machine manufacturer.

c. Existing serviceable local exhaust ventilation hoods will not be replaced for the sole purpose of meeting the criteria listed, provided the existing hoods meet or can be modified to meet NFPA Standard 96, and the capture velocity (V) (air flow at the cooking surface adequate to entrain particles in the air stream and draw contaminated air into the hood), meets the following criteria:

V = 50 fpm non-grease producing equipment (kettles, ranges, small griddles)

V = 75 fpm grease producing equipment (fryers, pressure fryers, griddles)

V = 150 fpm high heat producing equipment (char broiler, upright broilers)

d. Equipment not requiring hoods or local exhaust systems (unless deemed necessary by the IMA)—

(1) Hot holding units.

(2) Coney island grills.

(3) Pretzel machines.

(4) Popcorn machines.

(5) Chemical dishwashing and glassware machines.

(6) Under counter hot water dishwashing machines.

(7) Electric (300°F maximum) enclosed oven.

6–22. Grease Removal Devices

a. Filters will be—

(1) Tight fitting and firmly held in place.

(2) Easily accessible and removable for cleaning or replacement.

(3) Installed at an angle not less than 45 degrees from the horizontal.

(4) Equipped with a drip tray beneath the lower edge of the filters.

b. If a collection container is attached to the drip tray, it will be enclosed and not have a capacity exceeding 1 gallon.

6–23. Cleaning Grease Removal Devices

Hoods, grease removal devices, fans, ducts, and other appurtenances will be cleaned at frequent intervals prior to surfaces becoming heavily contaminated with grease or oily sludge. Flammable solvents or other flammable cleaning aids will not be used.

Section VIII. DRESSING ROOMS AND LOCKERS

6–24. Dressing Rooms and Areas

If employees routinely change clothes within the food service facility, rooms or areas will be designated and used for that purpose. These designated rooms or areas will not be used for food preparation, storage or service, or for utensil washing or storage.

6–25. Lockers

Sufficient lockers or other suitable facilities will be—

a. Provided and used for the orderly storage of employee clothing and other belongings.

b. Located only in the designated rooms or in food storage rooms or other areas containing only completely packaged food or packaged single-service articles.

Section IX. PREMISES

6–26. Introduction

a. Food service facilities and attendant property will be kept free of litter.

(1) The walking and driving surfaces of all exterior areas of permanent food service facilities will be surfaced with concrete, asphalt, gravel, or similar material effectively treated to facilitate maintenance and minimize dust. These surfaces will be graded to minimize standing water. Other areas will be landscaped to minimize dust.

(2) Only articles necessary for the operation and maintenance of the food service facility will be stored on the premises.

b. The traffic of unnecessary or unauthorized persons through the food preparation and utensil washing areas is prohibited.

c. Use of exterior hoses and hose bibs for washing privately owned vehicles is prohibited.

6–27. Living Areas

Operation of a food service facility will not be conducted in any room used as living or sleeping quarters. Food service operations will be separated from any living or sleeping quarters by complete partitioning and solid, self-closing doors. Family quarters will not be used for the commercial preparation of food.

6–28. Laundry Facilities

Laundry facilities will be permitted only when authorized by the IMA.

a. When authorized, laundry facilities in a food service facility are restricted to the washing and drying of linens, cloths, uniforms, and aprons necessary to the operation of the food service facility. If such items are laundered on the premises, an electric or gas dryer will be provided and used.

b. Cleaning and processing of linen will be per comparable commercial laundry processes and will be reviewed and approved by the IMA.

c. Separate rooms will be provided for laundry facilities except that such operations may be conducted in storage rooms containing only packaged foods or packaged single-service articles.

d. An electric or gas clothes dryer is not necessary if on-premises laundering is limited to wiping cloths intended to be used moist; and the laundered wiping cloths are stored in a sanitizing solution; or are air dried in a room removed from operational areas of the facility, including food, equipment, and utensil storage areas.

6–29. Linens and Clothes Storage

Adequate separate facilities will be provided for storage of clean and soiled linens and clothes (paras 5–37 and 5–38).

6–30. Cleaning Equipment Storage

Maintenance and cleaning tools such as brooms, mops, vacuum cleaners, and similar equipment will be maintained and stored in a way that does not contaminate food, utensils, equipment, or linens.

6–31. Live Animals

a. Live animals, including birds and turtles, will be excluded from food service facilities and from adjacent areas under the control of the food

service manager. This exclusion does not apply to edible fish, crustacea, and shellfish from approved sources intended for serving; nor to fish in aquariums provided food service personnel are not involved in cleaning or maintenance of aquariums.

b. Guide dogs accompanying blind or handicapped individuals requiring the services of a guide dog are permitted in dining areas.

c. Patrol dogs accompanying security or police personnel are permitted in dining areas during conduct of official duties. This does not permit security or police personnel to have patrol dogs accompany them in dining areas during consumption of meals.

6–32. Live Plants

Live plants will be allowed only in the dining area of the facility and will be located where they cannot contaminate food.

CHAPTER 7

MOBILE FOOD UNITS

Section I. GENERAL PROVISIONS

7–1. Requirements

Mobile food units, including pushcarts, except as specifically provided in this chapter, will comply with all requirements of this bulletin. The IMA may impose additional requirements to include prohibiting the sale of some or all PHFs if deemed necessary to protect against health hazards related to the conduct of mobile food service operations.

7–2. Restricted Operations

a. Restricted operations are mobile food units that are limited to the preparation of frankfurters or other similar sausages and non–PHFs.

b. Mobile food units may serve PHFs that—

(1) Have been prepared, transported, and served under conditions meeting the full requirements of this bulletin.

(2) Are packaged in individual servings.

c. These restricted operation units need not comply with requirements below pertaining to the necessity of water and sewage systems nor to those requirements pertaining to the in-unit cleaning and sanitizing of equipment and utensils. The requirements only apply if the required equipment for cleaning and sanitizing does not exist at the servicing facility.

Section II. SPECIFIC PROVISIONS

7–3. Single-service Articles

Mobile food units are required to use or provide to the customer single–service articles.

7–4. Beverages

Only those beverages that are not a PHF will be dispensed unless the mobile food unit is equipped to properly prepare and maintain such beverages. Beverages will be dispensed from individual containers, covered urns, or other similarly protected systems. Use of dippers is prohibited.

7–5. Ice

Use of chilled, canned, or carton drinks is preferred to the use of drinks to which fresh ice is added.

a. Only potable ice will be used for drinks, snow cones, and other similar items.

b. Ice used for cooling food, canned drinks, etc. will not be offered to the consumer. Tubing used to convey beverages or beverage ingredients to dispensing heads may be in contact with stored ice, provided that the requirements of paragraph 4–12*c* are met.

c. Mobile food units that provide ice for consumption and self service by the customers will be equipped with and will use covered self draining ice bins. Ice scoops will be provided. Ice scoops on mobile food units will be stored outside the ice bin and will be protected from contamination (see para 2–28).

7–6. Water System

A mobile food unit requiring a water system will have a potable water system under pressure. The system will be of sufficient capacity to furnish enough hot and cold water for food preparation, utensil cleaning and sanitizing, and handwashing.

7–7. Waste Retention

If liquid waste results from operation of a mobile food unit, the waste will be stored in a permanently installed retention tank that is of at least 15 percent larger capacity than the water supply tank. Liquid waste will not be discharged from the retention tank when the mobile food unit is in motion. All connections on the vehicle for servicing mobile food unit waste disposal facilities will be of a different size or type than those used for supplying potable water to the mobile food unit. The waste connection must be located lower than the water inlet connection to minimize contamination of the potable water system.

7–8. Flushing of Tanks

Provisions will be made for the retention tank to be thoroughly flushed and drained during the servicing operation. All liquid waste will be discharged to a sanitary sewer.

7–9. Potable Water Systems

Potable water systems will be drained, cleaned, and disinfected at least weekly. Disinfect by filling the system with a 100–ppm free available chlorine solution and holding for 1 minute. Drain and rinse with potable water.

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7–10. Storage Units

Adequate hot holding and refrigerated storage units will be provided.

a. Refrigeration units will meet the requirements as outlined in chapter 2, sections III and V. Use of ice chest cold storage units may be authorized by the IMA.

b. Hot food holding facilities will meet the general requirements as outlined in paragraphs 2–12 and 2–30*b*.

c. Metal stem-type thermometers will be readily available and used to ensure proper holding temperatures for PHF.

d. PHFs will be—

(1) Kept at an internal product temperature of 45°F (7°C) or below or at an internal product temperature of 140°F (60°C) or above.

(2) Prechilled or preheated at the servicing facility to the required internal product temperature prior to placement in the mobile food unit.

e. Wet storage of food is prohibited.

f. Storage of wrapped sandwiches in direct contact with ice is prohibited.

Section III. SERVICING FACILITY

7–11. Operations

Mobile food units or pushcarts will operate from a servicing facility and will report at least daily to such location for all supplies and for all cleaning and servicing operations.

7–12. Construction

The servicing facility will be constructed and operated in compliance with all applicable requirements of this bulletin for food service facilities.

7–13. Special Requirements

a. A separate mobile food unit servicing area will be provided and will include at least overhead protection from inclement weather during resupply, cleaning, and servicing operations. A location will be provided for—

(1) Flushing and draining of liquid wastes separately from the location(s) provided for water servicing.

(2) Loading and unloading of food and related supplies.

(3) Cleaning and sanitizing of mobile food trucks and equipment. This servicing area is not required where only packaged food is placed on the mobile food unit or pushcart or where mobile food units do not contain waste retention tanks.

b. The surface of the servicing area will be—

(1) Constructed of a smooth, nonabsorbent material such as concrete or machine-laid asphalt.

(2) Maintained in good repair, kept clean, and be graded to drain.

c. Potable water servicing equipment will be—

(1) Installed per applicable plumbing codes.

(2) Stored and handled in a way that protects the potable water supply and equipment from contamination.

7–14. Servicing Operations

a. Mobile food unit food-contact surfaces will be cleaned and sanitized per requirements outlined in chapter 4, section VI.

b. The mobile food unit liquid waste retention tank, where used, will be thoroughly flushed and drained during the servicing operation. All liquid waste will be discharged to a sanitary sewer.

7–15. Training

All mobile food unit operators and drivers will comply with the requirements of chapter 3, paragraph 3–6.

CHAPTER 8

TEMPORARY FOOD SERVICE

Section I. GENERAL PROVISIONS

8–1. Requirements

Except as otherwise provided in this section, temporary food service facilities will comply with all of the requirements of this bulletin.

8–2. Inspections and Approvals

Temporary food service facilities will be inspected and approved by the IMA prior to the start of operations. The IMA may—

a. Impose additional requirements to protect public health.

b. Prohibit the sale of some or all PHFs.

c. Waive or modify these requirements when no health hazard will result. Examples would be the waiving of requirements for screens and doors when no hazard exists from flies contaminating the food.

8–3. Restricted Operations

Restricted operations are those temporary food service facilities where only those PHFs requiring limited preparation, such as hamburgers and frankfurters, are prepared or served. The preparation or service of other PHFs is prohibited. This prohibition does not apply to serving any PHF that—

a. Has been prepared and packaged under conditions meeting the requirements of this bulletin.

b. Is obtained in individual portioned containers or packages from approved sources.

c. Is stored at an internal product temperature of 45°F (7°C) or below, or 140°F (60°C) or above in facilities meeting the requirements of this bulletin.

d. Is served directly in the unopened, individual serving container or package in which it was obtained. PHFs held at unsafe temperatures will be discarded as food waste per chapter 2, section II.

Section II. SPECIFIC PROVISIONS

8–4. Equipment

a. Equipment will be located and installed in a way that prevents food contamination and that also facilitates cleaning.

b. Food-contact surfaces of equipment will be protected from contamination by consumers and other contaminating agents. Effective shields for such equipment will be provided, as necessary, to prevent contamination.

8–5. Single-service Articles

All temporary food service facilities without adequate facilities for cleaning and sanitizing tableware will provide only single-service articles.

8–6. Water

Enough potable water will be available in the facility for food preparation, and for cleaning and sanitizing utensils and equipment. A heating system capable of producing adequate hot water for these purposes will be provided on the premises. If adequate hot water is not available, the scope of food service operations will be limited to the preparation and service of foods that do not require cleaning and sanitizing of equipment and utensils. As an alternative, authorization may be granted by the IMA for cleaning and sanitizing equipment and utensils at a remote permanent approved food service facility.

8–7. Sewage

All sewage, including liquid waste, will be disposed of in a sanitary sewer.

8–8. Handwashing

A convenient handwashing facility will be available for employee handwashing. This facility will consist of at least running water, soap, and individual paper towels and, if approved by the IMA, be of field expedient design.

8–9. Floors

When provided, floors will be constructed of concrete, asphalt, tight wood, or other similar cleanable material and be kept in good repair. When approved by the IMA, dirt or gravel may be used as subflooring provided floors are—

a. Graded to drain.

b. Covered with clean, removable platforms or duckboards, or other suitable materials effectively treated to control dust.

8–10. Walls and Ceilings of Food Preparation Areas

a. Ceilings will be made of wood, canvas, or other material that protects the interior of the

establishment from the weather and dust. Walls and ceilings of food preparation areas will be constructed in a way that minimizes the entrance of insects. Screening material used for walls, doors, or windows will be at least 16 mesh to the inch.

b. Counter-service openings will be no larger than necessary for the particular operation conducted. These openings will be provided with tight-fitting solid or screened doors or windows, or will be protected to restrict the entrance of flying insects.

CHAPTER 9

FIELD FOOD SERVICE

9–1. Introduction

Field food service will comply with the general provisions of this bulletin relative to personnel; product protection, preparation, and serving; equipment design and construction; and waste disposal.

9–2. Applicable Publications

Field food service sanitation expedient methods are outlined in FM 8–34, FM 8–250, FM 10–23, FM 21–10, and FM 21–10–1.

9–3. Specific Requirements Applicable to Field Food Service

a. PHFs will not be retained as leftovers.

b. Where A rations are served in the field and field training exercises, adequate refrigeration support will be provided. Where adequate refrigeration capability is not available, B, MRE, or T rations will be used exclusively.

c. Only insulated food containers with inserts and Meal Carriers: Insulated, Remote Squad (MCIRS) will be used. Inserts or MCIRS will be cleaned and sanitized prior to use. Containers will be prechilled or preheated as appropriate prior to filling according to FM 8–34 or FM 10–23. Food will be brought to safe temperature (paras 2–11 and 2–12) prior to placement in containers. PHF held in insulated food containers for more than 4 hours will be discarded as food waste. Guidance as outlined in FM 10–23, chapter 10, will be followed.

d. Use of individual serving condiments is preferred in the field. However, condiments may be dispensed from sanitary dispensers provided requirements of paragraph 2–27 are followed.

e. Field pot, pan, and utensil washing and sanitizing operations will be conducted per requirements outlined in FM 10–23 or FC 21–150 (or applicable FM or TM).

f. Field-expedient handwashing facilities will be provided at food preparation areas.

g. Waste will be disposed of to minimize insect and rodent attraction.

h. Garbage and rubbish will be buried, incinerated, returned to the forward supply point, or disposed of according to local requirements.

i. Fresh fruits and vegetables grown in areas where human excreta is used as fertilizer, or where gastrointestinal or parasitic diseases are expected to be prevalent, will not be consumed raw except with the approval of the medical command, preventive medicine office. When authorized for consumption, fruits and vegetables, including leafy vegetables, may be eaten raw if thoroughly washed in clean potable water, then disinfected by use of Disinfectant, Food Service (NSN 6840–00–810–6396), according to labeled packet instructions. Where Disinfectant, Food Service, is not available, emergency disinfection of fruits and vegetables may be accomplished by thorough washing, then soaking for 30 minutes in a 200–ppm chlorine solution, or by immersion in potable water at 160°F (72°C) for 1 minute. Prepare the chlorine solution by mixing 1 tablespoon of Household Liquid Bleach (NSN 6910–00–598–7316) (sodium hypochlorite—5 to 5.2 percent) with 1 gallon of cool potable water.

CHAPTER 10

VENDING MACHINE OPERATIONS

Section I. REQUIREMENTS

10–1. Introduction

All food or beverage vending machines operated on Army installations or at facilities under Army control will comply with the general provisions of this bulletin and the specific requirements of this chapter.

10–2. Certificate of Compliance

Except for bottled or canned beverages, all food or beverage vending machines will be certified as outlined in this document. Prior to machine installation, the vending machine operator will submit to the IMA evidence that the machine meets the current standards of the NSF or the National Automatic Merchandising Association (NAMA) in one of the following ways:

a. Display on the vending machine the NSF seal and listing in the current edition of *Food Service Equipment and Related Products, Components and Materials.*

b. Listing in the NAMA Letters of Compliance, National Automatic Merchandising Association, 20 North Wacker Dr., Chicago, IL 60606–3178.

c. Certification from a recognized independent laboratory, acceptable to TSG or the chief surgeon of the major oversea command, stating the machine meets the NSF or NAMA requirements.

10–3. Exclusive Vending Machine Operation Terms

The following terms are defined exclusively for vending machine operations.

a. Bulk food. Any food dispensed to the consumer that is not packaged, wrapped, or otherwise enclosed.

b. Controlled location vending machine (limited service vending machine). Any vending machine operation that—

(1) Dispenses only non–PHFs.

(2) Is of such design that it can be filled and maintained in a sanitary manner by untrained personnel.

(3) Is intended for and used at locations where protection from contamination is assured.

c. Employee (vending machine personnel). Any personnel including—

(1) Supervisory and managerial;

(2) Other persons who handle any food to be dispensed through a vending machine; or

(3) Persons coming in contact with food-contact surfaces or containers, equipment, utensils, or packaging materials used in connection with vending operations; or who otherwise service or maintain one or more such machines.

d. Equipment. Any vending machines, ovens, tables, counters, sinks, and similar items, other than utensils used in vending operations.

e. Machine location. The room, establishment, facility, or any other location where one or more vending machines are installed and operated.

f. Operator. The person, who by contract, agreement, or ownership, takes responsibility for furnishing, installing, servicing, operating, or maintaining one or more vending machines. For AAFES contract vending machines, AAFES is considered the operator.

g. Vending machine. Any self-service device that, upon insertion of a coin, paper currency, token, card, or key, dispenses unit servings of food, either in bulk or in packages, without the necessity for replenishing the device between each vending operation. Unless otherwise noted, vending machine includes controlled location vending machines (para *b* above).

Section II. FOOD SUPPLIES

10–4. Introduction

a. Food exposed, offered, or sold through vending machines will be wholesome, obtained from approved sources, and prepared in an approved food processing establishment.

b. Pre-prepared or prepackaged PHF will be prepared without condiments and labeled with date and time of preparation. When approved by the IMA, meat salads or other high protein salad fillings may be used in pre-prepared items. Fillings will be acidified below pH 4.5 and written certification by an independent testing food laboratory must be provided by the operator to the IMA.

c. Chilled PHFs, except dairy products and sandwiches (as provided in chap 2, sec IV), will be removed from the vending machine within 36 hours of preparation. If the foods are held at a constant product temperature of 40°F (4°C) or

below, the IMA can extend shelf life to 60 hours after preparation. All such foods will have the date and time of preparation clearly shown on the wrapper or carton. Chilled dairy products will not be vended after the manufacturer's expiration date.

d. Commercially frozen PHFs (except frozen sandwiches).

(1) Commercially frozen PHF may be placed in the vending machine provided the item is frozen as part of the production process. Such products may be kept in the vending machine for the duration of the manufacturer's labeled shelf life provided the requirements noted in (3) and (4) below are followed.

(2) PHFs may be frozen at the servicing facility only with the approval of the IMA. Such food items will be individually labeled with the date and time of preparation. Items will be placed in the vending machine within 28 days of preparation and pulled from the machine within 36 hours after removal from frozen storage. Each item or lot will be labeled with the correct expiration date and time.

(3) Frozen items will not be tempered prior to placement in the vending machine.

(4) Frozen foods will be kept at 0°F (−18°C) during transport, servicing, and loading of the machine.

e. PHFs for vending operations will be stored and transported at safe temperatures. Exceptions may be made for the time to load and service vending machines and for a 30–minute recovery time to heat food from 45°F (7°C) to 140°F (60°C) for hot food vending machines.

f. In hot food vending machines, PHF will be heated immediately after placement in the machine. Hot food will be maintained at an internal product temperature between 140°F (60°C) and 150°F (66°C).

10–5. Sandwiches

Only pre-prepared sandwiches will be vended. Specific requirements outlined in paragraph 2–25 will be followed.

10–6. Food Protection

a. At all times, including while being prepared, stored, loaded, displayed, or transported, food intended for sale through vending machines will be protected from contamination by all agents, including dust, insects, rodents, unclean equipment and utensils, unnecessary handling, coughs, sneezes, flooding, draining, and overhead leakage or condensation.

b. The internal product temperature of PHFs will be 45°F (7°C) or below or 140°F (60°C) or above at all times, except when required during preparation.

c. Special requirements:

(1) Milk and fluid products offered for sale through vending machines will be pasteurized, of Grade A quality, obtained only from an approved source, and dispensed only in individual original containers.

(2) Milk, fluid milk products, and fluid nondairy products (creaming agents) will not be dispensed in vending machines as bulk food items except that nondairy coffee whiteners may be dispensed through approved coffee dispensing vending machines.

10–7. Condiments

When condiments are provided in conjunction with food dispensed by a vending machine, they will be—

a. Packaged in individual portions in single-service containers; or

b. Dispensed from sanitary dispensers that are cleaned, rinsed, and sanitized, filled at the commissary or at the vending machine location if adequate utensil washing and sanitizing facilities are provided; or

c. Made available from condiment self-service dispensing equipment at those locations having an on-duty attendant. Use of relish bowls and other similar nonself-closing condiment containers is prohibited.

10–8. Fresh Fruits

Fresh fruits that may be eaten without peeling will be thoroughly washed in potable water at the packing plant by the processor or at the servicing facility before being placed in the vending machines for dispensing. The washed fruit will be protected from contamination.

10–9. Handling

All food, other than fresh fruit, will be stored or packaged in clean protective containers, and all food will be handled and vended in a sanitary manner. Wet storage is prohibited.

10–10. Dispensing

PHF offered for sale through vending machines will be dispensed to the consumer in the individual, original container or package it was placed in at the servicing facility or at the manufacturer's or processor's plant. PHF will not be dispensed from bulk food machines. PHFs in hermetically sealed containers processed to prevent spoilage, and dehydrated, dry, or powdered products so low in moisture content as to minimize development of

microorganisms are excluded from the definition of PHF as used in this chapter.

10–11. Temperature

Vending machines dispensing PHF will be provided with adequate refrigerating or heating units and thermostatic controls to ensure the maintenance of safe temperatures at all times. Such vending machines will also have automatic controls to prevent the machine from vending PHF in the event of power failure, mechanical failure, or any other condition that results in noncompliance with temperature requirements in the food storage compartment until the machine is serviced by the operator.

10–12. Time-temperature Relationships

PHF that has failed to conform to the time-temperature requirements of this bulletin will be—

a. Removed from the vending machine.

b. Denatured or otherwise rendered unusable for human consumption.

c. Disposed of as food waste or transported off post.

10–13. Thermometers

Vending machines dispensing PHF will be provided with one or more numerically scaled thermometers capable of being calibrated to comply with the accuracy requirements outlined in this bulletin. Placement of the thermometer will indicate the air temperature of the warmest part of the refrigerated food storage compartment or the coldest part of the heated food storage compartment, whichever is applicable.

10–14. Training

Vending machine personnel, employees and operator(s), are classified as food service personnel. However, they will be exempt from the food service sanitation training required by paragraph 3–6 if the vending contractor or contractor representative can show documentation of an in-house sanitation training program following the training guidelines of the NAMA.

10–15. Personal Cleanliness

a. Employees will maintain a high degree of personal cleanliness and will conform to good hygienic practices while engaged in handling foods or food-contact surfaces of utensils or equipment.

b. Employees will thoroughly wash their hands with soap and warm water immediately prior to engaging in any vending machine servicing operation which may bring them into contact with food or food-contact surfaces of utensils, containers, or equipment.

Section III. EQUIPMENT LOCATION

10–16. Location Selection

a. Vending machines, ovens, and other equipment will be—

(1) Located in a room, area, or space that can be maintained in a clean condition.

(2) Protected from overhead leakage or condensation from water, waste, or sewer piping.

b. The immediate area in which the equipment is located will be well lighted and ventilated.

c. Each vending machine will be located so—

(1) The space around and under the machine can be easily cleaned and maintained.

(2) Insect and rodent harborage is not created.

10–17. Floors

The floor area where vending machines are located will be reasonably smooth, of cleanable construction, and capable of withstanding repeated washing and scrubbing. On approval of the IMA, vending machines may be located in areas that are covered with tightly woven, easily cleanable carpet. This space and the immediate surroundings of each vending machine will be maintained in a clean sanitary condition.

10–18. Handwashing Facilities

Adequate handwashing facilities will be convenient to the machine location and will be available for use by employees servicing or loading bulk food machines.

10–19. Sanitary Facilities and Controls

a. Water supply. All water used in vending machines will be from an approved source and protected from contamination. All plumbing connections to the vending machine will comply with applicable plumbing regulations.

(1) Water used as a food ingredient will be piped to the vending machine under pressure. Exception: When approved by the IMA, controlled location vending machine water may be obtained from a safe source and carried to the machines in clean, sanitized containers of approved construction.

(2) If used, water filters or other water conditioning devices will be of a type that can be disassembled for periodic cleaning or replacement of the active element. Replacement elements will be handled in a sanitary manner.

(3) Vending machines connected to a water supply system that dispense carbonated beverages will be equipped with two check valves (or a double check valve), an air gap, or other device to prevent the flow of carbon dioxide and carbonated

water back into the supply system. The ingredient or carbonated water-contact surfaces of these valves or protective devices, including the device itself, will be a material that does not create a toxic substance on contact with carbon dioxide or carbonated water.

b. Waste disposal.

(1) All trash and other solid or liquid waste will be removed from the machine location as necessary to prevent nuisance, unsightliness, and insect and rodent attraction.

(2) Self-closing, leak-proof, easily cleanable waste receptacles will be provided in the immediate vicinity of vending machine(s) to receive used cups, cartons, and wrappers. Where machines are located outdoors, these receptacles will be of insect and rodent-proof construction.

(3) Waste receptacles will be cleaned after emptying as required to prevent vermin attraction or harborage.

(4) Waste receptacles will not be located within the vending machines with the exception of those machines dispensing only packaged food with crown closures. In this case, the closure receptacles may be located within the machine. Waste receptacles will not be located under counters or otherwise enclosed in a manner that creates a nuisance or prevents space around and under the counter or enclosure from being easily cleaned and maintained. Suitable racks or cases will be provided for multiuse containers or returnable bottles.

(5) Containers for collecting drips, spills, overflows, or other internal wastes will be provided within all machines dispensing liquid food in bulk. Such machines will be equipped with an automatic shut-off device at the waste pail or other device or valves to put the machine out of operation before the waste pail overflows. Such devices will prevent a water or liquid product from continuously running in the event of the failure of any single flow control, high level control, or other flow control device in the liquid product or water system.

(6) Controlled location vending machines not connected to a water supply system, and which generate no internal liquid wastes, may be equipped with easily removable drip pans at the dispensing platform in lieu of internal waste containers and automatic shut-off devices.

(7) Controlled location vending machines that are connected to a water supply and have no internal waste containers will be equipped with at least two independently operated controls to prevent the continued flow of water in event of failure of any single flow control device. Containers or surfaces on which such wastes may accumulate will be readily removable for cleaning, easily cleanable, and corrosion-resistant. If liquid wastes from drips, spillage, or overflow that originate within the machine are discharged into a sewerage system, the connection to the sewer will be through an air gap.

Section IV. SPECIAL REQUIREMENTS

10–20. Single-service Articles

Single-service articles will be—

a. Purchased in sanitary packages that protect the articles from contamination.

b. Stored in a clean, dry place until used.

c. Handled in a sanitary manner.

Such articles will be furnished to the customer in the original wrapper or from a sanitary single-service dispenser. All single-service articles will be protected from manual contact, dust, insects, rodents, and other contamination.

10–21. Vending Machines

a. All food-contact surfaces of vending machines to include containers, pipes, valves, and fittings will be constructed and repaired with safe materials. In addition, finishing materials will be—

(1) Corrosion-resistant, nonabsorbent, easily cleanable and durable under conditions of normal use.

(2) Cleaned, rinsed, and sanitized at a frequency established by the IMA based upon the type of product and vermin accessibility to product being dispensed.

b. All food-contact surfaces, unless designed for in-place cleaning, will be accessible for manual cleaning, rinsing, sanitizing, and inspection—

(1) Without being disassembled, or

(2) By disassembly without the use of tools, or

(3) By easy disassembling with the use of only simple tools such as a screwdriver or an open-end wrench.

c. All food-contact parts or surfaces not designed for in-place cleaning will be cleaned, rinsed, and sanitized in clean, portable containers or in utensil washing sinks at the location or the servicing facility. Cleaning will consist of washing in warm water containing a suitable detergent and brushing or wiping, as appropriate. Rinsing will consist of immersion or wiping with clean, clear rinse water. Sanitizing will be accomplished by—

(1) Immersion or rinsing in water of at least 170°F (77°C) for 30 seconds; or

(2) Immersion for 1 minute in an approved chemical sanitizing solution containing at least 50

ppm of available chlorine (one tbsp of household type bleach in 4 gallons of water) or 12.5 ppm of available iodine, or 200 ppm of quaternary ammonium sanitizer.

d. In machines designed so that food-contact surfaces are not readily removable, all such surfaces intended for in-place cleaning will be designed and fabricated so that—

(1) Cleaning and sanitizing solutions can be circulated throughout a fixed system using an approved effective cleaning and sanitizing regimen.

(2) Cleaning and sanitizing solutions contact all food-contact surfaces.

(3) The system is self-draining or capable of being completely evacuated.

(4) The procedures used result in thorough cleaning and sanitizing of the equipment.

e. The openings into all nonpressurized containers used for the storage of vendible food, including water, will be provided with covers to prevent contamination from reaching the interior of the containers. Such covers will be designed to provide a flange that overlaps the opening, and will be sloped to provide drainage from the cover wherever the collection of condensation, moisture, or splash is possible. Concave covers or cover areas are prohibited. Any port opening through the cover will be flanged upward at least $^{3}/_{16}$ inch (0.5 cm) and provided with an overlapping cover flanged downward. Condensation, drip, or dust deflecting aprons will be provided on all piping, thermometers, equipment, rotary shafts, and other functional parts extending into the food container unless a water-tight joint is provided. Such aprons will be considered as satisfactory covers for those openings that are in continuous use. Gaskets, if used, will be of safe materials, stable, nonabsorbent, and will have a smooth surface. All gasket retaining grooves will be easily cleanable.

f. The delivery tube or chute and orifice of all bulk food vending machines will be protected from normal manual contact, dust, insects, rodents, and other contamination. The design will divert condensation or moisture from the normal filling position of the container receiving the food. The vending stage of such machines will be provided with a tight-fitting, self-closing door or cover that is kept closed except when food is being removed. The cup filling area or platform of controlled location vending machines does not require a door or cover if there is no opening into the cabinet interior at that point other than for dispensing tube(s) or trapped waste drain. Exception: Controlled location vending machines will be equipped with a self-closing door at vending locations where insect or rodent entry into the machine may occur.

g. The food storage compartment and other compartments in refrigerated vending machines that are subject to condensation or cooling water retention will be self-draining or equipped with a drain outlet that permits complete draining. In vending machines designed to store cartoned beverages, diversion devices and retention pans or drains for leakage will be provided and be easily cleanable.

h. Can and bottle openers that come into contact with the food and food-contact surfaces of the containers will be constructed of corrosion-resistant, nonabsorbent, and safe materials and will be kept clean. Cutting or piercing parts of multiuse openers that come into contact with the food or food-contact surfaces of containers will be reasonably protected from manual contact, dust, insects, rodents, and other contamination. Such parts will be readily removable for cleaning and sanitizing.

i. Exterior construction and maintenance.

(1) The vending machine will be of sturdy construction. The exterior will be designed, fabricated, finished, and maintained to facilitate its being kept clean, and to minimize the entrance of insects and rodents.

(2) Door and panel access openings to the food and container storage spaces of the machine will be tight-fitting and provided, if necessary, with gaskets to prevent the entrance of dust, moisture, insects, and rodents.

(3) All ventilation louvers or openings into vending machines will be effectively screened. Screening material for openings into food and container storage spaces of the machine will be not less than 16 mesh to the inch or equivalent. Screening material for openings into condenser units that are physically separated from food and container storage spaces will be not less than 8 mesh to the inch or equivalent.

(4) In all vending machines where the condenser unit is an integral part of the machine, such unit, when located—

(*a*) Below the food and container storage space will be separated from such space by a dust-proof barrier.

(*b*) Above food and container storage space will be sealed from such spaces.

(5) In order to prevent seepage underneath the machine and to promote cleaning, free standing vending machines will have one or more of these elevation or movability features—

(*a*) Light enough to be manually moved with ease by one person.

(*b*) Elevated on legs or extended sidewalls to afford, with or without kickplates, an unobstructed

vertical space of at least 6 inches (15 cm) under the machine.

(*c*) Mounted on rollers or casters to permit easy movement.

(*d*) Sealed to the floor.

(6) Kickplates will be easily removable or be capable of being rotated. Kickplates will be designed and installed to make the area under the machine easily accessible for routine cleaning without unlocking the cabinet cover.

(7) Counter type machines will be—

(*a*) Sealed to the counter, or

(*b*) Mounted on 4–inch (10 cm) legs or the equivalent, or

(*c*) Easily moved for cleaning with service connections in place.

(8) All service connections through an exterior wall of the machine including water, gas, electrical, and refrigeration connections, will be closed or sealed with a pliable sealing compound according to paragraphs 4–10 and 4–11 to prevent the entrance of insects and rodents. All service connections to machines vending PHF will be designed and installed to discourage their unauthorized or unintentional disconnection.

10–22. Other Equipment

a. All other equipment at the vending location will be kept clean. Food-contact surfaces, if any, will be cleaned, rinsed, and sanitized as necessary.

b. The cavities and door edges of microwave ovens will be cleaned at least once a day with nonabrasive cleaners and will be kept free of encrusted grease deposits and other accumulated soil. All doors, seals, hinges, and latch fasteners (screws and related hardware) will be kept tight and adjusted per manufacturer's procedures. Microwave ovens will be tested and be in compliance with applicable safety standards of the U.S. Food and Drug Administration's (FDA's) Bureau of Radiological Health and USAEHA TG 153.

c. Microwave ovens will be—

(1) Surveyed and maintained per USAEHA TG 153.

(2) Evaluated at least every 3 years (comprehensive inspection).

(3) Checked for compliance of routine monthly user inspections.

d. Food-contact surfaces of all equipment and utensils will be protected from contamination at all times including while being transported from the commissary, or other establishment, to the vending location.

Section V. ADMINISTRATIVE PROCEDURES

10–23. Approval

Authority to operate vending machines dispensing PHFs or hot or cold cup beverages may be granted by the installation commander based on IMA approval. Medical approval may be obtained following satisfactory pre– and post–facility and equipment installation inspections. This means the vending machine equipment and location, transport system, supply storage, servicing and sanitizing facilities, and commissary or other establishment will be deemed in compliance with the requirements of this bulletin. Approvals are not transferable.

10–24. Identity

The operator's name, complete mailing address, and service telephone number will be conspicuously displayed on a permanent label affixed to each vending machine or in a conspicuous location adjacent to a bank of vending machines.

10–25. Operator's Procedures

In addition to complying with the provisions of this bulletin, the vending machine operator—

a. Maintains a list of all vending machines operated within the jurisdiction of the IMA.

b. Maintains a complete address of each machine location and of all commissaries or other establishments that service these vending machines.

c. Provides the information in *a* and *b* above to the IMA on request, and keeps this information current.

d. Obtains IMA approval for each vending machine location where PHF and hot– and cold–cup beverage vending machines will be placed in operation.

e. Obtains IMA approval prior to any change in operations involving new types of vending machines or conversions of existing machines to dispense products other than those for which the machines were built.

10–26. Suspension of Approval

The IMA may, without prior warning or notice, suspend approval to operate a vending machine operation on the installation if the operation constitutes a hazard to public health.

a. When approval is suspended, the IMA will notify the operator by telephone and in writing. Vending operations will cease on initial notification.

b. Suspension of approval may be withdrawn following reinspection if correction of noted deficiencies has been accomplished.

10–27. Inspections

a. Inspection frequency.

(1) The IMA will select vending locations for inspection by a method that assures the inspection of representative machines and locations serviced by each of the operator's routemen and supervisors. The frequency of inspection and selection of locations will assure the widest coverage of each operator's locations over the frequency deemed appropriate by the IMA. Machines dispensing PHFs will be inspected at least every 3 months. Vending machine operations may be inspected without prior notice when a potential health hazard or unsanitary condition is believed to exist.

(2) Transport vehicles and servicing facilities will be inspected as often as deemed necessary by the IMA.

b. Access for inspections.

(1) The IMA will be permitted access to vending machine locations, servicing facilities, and transport vehicles for the purpose of determining compliance with this bulletin. For food preparation, transport, and machine servicing operations that are conducted over one or more shifts, access for inspection will be granted during all periods of operation.

(2) The operator will make provision for the IMA to have access, either in company with an employee or otherwise, to the interior of all food vending machines operated by him or her.

10–28. Notification of Inspection Findings

Whenever an inspection of food vending machines is made, a copy of the completed inspection report will be furnished to the operator. Reports of unsatisfactory inspections will be furnished the vending machine contracting officer.

CHAPTER 11

ADMINISTRATIVE PROCEDURES, FOOD SERVICE SANITATION PROGRAM

Section I. INSPECTION REPORTS

11–1. Reports

Reports will normally be directed to the unit commander or facility manager. Significant repeated discrepancies or unsatisfactory ratings will be reported to the next higher command level. Where correction of significant deficiencies is not obtained or is beyond the capability of the local installation commander, the conditions noted and recommended corrective actions will be summarized in the Command Health Report (RCS MED–3(R7)). A copy of a completed and signed inspection report will be left at the food service facility.

11–2. AAFES Facilities

a. Information copies of all inspections that rate AAFES facilities in CONUS as unsatisfactory will be forwarded to Commander, AAFES, ATTN: Staff Veterinarian, PD–Q/V, P.O. Box 660202, Dallas, TX 75266–0202. CONUS includes Alaska, Panama, and Puerto Rico.

b. Information copies of all inspections that rate AAFES facilities in U.S. Army Europe (USAREUR) as unsatisfactory will be forwarded to Commander, AAFES–EUROPE, ATTN: Staff Veterinarian (VT), APO New York 09245–0003.

c. Information copies of all inspections that rate AAFES facilities in the Pacific area as unsatisfactory will be forwarded to Commander, AAFES–Pacific, ATTN: Staff Veterinarian (VM), 919 Ala Moana, Honolulu, HI 96814–4999.

11–3. Troop Dining Facilities

Information copies of unsatisfactory inspection reports of appropriated fund troop personnel dining facilities will be forwarded to the appropriate installation food advisers.

11–4. Nonappropriated Fund Activities

Information copies of unsatisfactory inspection reports of nonappropriated fund dining facilities (officer, NCO, and enlisted clubs, except AAFES) will be forwarded to Commander, U.S. Army Environmental Hygiene Agency, ATTN: HSHB–MI–S, Aberdeen Proving Ground, MD 21010–5422. Copies of unsatisfactory reports will also be furnished to the installation Director of Personnel and Community Activities.

Section II. DISEASE OUTBREAKS

11–5. Procedures

a. The IMA will investigate all suspected outbreaks of foodborne illness. Determination of the responsible etiological agent depends on early recognition of the first cases. Each medical facility will have a notification plan that is implemented whenever a foodborne illness outbreak is suspected to be occurring. Standing operating procedures (SOPs) for each medical facility will include at least the following:

(1) Implementation of a notification plan when the decision has been made that a potential outbreak is occurring.

(2) Collection of stool and vomitus specimens for laboratory analysis during increased incidence of gastroenteritis. Written plans will be developed for acquiring, packing, and shipping laboratory samples for any necessary analysis beyond local capability.

(3) Recording whatever epidemiological information the patient may recall as soon as possible after treatment.

(4) Contacting the supporting preventive medicine and veterinary activities at the earliest indication of a suspected foodborne illness outbreak.

b. Where preventive medicine or veterinary support is available, trained preventive medicine or veterinary personnel will conduct foodborne illness outbreak investigations.

c. In addition, in areas where preventive medicine or veterinary support is not readily available, the medical facility personnel will—

(1) Contact the food services facility and require that all leftover or suspected foods are set aside for laboratory analysis.

(2) Determine whether other members of the organization with whom each patient commonly eats are suffering from gastrointestinal complaints.

(3) Initiate a sanitation inspection of the food service facility and ensure collection of the following information:

(*a*) What food was served at all suspect meals before the outbreak onset.

(*b*) How the food was prepared and served (tabulate time and methods).

(*c*) Whether the foods and methods were conducive to bacterial contamination and foodborne illness.

(*d*) When the food was received in the kitchen, when issued, and from what source.

(*e*) Any discrepancies observed at time of receipt.

(*f*) What temperatures the food was stored at prior to preparation.

(*g*) How long the food was held before cooking.

(*h*) The time, temperature, and manner in which food was held after cooking.

(*i*) If any of the suspected food or foods were previously consumed without harmful results.

(*j*) If any of the suspected food had been recently condemned.

(*k*) Which kitchens served persons who subsequently became ill.

(*l*) What significant leftover or uncooked food is left in storage.

(*m*) If food handlers are affected with cuts, sores, boils, colds, etc. Send suspects for medical examinations.

(4) Develop an appropriate SOP including identification of personnel responsibilities listed above.

d. The preventive medicine service must develop a plan that will outline the procedures for a comprehensive, coordinated investigation of possible outbreaks of foodborne illness. It should specify each section's responsibilities and list procedures each person and section must carry out. Preventive medicine personnel who are designated as investigators must be given training on investigating foodborne outbreaks, sample and data collection, and sample preservation.

11–6. Documentation

Centers for Disease Control (CDC) Form 52.13 (Investigation of a Foodborne Outbreak) (fig 11–1) should be used because of the wide differences usually found among those eating a certain item of food and those becoming ill (attack rate), and as a reminder of other important information that should be recorded for analysis. A variation of item 7 on this form may be made by using food combinations instead of separate items. The same item in each of the combinations may stand out as a common factor and point to the contaminated source.

11–7. Technical Assistance

The manual, *Procedures To Investigate Foodborne Illness*, prepared by the Committee on Communicable Diseases Affecting Man, will assist investigating personnel in determining causal factors of disease outbreaks.

Section III. SANITIZER EFFECTIVENESS

11–8. Methods

One method of demonstrating effective bactericidal treatment is by an average plate count per utensil surface examination. There should be no more than 12 colonies per square inch (5 colonies per square cm) of surface examined if using the swab contact method. There should be no more than 5 colonies per square inch (2 colonies per square cm) of surface examined if using the replicate organism detection and counting (RODAC) or contact slide method of recovery.

11–9. Technical Assistance

The methods are detailed in the current edition of *Standard Methods for the Examination of Dairy Products*, by the American Public Health Association.

CDC USE ONLY ☐☐☐☐ (1-4)

This report is authorized by law (Public Health Act, 42 USC 241). While your response is voluntary, your cooperation is necessary for the understanding and control of the disease.

FORM APPROVED
OMB NO. 0920-0004

SAMPLE

INVESTIGATION OF A FOODBORNE OUTBREAK

1. Where did the outbreak occur ?
State Ohio (5-6) City or Town Rhynedale County Snow

2. Date of outbreak: (Date of onset 1st c
7/24/85
MO / DA / YR (7-12)

3. Indicate actual(a) or estimated (e) numbers:
Persons exposed 56 (13-17)
Persons ill 25 (18-22)
Hospitalized 1 (23-27)
Fatal case 0 (28-31)

4. History of Exposed Persons:
No. histories obtained 51 (32-35)
No. persons with symptoms 25 (36-39)
Nausea 17 (40-43) Diarrhea 25 (44-47)
Vomiting 12 (48-51) Fever 23 (52-55)
Cramps 25 (56-59) Other, specify Headache 23 (60-79)

5. Incubation period (hours):
Shortest 8 (80-83) Longest 182 (84-
Approx. for majority 31 (88-

6. Duration of illness (hours) (day)
Shortest 2 (92-95) Longest 9 (96
Approx. for majority 6 (101-

7. Food - specific attack rates:

Food Items Served	Number of persons who ATE specified food				Number who did NOT eat specified food			
	Ill	Not Ill	Total	Percent Ill	Ill	Not Ill	Total	Percent
SEE TABLE (Food specific attack rate table)								

8. Vehicle responsible (food item incriminated by epidemiological evidence): (105-106)

9. Manner in which incriminated food was marketed: (Check all Applicable)

	Yes 1	No 2		Yes 1	No 2	
(a) Food Industry			(c) Not Wrapped			(112)
Raw			Ordinary Wrapping	☒		(113)
Processed	☒		(107) (108) Canned			(114)
Home Produced			Canned—Vacuum Sealed			(115)
Raw			(109) Other (specify)			(116)
Processed			(110)			(117-129)
(b) Vending Machine			(111) (d) Room Temperature	☒		(130)
			Refrigerator			(131)
			Frozen			(132)
			Heated			(133)

If a commerical product, indicate brand name and lot number
(134-150)

10. Place of Preparation of Contaminated Item: (151)

Restaurant	☐	1
Delicatessen	☒	2
Cafeteria	☐	3
Private Home	☐	4
Caterer	☐	5
Institution:		
School	☐	6
Church	☐	7
Camp	☐	8
Other, specify	☐	9

Shopette Deli
(152-171)

11. Place where eaten: (172)

Restaurant	☐	1
Delicatessen	☐	2
Cafeteria	☐	3
Private Home	☐	4
Picnic	☐	5
Institution:		
School	☐	6
Church	☐	7
Camp	☐	8
Other, specify	☐	9

(173-

DEPARTMENT OF HEALTH AND HUMAN SERV
PUBLIC HEALTH SER
CENTERS FOR DISEASE CON
ATLANTA, GEORGIA

CDC 52.13 REV. 9/83 (over)

Figure 11–1. Investigation of a Foodborne Outbreak (Sample).

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LABORATORY FINDINGS (Include Negative Results)

12. Food specimens examined: (193)
Specify by "X" whether food examined was original (eaten at time of outbreak) or check-up (prepared in similar manner but not involved in outbreak).

Item	Orig.	Check up	Findings Qualitative	Findings Quantitative
Example: beef	X		C. perfringens, Hobbs type 10	2×10^6/gm
No Food Available				

13. Enviromental specimens examined: (194)

Item	Findings
Example: meat grinder	C. perfringens, Hobbs Type 10
Table top -ss	
Cutting boards	

14. Specimens from patients examined (stool, vomitus, etc.): (195)

Item	No. Persons	Findings
Example: stool	11	C. perfringens, Hobbs Type 10
Stool-case	25	

15. Specimens from food handlers (stool, lesions, etc.): (196)

Item	Findings
Example; lesion	C. perfringens, Hobbs Type 10
Stool	

16. Factors contributing to outbreak (check all applicable):

	Yes 1	No 2	Unk.	
1. Improper storage or holding temperature	X			(197)
2. Inadequate cooking	X			(198)
3. Contaminated equipment or working surfaces	X			(199)
4. Food obtained from unsafe source				(200)
5. Poor personal hygiene of food handler	X			(201)
6. Other, specify				(202)

17. Etiology: (203-204)
Pathogen: Salmonella typhimurium
Chemical:
Other:

Suspected: X 1 (205)
Confirmed: 2
Unknown: 3

18. Remarks: Briefly describe aspects of the investigation not covered above, such as unusual age or sex distribution: unusal circumstances leading to contamination of food, water, epidemic curve; etc. (Attach additional page if necessary)

Attached Sheets:
- Histories cases vs well
- Freq of symptoms
- Food specific attack rates
- Food sample collection report

Examples in the IAMFES procedures to investigate foodborne illness

SAMPLE

(206-225)

Name of reporting agency: (226)

Investigating offical: Joe Knows

Date of Investigation: 2 Aug 85

NOTE: Epidemic and Laboratory Assistance for the investigation of a foodborne outbreak is available upon request by the State Health Department to the Centers for Disease control, Atlanta, Georgia 30333

To improve national surveillance, please send a copy of this report to:

Enteric Diseases Branch
Bacterial Diseases Division
Center for Infectious Diseases
Centers for Disease Control
Atlanta, Georgia 30333

Submitted copies should include as much information as possible, but the completion of every item is not required.

CDC 52.13 (back)
REV. 9/83

Figure 11–1. Investigation of a Foodborne Outbreak (Sample)—Continued.

APPENDIX A

REFERENCES

A–1. Army Regulations

AR 30–1	The Army Food Service Program.
AR 40–5	Preventive Medicine.
AR 40–657/NAVSUPINST 4355.4F/MCO P10110.31G	Veterinary/Medical Food Inspection and Laboratory Service.
AR 215–2	The Management and Operation of Army Morale, Welfare, and Recreation Programs and Nonappropriated Fund Instrumentalities.
AR 310–25	Dictionary of United States Army Terms.
AR 310–50	Authorized Abbreviations, Brevity Codes, and Acronyms.
AR 420–10	Management of Installation Directorates of Engineering and Housing.
AR 420–47	Solid and Hazardous Waste Management.
AR 420–76	Pest Management.

A–2. Technical Bulletins

TB MED 513	Guidelines for the Evaluation and Control of Asbestos Exposure.
TB MED 576	Sanitary Control and Surveillance of Water Supplies at Fixed Installations.
TB MED 577	Sanitary Control and Surveillance of Field Water Supplies.

A–3. Other Publications

DEHEW Pub. No. 78–2081	Food Service Sanitation Manual. (Available from U.S. Department of Health and Human Services, Public Health Service, Food and Drug Administration, 5600 Fishers Lane, Rockville, MD 20857.)
DEHEW Pub. No. 78–2091 (FDA)	The Vending of Food and Beverages. (Available from U.S. Department of Health and Human Services, Public Health Service, Food and Drug Administration, 5600 Fishers Lane, Rockville, MD 20857.)
DOD 4160.21–M	Defense Reutilization and Marketing Manual.
ETL 1110–3–323	Carpet in Army Facilities. (Available from Department of the Army, U.S. Army Corps of Engineers, ATTN: CEMP–EC, 20 Massachusetts Ave., N.W., Washington, DC 20314–1000.)
FC 21–150	Combat Field Feeding System (CFFS) Operations.
FM 8–34	Food Sanitation for the Supervisor.
FM 8–250	Preventive Medicine Specialist.
FM 10–23	Army Food Service Operations.
FM 21–10	Field Hygiene and Sanitation.
FM 21–10–1	Unit Field Sanitation Team.
MIL–HDBK–740	Dishwashing Operations.
MIL STD–175	Sanitary Standards for the Equipment Methods for the Handling of Milk and Milk Products in Bulk Milk Dispensing Operations.
MIL STD–903	Sanitary Standards for Commissary Stores.
NFPA Standard 13	Sprinkler System Installation. (Available from National Fire Prevention Association, Batterymarch Park, Quincy, MA 02269.)
NFPA Standard 96	Vapor Removal from Cooking Equipment. (Available from National Fire Prevention Association, Batterymarch Park, Quincy, MA 02269.)
NSF Standard 3	Commercial Spray-Type Dishwashing Machines. (Available from National Sanitation Foundation, 3475 Plymouth Road, P.O. Box 1468, Ann Arbor, MI 48106.)
NSF Standard 29	Detergent and Chemical Feeders for Commercial Spray-Type Dishwashing Machines. (Available from National Sanitation Foundation, 3475 Plymouth Road, P.O. Box 1468, Ann Arbor, MI 48106.)

NSF Standard 37	Air Curtains for Entranceways in Food Establishment. (Available from National Sanitation Foundation, 3475 Plymouth Road, P.O. Box 1468, Ann Arbor, MI 48106.)
NSF Standard 52	Supplemental Flooring. (Available from National Sanitation Foundation, 3475 Plymouth Road, P.O. Box 1468, Ann Arbor, MI 48106.)
PHS Pub 1631	Procedures for the Bacteriological Examination of Food Utensils and/or Food Equipment Surfaces, latest edition. (Available from U.S. Department of Health and Human Services, Public Health Service, Food and Drug Administration, 5600 Fishers Lane, Rockville, MD 20857.)
TM 5–632/NAVFAC MO–310/ AFM 9–16	Military Entomology Operational Handbook.
TM 5–634	Refuse Collection and Disposal: Repairs and Utilities.
TM 5–810–5/AFM 88–8	Plumbing.
TM 10–415	Dining Facility Equipment; Operation and Operator Maintenance.
Unnumbered Publication	Architectural and Engineering Instructions Design Criteria, March 1987. (Available from Department of the Army, U.S. Army Corps of Engineers, ATTN: CEMP–EC, 20 Massachusetts Ave., N.W., Washington, DC 20314–1000.)
Unnumbered Publication	Basic Criteria C–2 for Special Equipment and Devices, latest edition. (Available from National Sanitation Foundation, 3475 Plymouth Road, P.O. Box 1468, Ann Arbor, MI 48106.)
Unnumbered Publication	Food Service Equipment and Related Products, Components and Materials, latest edition. (Available from National Sanitation Foundation, 3475 Plymouth Road, P.O. Box 1468, Ann Arbor, MI 48106.)
Unnumbered Publication	Food Service Equipment Standards, latest edition. (Available from National Sanitation Foundation, 3475 Plymouth Road, P.O. Box 1468, Ann Arbor, MI 48106.)
Unnumbered Publication	Handbook of Fundamentals, latest edition. (Available from American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE), 1791 Tullie Circle, N.E., Atlanta, GA 30329.)
Unnumbered Publication	Industrial Ventilation, A Manual of Recommended Practice, latest edition. (Available from American Conference of Governmental Industrial Hygienists, 6500 Glenway Avenue, Cincinnati, OH 45211–4438.)
Unnumbered Publication	Manual on Sanitation Aspects of Installation of Food Service Equipment, current edition. (Available from National Sanitation Foundation, 3475 Plymouth Road, P.O. Box 1468, Ann Arbor, MI 48106.)
Unnumbered Publication	Procedures to Investigate Foodborne Illness, 4th edition. (Available from the International Association of Milk, Food, and Environmental Sanitarians, Inc., P.O. Box 701, Ames, IA 50010.)
Unnumbered Publication	Recommended Field Evaluation Procedures for Spray-Type Dishwashing Machines, current edition. (Available from National Sanitation Foundation, 3475 Plymouth Road, P.O. Box 1468, Ann Arbor, MI 48106.)
Unnumbered Publication	Reference Guide, Sanitation Aspects of Food Service Facility Plan Preparation and Review, latest edition. (Available from National Sanitation Foundation, 3475 Plymouth Road, P.O. Box 1468, Ann Arbor, MI 48106.)
Unnumbered Publication	Standard Methods for the Examination of Dairy Products, current edition. (Available from the American Public Health Association, 1015 Eighteenth St. N.W., Washington, DC 20036.)
USAEHA TG No. 102	Guide for Conduct of Installation Pest Surveillance Program. (Available from Commander, USAEHA, ATTN: HSHB–CI–O, Aberdeen Proving Ground, MD 21010–5422.)
USAEHA TG No. 106	Guide for Pest Control Operations in U.S. Army Medical Treatment Facilities. (Available from Commander, USAEHA, ATTN: HSHB–

CI–O, Aberdeen Proving Ground, MD 21010–5422.)

USAEHA TG No. 138 — Guide to Commensal Rodent Control. (Available from Commander, USAEHA, ATTN: HSHB–CI–O, Aberdeen Proving Ground, MD 21010–5422.)

USAEHA TG No. 153 — Guidelines for Controlling Potential Health Hazards from Radiofrequency Radiation. (Available from Commander, USAEHA, ATTN: HSHB–CI–O, Aberdeen Proving Ground, MD 21010–5422.)

USDA Pub 1419 — List of Proprietary Substances and Nonfood Compounds, latest edition (annual). (Available from U.S. Department of Agriculture, Food Safety and Inspection Service, Washington, DC 20250.)

21 CFR 173 — Secondary Direct Food Additives Permitted in Food for Human Consumption. (Available for reference at the local installation staff judge advocate office.)

21 CFR 178 — Indirect Food Additives: Adjuvants, Production Aids, and Sanitizers. (Available for reference at the local installation staff judge advocate office.)

29 CFR 1910 — Occupational Safety and Health Standards. (Available for reference at the local installation staff judge advocate office.)

A–4. Referenced Forms

CDC 52.13 — Investigation of a Foodborne Outbreak. (Available from Centers for Disease Control, Bureau of Epidemiology, Atlanta, GA 30333.)

A–5. Prescribed Forms and Labels

DA Form 5161 — Comprehensive Food Service Inspection. (Prescribed in para 1–9*a*.)

DA Form 5162 — Routine Food Service Inspection. (Prescribed in para 1–9*b*.)

DA Form 5161–1 — Food Service Sanitation Inspection—Remarks. (Prescribed in para 1–9*a*.)

DA Label 177 — Pre-prepared Food. (Prescribed in para 2–22*d*.)

DA Label 178 — Leftover—Use Within 24 Hours. (Prescribed in para 2–34*d*.)

APPENDIX B
NATIONAL SANITATION FOUNDATION APPROVED FOOD SERVICE EQUIPMENT

B–1. The NSF, an independent testing agency, maintains a list of food service equipment that has been approved by them. It is updated on a yearly basis. This listing identifies food service equipment that was tested and met NSF requirements during the year of that edition.

B–2. NSF food service equipment listing information is currently available through electronic access.

a. Information includes—

(1) A list of all the active standards and criteria.

(2) Current listings under the standards.

(3) Lists of companies under the standard or criteria in which they have listings.

(4) Names and addresses of all NSF regions.

b. Access requires—

(1) A device capable of displaying 96 characters.

(2) A modem using Bel 212A protocol (1200 baud).

(3) An ASCII terminal or personal computer with a communications program.

For information on this service, contact NSF.

B–3. The address and telphone number of the NSF headquarters are—

National Sanitation Foundation
National Sanitation Foundation Building
3475 Plymouth Road
P.O. Box 1468
Ann Arbor, MI 48106
Telephone: (313) 769–8010

GLOSSARY

Section I. ABBREVIATIONS

AAFES .... Army and Air Force Exchange Service
ARLOC .... Army location code
ASSE ..... American Society of Sanitary Engineers
C ..... Celsius
CDC ..... Centers for Disease Control
CFM ..... cubic foot (feet) per minute
cm ..... centimeter
CONUS .... continental United States
DEHEW ... (U.S.) Department of Health, Education and Welfare (Public Health Service, Food and Drug Administration)
EM ..... enlisted man (men) or enlisted woman (women)
EPA ..... (U.S.) Environmental Protection Agency
ETS ..... Educational Testing Service
F ..... Fahrenheit
FDA ..... Food and Drug Administration
fpm ..... feet per minute
IMA ..... installation medical authority
IPM ..... integrated pest management
IPS ..... iron pipe size
MACOM ... major Army command
MCIRS ..... Meal Carriers: Insulated, Remote Squad
ml ..... milliliters
MRE ..... Meal, Ready to Eat
NAMA ..... National Automatic Merchandising Association
NFPA ..... National Fire Protection Association
NIFI ..... National Institute for Foodservice Industry
No. ..... number
NCO ..... noncommissioned officer
NSF ..... National Sanitation Foundation
NSN ..... National Stock Number
OCE ..... Office, Chief of Engineers
OTSG ..... Office of The Surgeon General
pH ..... hydrogen ion concentration
PHF ..... potentially hazardous food
ppm ..... part(s) per million
RODAC .... replicate organism detection and counting
SOP ..... standing operating procedure
tbsp ..... tablespoon(s)
TG ..... technical guide
TSG ..... The Surgeon General
UL ..... Underwriters Laboratories
USAEHA .. U.S. Army Environmental Hygiene Agency
USAREUR . U.S. Army Europe
USDA ..... U.S. Department of Agriculture
V ..... capture velocity

Section II. TERMS

Accessible

Capable of being exposed for the purpose of cleaning and inspection using simple tools such as screwdriver, pliers, or open-end wrench.

Adulterated

The condition of food if it—

a. Bears or contains any poisonous or deleterious substance in a quantity that may render it hazardous to health.

b. Bears or contains any added poisonous or deleterious substance for which no safe tolerance has been established, or in excess of such tolerance if one has been established.

c. Consists, in whole or in part, of any filthy, putrid, or decomposed substance, or if it is otherwise unfit for human consumption.

d. Has been processed, prepared, packed, or held under unsanitary conditions, whereby it may have become contaminated with filth or rendered hazardous to health.

e. Is, in whole or in part, the product of a diseased animal or an animal which has died other than by slaughter.

f. Has a container that is composed, in whole or in part, of any poisonous or deleterious substance that may render the contents injurious to health.

g. Is a PHF held at unsafe temperatures (46°F–139°F (7.9°C–59.4°C)) for greater than 3 hours cumulative time.

Approved

Acceptable to TSG based on conformance with appropriate standards and/or specifications and/or in compliance with established public health practice.

Cleaning

The physical removal of food residues, ingredients, and other soiling materials.

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Closed
An opening of 1/32 of an inch (0.8 mm)[1] or less in width.

Condiment
Any food such as salt, pepper, mustard, mayonnaise, and ketchup that is used to enhance the flavor of other food.

Corrosion resistant
Refers to those materials that maintain their original surface characteristics after prolonged exposure to the environment. This includes contact with food or normal use of cleaning compounds and sanitizing solutions.

Easily cleanable
Readily accessible; of such materials, finishes, and so fabricated that soil and debris can be effectively removed by normal cleaning methods.

Easily moveable
Equipment is easily moveable if it—

a. Is mounted on wheels or casters and has no utility connections, or

b. Has utility connections that are quick-disconnect, or

c. Has a flexible line of sufficient length to permit moving of equipment for cleaning.

Employee(s) (food service employee)
See food service personnel.

Equipment
All stoves, ovens, ranges, hoods, slicers, mixers, meat blocks, tables, counters, refrigerators, freezers, sinks, dishwashing machines, steam tables, and similar items, other than utensils, used in the operation of a food service facility.

Field food service
Table of organization and equipment food service operations including the equipment used in support of tactical operations or training, in other than garrison-type food service facilities or structures.

Food
Any raw, cooked, or processed edible substance, beverage, or ingredient used or intended for use or for sale in whole or in part for human consumption. Ice and iced water are included.

Food-contact surface
The two categories of food-contact surfaces are—

a. Those surfaces of equipment and utensils with which food normally comes in contact.

b. Those surfaces from which food may drain, drip, or splash back into food or onto surfaces normally in contact with food.

Food service facility
Any fixed or mobile field or garrison restaurant; snack bar; food plant; dining facility; medical treatment dining facility; canteen; bar; officers', NCO, or EM club; contractor-operated cafeteria; soda fountain; sandwich shop; delicatessen; exchange; commissary; troop issue subsistence activity; meat market; catering kitchen, or any other type of facility or operation other than a private residence in which food or drink is prepared, processed, stored, issued, vended, or served on the premises or elsewhere, with or without charge.

Food service facility manager or supervisor
The person in charge or responsible for the supervision of employees in a food service facility. Includes military and civilian shift leaders, night baker or cook, or anyone responsible for the direct supervision of food handlers during a shift.

Food service personnel
Any person who transports food or food containers, engages in food preparation or service, or comes in contact with any food, utensils, or equipment (other than food in unbroken protective packages). Military personnel detailed by daily duty roster to perform other than primary food preparation duties are not normally considered food service personnel (para 3–1).

Garbage
Garbage are those putrescible wastes resulting from the handling, preparation, cooking, and serving of food.

Hermetically sealed container
A container designed and intended to be secure against the entry of microorganisms and to maintain the commercial sterility of its contents after processing.

Installation medical authority
IMA refers to the unit surgeon, command chief surgeon, U.S. Army Medical Department activity or U.S. Army medical center commanders, and the director of the health services or his or her representative responsible for provision of medical support at the unit, command, or installation concerned in consultation with veterinarians, sanitary engineers, environmental science officers, and entomologists.

Integrated pest management
A comprehensive approach to pest control or prevention that considers various chemical, physical, and biological suppression techniques; the habitat

[1] Metric equivalents given throughout this bulletin are approximate equivalents and are given for reference only. Official measurements are the English units used.

of the pest; and the interrelationship between pest populations and the ecosystem.

Kitchenware
All multiuse utensils other than tableware.

Lavatory
A basin or similar vessel used exclusively for washing the hands, arms, and face to include associated plumbing and potable running water supply.

Leftovers
Those foods prepared for use during a given serving period but which were not offered for service during that period.

Mobile food unit
Any vehicular or trailer-mounted food service facility, except field food service equipment.

Nonfood zone
All exposed surfaces other than those included in food contact or splash zones.

Outbreak
An incident in which two or more persons have the same disease, have the same symptoms, or excrete the same pathogen; and there is a time, common food, place or person association between these persons. One case of botulism is considered an outbreak.

Packaged
Any bottled, canned, cartoned, or securely wrapped food item.

Perishables
Any food of such type or condition that may spoil.

Person-in-charge
Normally the facility manager is the person-in-charge. In the absence of the manager, his or her designated representative is the person-in-charge. When no designated supervisory employee is available, any employee present in the facility will be the person-in-charge for purposes of accompanying medical inspection personnel.

Portable
Equipment that is small and light enough to be moved easily by one person and has—

a. No utility connection, or

b. A utility connection that disconnects quickly, or

c. Flexible utility connection line of sufficient length to permit the equipment to be moved for easy cleaning.

Potentially hazardous food
PHFs have the following characteristics and exceptions:

a. Any food or food ingredient, natural or synthetic, in a form capable of supporting the—

(1) Rapid and progressive growth of infectious or toxigenic microorganisms, or

(2) Slower growth of *C. botulinum.*

b. The following factors can be used to determine whether or not a food is potentially hazardous. A food is potentially hazardous if it is—

(1) Of animal origin and is raw or has been heat treated.

(2) Of plant origin and has been heat treated or is raw seed sprouts.

c. Foods in the above categories which are not potentially hazardous are—

(1) Foods with a water activity value of 0.85 or less.

(2) Foods with a pH level of 4.5 or below.

(3) Foods which have been adequately and commercially processed and remain in their unopened hermetically sealed container.

(4) Foods which laboratory evidence (acceptable to the IMA) demonstrates that rapid and progressive growth of infectious and toxigenic microorganisms or the slower growth of *C. botulinum* cannot occur.

Pre-prepared
Items prepared (cooked or raw) in advance to be used later as ingredients or as complete menu items.

Product temperature
A measurement of food temperature used to determine the potential for growth of microorganisms (see para 2–4).

Pushcart
A nonself-propelled vehicle limited to serving nonpotentially hazardous foods or commercially wrapped food maintained at proper temperatures. A mobile food unit pushed by hand.

Readily accessible
Exposed or capable of being exposed, cleaned, and inspected without the use of tools.

Readily (or easily) removable
Capable of being detached from the main unit without the use of tools.

Reconstituted
Dehydrated food products recombined with water or other liquids.

Refuse
All nonputrescible solid waste.

Removable
Capable of being detached from the main unit with the use of simple tools, such as screwdrivers, pliers, or open-end wrenches.

Safe temperature
As applied to PHF, an internal product temperature of 45°F (7°C) or below, or 140°F (60°C) or above.

Safe materials
Articles manufactured from or composed of materials that may reasonably be expected not to result, directly or indirectly, in the adulteration of the food. If materials used are food additives or color additives as defined in the Federal Food, Drug and Cosmetic Act, sections 201(s) or (t), they are safe only if used in conformity with regulations established pursuant to sections 409 or 706 of the act. Other materials are safe as used, only if they are not food additives or color additives as defined in the Federal Food, Drug and Cosmetic Act, sections 210(s) or (t), and are used in conformance with all applicable regulations of the Food and Drug Administration.

Sanitizing
The bactericidal treatment of clean surfaces of equipment and utensils by an approved process that provides sufficient latent heat or concentration of chemicals for an adequate period of time to reduce the bacterial count, including pathogens, to a safe level and leave no toxic residue.

Sealed
Free of cracks or other openings that permit the entry or passage of moisture.

Servicing facility
Any food service facility or other location where food, containers, or supplies are kept, handled, cleaned, prepared, packaged, or stored in support of a mobile food unit or vending machine operation.

Shellfish
Fresh and frozen shucked oysters, clams, or mussels.

Single-service articles
Cups, containers, lids, closures, plates, knives, forks, spoons, stirrers, paddles, straws, napkins, wrapping materials, toothpicks, and similar articles intended by the manufacturer to be for one-time, one-person use and then discarded.

Soil
Dust, dirt, filth, or ingredient matter and other debris.

Splash zone
Those surfaces, other than food-contact surfaces, that are subject to routine splash, spillage, or other food soiling during normal operations.

Tableware
Multiuse eating and drinking utensils.

Tempering
The process by which the internal product temperature of frozen foods is elevated under controlled conditions to facilitate separation and handling of the product. Internal product temperature does not exceed 28°F (−2°C).

Temporary food service facility
A food service facility other than field food service that operates at a fixed location for a period of time of not more than 14 consecutive days. These facilities are generally operated in conjunction with an event, celebration, or seasonal activity.

Thawing
The process by which the internal product temperature of food is elevated under controlled conditions to above 28°F (−2°C).

Utensil
Any implement, such as tableware and kitchenware, used in the storage, preparation, display, transportation, serving, or consumption of food.

Ventilation
The removal or supply of air from a general area, room, or building to eliminate irritants and objectionable odors.

a. Natural ventilation is achieved by opening windows or doors to create an air draft (usually inadequate for kitchen and dining facility areas).

b. Mechanical ventilation is provided by heating, ventilating, and air conditioning equipment. This general or dilution ventilation is usually used to control nonparticulate fumes and odors and for heat control.

c. Local exhaust ventilation is used to control airborne particulate contamination at its source and is achieved with an exhaust hood and duct system.

Vermin
Small vertebrates or arthropods that are objectionable to man or pose a risk to health (rodents, cockroaches, flies, etc.).

Wet storage
Storage or display of food or food packages in water or in direct contact with undrained ice.

Wholesome
In sound condition, clean, free from adulteration, and otherwise suitable and safe for human consumption.

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By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:

MILTON H. HAMILTON
Administrative Assistant to the
Secretary of the Army

Distribution:

To be distributed in accordance with DA Form 12–34–E, block 1780, requirements for Occupational and Environmental Health—Food Service Sanitation.

U.S. GOVERNMENT PRINTING OFFICE : 1994 O - 154-505