

CHAPTER 9

FOOD SERVICE SANITATION

GENERAL

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

DINING FACILITY SANITATION

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

RESPONSIBILITIES

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

TEN SITUATIONS CONTRIBUTING TO FOOD-BORNE ILLNESS

Ten common situations contributing to food-borne illness are highlighted below. Some examples of

each situation are provided. Proper temperatures, hygiene, storage, and sanitation are discussed.

Unsafe Food-Holding Temperatures

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

Poor Personal Hygiene

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

Cross Contamination

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

Unsanitary Dishware, Utensils, and Equipment

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

Infected Food Handlers

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

Improper Food Handling

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

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

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

Improper Food Storage

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

Insects and Rodents

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

Chemicals Stored Near Food

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

EMPLOYEE TRAINING, APPEARANCE, AND HEALTH

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

Proper attire

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

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

Health

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

EMPLOYEE PRACTICES TO SAFEGUARD SANITATION

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

Food Handling

Observe the following when handling food:

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

Recipe Taste-Testing

Observe the following when taste-testing:

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

Utensil and Equipment Handling

Observe the following when handling utensils and equipment:

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

Performing Custodial Duties

Perform custodial duties (such as mopping the floor, cleaning grease hoods or grease traps) when

contamination of food is least likely to occur (that is, after food preparation) and interference with service is minimal.

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

Using Wiping Clothes (Handiwipes)

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

THE TIME AND TEMPERATURE PRINCIPLE

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

Tips on Temperature

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

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

Tips on Time

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

MANUAL DISHWASHING

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

The Prewash Policy

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

The First Sink Compartment

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

The Second Sink Compartment

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

The Third Sink Compartment

Sanitize the food-contact surfaces of all equipment and utensils in the third compartment

according to one of the methods outlined below.

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

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

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

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

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

- Immerse the item for at least one minute in a clean solution containing at least 50 parts per million (ppm) of available chlorine (1 tablespoon of household chlorine bleach for every 4 gallons of water used), at a temperature of at least 75° F but no more than 110° F. (**NOTE: Manufacturers of food-service equipment also caution users that liquid bleach attacks silver, pewter, and aluminum finishes.**)

- Immerse the item for at least one minute in a clean solution containing at least 12.5 ppm of available iodine and having a pH not higher than 5.0 at a temperature of at least 75° F but not more than 110° F. Ensure that the time and temperature are followed carefully.

CAUTION

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

MECHANICAL WAREWASHING

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

DO

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

DON'T

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

Figure 9-1. Tips for operating and maintaining dishwashers

Maintaining Sanitary Standards

Before loading the dishwasher, do the following:

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

Washing Flatware

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

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

CLEANING FREQUENCY

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

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

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

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

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

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

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

MATERIALS FOR CLEANING

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

Clean it Correctly

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

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

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

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

Follow Other Cleaning Restrictions

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

MAINTENANCE, CLEANING, AND DISINFECTING OF ICE MACHINES

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

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

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

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

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

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

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

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

FLY CONTROL

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

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

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

RODENT INFESTATION PREVENTION

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

Eliminate Rodent Entranceways

The following allow rodents to enter the dining facility:

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

Eliminate Rodent Hiding Places

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

- Keep garbage only in heavy-duty plastic or galvanized metal containers with tight-fitting lids.
- Place containers on racks at least 18 inches above the ground or on concrete blocks.
- Place garbage cans or dumpsters as far from the building as conveniently possible.

- Place all dry-food products in storerooms and on racks at least 6 inches above the floor.
- Keep food products away from the walls. Store boards, crates, and other containers or racks away from the walls.

Starve Rodents Out

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

COCKROACH INFESTATION PREVENTION

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

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

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

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

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

WASTE DISPOSAL

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

Inside

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

Outside

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

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

SANITATION AT THE TISA

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

Personnel

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

Area

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

Equipment

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

Transportation

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

canvas-covered vehicles are used, the rear flap should be lowered and secured during transportation. All vehicles should have standard pallets or buckboards to elevate the supplies above the bed of the truck. Vehicles used to transport food must not be used to carry trash, garbage, petroleum products, or other materials that might

contaminate food. Do not use privately owned vehicles to transport food. Refrigerated or insulated vehicles must be used to transport perishable food when, during transport, the temperature of the food can be expected to raise above the safe levels of 45° F (7° C) for refrigerated items and 0° F (-18° C) for frozen items.