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Subj: NAVMED P-5010, MANUAL OF NAVAL PREVENTIVE MEDICINE, CHAPTER 1, FOOD SAFETY

1. The revision to the Naval Preventive Medicine Manual (NAVMED Pub P-5010) Chapter on Food Safety is complete. Chapter 1 of the previous version of P-5010 is hereby cancelled.

2. This chapter can be found under publications on the Virtual Naval Hospital's web site: http://www.vnh.org. Forms found in the revised chapter will have a preprinted standard stock number at the bottom or can be accessed via these web sites: http://web1.whs.osd.mil/icdhome/DDEFORMS.HTM or http://web1.whs.osd.mil/icdhome/SFEFORMS.HTM.

3. For follow up to this manual and its chapter, contact the Preventive Medicine directorate at the Navy Environmental Health Center, Norfolk, Virginia. Telephone: COM (757)462-5591/5451 DSN 864-.

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MANUAL OF NAVAL PREVENTIVE MEDICINE
CHAPTER 1
FOOD SAFETY

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CHAPTER 1, FOOD SAFETY

Section I GENERAL INFORMATION

1-1 INTRODUCTION
1-2 PURPOSE
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1-1 INTRODUCTION

a. This chapter provides guidance for all military and non-military personnel of the Navy, Marine Corps and the Military Sealift Command involved with food safety/food service sanitation.

b. This chapter is based on the U.S. Public Health Service, Food and Drug Administration (FDA) "Food Code," which may also be used for guidance. When principles and procedures in these publications vary, this chapter must take precedence.

1-2 PURPOSE

This chapter prescribes the policies, procedures, and responsibilities for implementing the Navy and Marine Corps Food Safety/Food Service Sanitation Program. It applies to all food service operations within the Navy and Marine Corps, including the Military Sealift Command, Naval Reserve and Marine Corps Reserve.

1-3 DEFINITIONS

a. The following definitions of words and terms apply in the interpretation of this chapter.

b. Terms defined.

(1) **Additive.**

(a) "**Food additive**" means any substance the intended use of which results or may reasonably be expected to result, directly or indirectly, in its becoming a component or otherwise affecting the characteristics of any food (including any substance intended for use in producing, manufacturing, packing, processing, preparing, treating, packaging, transporting, or holding food; and including any source of radiation intended for any such use), if such substance is not generally recognized, among experts qualified by scientific training and experience to evaluate its safety, as having been adequately shown through scientific procedures (or, in the case as a substance used in

food prior to January 1, 1958, through either scientific procedures or experience based on common use in food) to be safe under the conditions of its intended use; except that such term does not include:

1 A pesticide chemical in or on a raw agricultural commodity; or

2 A pesticide chemical to the extent it is intended for use or is used in the production, storage, or transportation of any raw agricultural commodity; or

3 A color additive; or

4 Any substance used under a sanction or approval granted prior to September 6, 1958, pursuant to this chapter, the Poultry Products Inspection Act (21 U.S.C. 451 et seq.) or the Meat Inspection Act of March 4, 1907, as amended and extended (21 U.S.C. 601 et seq.); or

5 A new animal drug.

(b) **"Color additive"** means a material which:

1 Is a dye, pigment, or other substance made by a process of synthesis or similar artifice, or extracted, isolated, or otherwise derived, with or without intermediate or final change of identity, from a vegetable, animal, mineral, or other source, and

2 When added or applied to a food, drug, or cosmetic, or to the human body or any part thereof, is capable (alone or through reaction with other substance) of imparting color thereto; except that such term does not include any material which, by regulation, determined is used (or intended to be used) solely for a purpose or purposes other than coloring.

3 The term "color" includes black, white, and intermediate grays.

4 Nothing in subparagraph (b) of this paragraph shall be construed to apply to any pesticide chemical, soil or plant nutrient, or other agricultural chemical solely because of its effect in aiding, retarding, or otherwise affecting, directly or indirectly, the growth or other natural physiological processes of produce of the soil and thereby affecting its color,

whether before or after harvest.

(2) "**Adulterated**" means the condition of a food if it:

(a) Bears or contains any poisonous or deleterious substance in a quantity which may render it injurious to health;

(b) Bears or contains added poisonous or deleterious substance for which no safe tolerance has been established;

(c) Consists in whole or 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 whereby it may have been rendered injurious to health;

(e) Is in a container composed in whole, or in part, of any poisonous or deleterious substance which may render the contents injurious to health.

(3) "**Advance Preparation**" is defined as food that is prepared for future service beyond a specific meal. Advance preparation foods must be immediately cooled after cooking to 41°F or below within 4 hours.

(4) "**Approved**" means acceptable to the Chief, Bureau of Medicine and Surgery (CHBUMED) based on determination of conformity with principles, practices, and generally recognized standards that protect public health.

(5) "a_w" means water activity which is a measure of the free moisture in a food, is the quotient of the water vapor pressure of the substance divided by the vapor pressure of pure water at the same temperature, and is indicated by the symbol a_w.

(6) "**Beverage**" is a liquid for drinking, including water.

(7) "**Bottled Drinking Water**" means water that is sealed in bottles, packages, or other containers and offered for sale for human consumption.

(8) **"Bulk Food"** is defined as the greater part; the main mass or body and in most cases can be described by goods or cargo in large packages, boxes, bags, etc.

(9) **"Certification Number"** is a unique combination of letters and numbers assigned to a shellfish control authority to a molluscan shellfish dealer according to the provisions of the National Shellfish Sanitation Program.

(10) **CIP.**

(a) **"CIP"** means cleaned in place by the circulation or flowing by mechanical means through a piping system of a detergent solution, potable water rinse, and sanitizing solution onto or over equipment surfaces that require cleaning, such as the method used, in part, to clean and sanitize a frozen desert machine.

(b) **"CIP"** does not include the cleaning of equipment such as band saws, slicers or mixers that are subject to in place manual cleaning without the use of a CIP system.

(11) **"CFR"** means Code of Federal Regulations. Citations in this chapter to the CFR refer sequentially to the Title, Part, and Section numbers, such as 21 CFR 178.1010 refers to Title 21, Part 178, Section 1010.

(12) **"Code of Federal Regulations"** means the compilation of the general and permanent rules published in the Federal Register by the executive departments and agencies of the Federal Government which:

(a) Is published annually by the U.S. Government Printing Office;

(b) Contains FDA rules in 21 CFR, USDA rules in 7 CFR, and EPA rules in 40 CFR.

(13) **Comminuted.**

(a) **"Comminuted"** means reduced in size by methods including chopping, flaking, grinding, or mincing.

(b) **"Comminuted"** includes fish or meat products that are reduced in size and restructured or reformulated such as gefilte fish, formed roast beef, gyros, ground beef, and sausage;

and a mixture of two or more types of meat that have been reduced in size and combined, such as sausages made from two or more meats.

(14) **Common Dining Area.**

(a) "**Common dining area**" is a central location where people gather to eat at mealtime.

(b) "**Common dining area**" does not apply to a kitchenette or dining area located within a resident's private living quarters.

(15) "**Confirmed Disease Outbreak**" is a food borne disease outbreak in which laboratory analysis of appropriate specimens identifies a causative organism and epidemiological analysis implicates the food as the source of the illness.

(16) "**Consumer**" is a person who is a member of the public, takes possession of food, is not functioning in the capacity of an operator of a food establishment or food processing plant, and does not offer the food for resale.

(17) "**Corrosion Resistant Material**" means a material that maintains acceptable surface cleanability characteristics under prolonged influence of the food to be contacted, the normal use of cleaning compounds and sanitizing solutions, and other conditions of the use environment.

(18) "**Critical Control Point**" is a point or procedure in a specific food system where loss of control may result in an unacceptable health risk.

(19) "**Critical Item**" is a provision of HACCP that, if in noncompliance, is more likely than other violations to contribute to food contamination, illness, or environmental degradation.

(20) "**Critical Limit**" is the maximum or minimum value to which a physical, biological, or chemical parameter must be controlled at a critical control point to minimize the risk that the identified food safety hazard may occur.

(21) "**Cross Connection**" is any physical connection or arrangement between two otherwise separate piping systems, one of which contains potable water, and the other, water of unknown or questionable safety, steam, other gases or liquids, whereby there

may be a flow from one system to the other; any actual or potential connection between a public water supply and a source of contamination or pollution.

(22) **Drinking Water.**

(a) "**Drinking water**" means water that meets 40 CFR Part 141, National Primary Drinking Water Regulations.

(b) "**Drinking water**" is traditionally known as potable water.

(c) "**Drinking water**" includes the term "**water**" except where the term used connotes the water is not potable, such as boiler water, mop water, rainwater, wastewater, and nondrinking water.

(23) "**Dry Storage Area**" is a room or area designated for the storage of packaged or containerized bulk food that is not potentially hazardous to dry goods such as single service items.

(24) **Easily Cleanable.**

(a) "**Easily cleanable**" is a characteristic of a surface that:

1 Allows removal of soil by normal cleaning methods;

2 Is dependent on the material, design, construction, and installation of the surface; and

3 Varies with the likelihood of the surface's role in introducing pathogenic or toxigenic agents or other contaminants into food based on the surface's approved placement, purpose, and use.

(b) "**Easily cleanable**" includes a tiered application of the criteria that qualify the surface as easily cleanable as specified in subparagraph (a) of this definition to different situations in which varying degrees of cleanability are required such as:

1 The appropriateness of stainless steel for a food preparation surface as opposed to the lack of need for stainless steel to be used for floors or for tables used for

consumer dining; or

2 The need for a degree of cleanability for a utilitarian attachment or accessory in the kitchen as opposed to a decorative attachment or accessory in the consumer dining area.

(25) **Easily Movable.**

(a) "**Easily movable**" means weighing 14 kg (30 pounds) or less; mounted on casters, gliders, or rollers; or provided with a mechanical means requiring no more than 14 kg (30 pounds) of force to safely tilt a unit of equipment for cleaning; or

(b) Having no utility connection, a utility connection that disconnects quickly, or a flexible utility connection line of sufficient length to allow the equipment to be moved for cleaning of the equipment and adjacent area.

(26) "**Employee**" is the permit holder, person in charge, person having supervisory or management duties, person on the payroll, family member, volunteer, person performing work under contractual agreement, mess management specialist, mess cook, food service officer, or other person working in a food establishment.

(27) "**EPA**" refers to the U.S. Environmental Protection Agency.

(28) **Equipment.**

(a) "**Equipment**" is an article that is used in the operation of a food establishment such as a freezer, grinder, hood, ice maker, meat block, mixer, oven, reach-in refrigerator, scale, sink, slicer, stove, table, temperature measuring device for ambient air, vending machine, or water activity machine.

(b) "**Equipment**" does not include items used for handling or storing large quantities of packaged foods that are received from a supplier in a cased or overwrapped lot, such as hand trucks, forklifts, dollies, pallets, racks, and skids.

(29) "**Fish**" means fresh or saltwater finfish, molluscan shellfish, crustaceans, and other forms of aquatic animal life other than birds or mammals and includes any edible human food product derived in whole or in part from fish, including fish

that has been processed in any manner.

(30) "**Food**" means a raw, cooked, or processed edible substance, ice, beverage, or ingredient used or intended for use or for sale in whole or in part for human consumption, or chewing gum.

(31) **Food Borne Disease Outbreak.**

(a) "**Food borne disease outbreak**" is an incident, except as specified in subparagraph (b) of this definition, in which:

1 Two or more persons experience a similar illness after ingestion of a common food;

2 Epidemiological analysis implicates the food as the source of the illness.

(b) "**Food borne disease outbreak**" includes a single case of illness such as one person ill from botulism or chemical poisoning.

(32) "**Food Contact Surface**" means:

(a) A surface of equipment or a utensil with which food normally comes into contact; or

(b) A surface of equipment or a utensil from which food may drain, drip, or splash:

1 Into a food, or

2 Onto a surface normally in contact with food.

(33) "**Food Code**" is the current edition of the U.S. Public Health Service, Food and Drug Administration, "Food Code."

(34) "**Food Employee**" means an individual working with unpackaged food, food equipment or utensils, or food contact surfaces.

(35) **Food Establishment.**

(a) "**Food Establishment**" means an operation that stores, prepares, packages, serves, vends, or otherwise provides

food for human consumption:

1 Such as a food service facility, galley, restaurant; satellite or catered feeding location; catering operation if the operation provides food directly to a consumer or to a conveyance used to transport people; market; vending location; institution; or food bank; and

2 That relinquishes possession of food to a consumer directly, or indirectly through a delivery service such as a home delivery or grocery orders or a restaurant takeout orders, or delivery service that is provided by common carriers.

(b) "**Food Establishment**" includes:

1 An element of the operation such as a transportation vehicle or a central preparation facility that supplies a vending location or a satellite feeding location unless the vending or feeding location is permitted by the regulatory authority; and

2 An operation conducted in a mobile, stationary, temporary, or permanent facility or location: where consumption is on or off the premises; and regardless of whether there is a charge for the food.

(c) "**Food Establishment**" does not include:

1 An establishment that offers only prepackaged foods that are not potentially hazardous;

2 A produce stand that offers whole, uncut fresh fruits and vegetables;

3 A food processing plant;

4 A kitchen in a private home if only food that is not potentially hazardous is prepared for sale or service at a function such as a religious or charitable organization's bake sale if allowed by law and if the consumer is informed by a clearly visible placard at the sales or service location that the food is prepared in a kitchen that is not subject to regulation and inspection by the regulatory authority;

5 An area where food that is prepared as specified in subparagraph (c)(4) of this definition is sold or

offered for human consumption;

6 A kitchen in a private home, such as a small family day care provider, or a bed and breakfast operation that prepares and offers food to guests if the home is occupied, the number of available guests bedrooms does not exceed six, breakfast is the only meal offered, the number of guests served does not exceed 18, and the consumer is informed by statements contained in published advertisements, mailed brochures, and placards posted at the registration area that food is prepared in a kitchen that is not regulated and inspected by the regulatory authority; or

7 A private home that receives catered or home delivered food.

(36) **Food Processing Plant.**

(a) "**Food processing plant**" means a commercial operation that manufactures, packages, labels, or stores food for human consumption and does not provide food directly to a consumer.

(b) "**Food processing plant**" does not include a food establishment as defined in subparagraph (35b) above.

(37) **Game Animal.**

(a) "**Game animal**" means an animal, the products of which are food, that is not classified as cattle, sheep, swine, goat, horse, mule, or other equine in 9 CFR Subchapter A - Mandatory Meat Inspection, Part 301, as Poultry in 9 CFR Subchapter C - Mandatory Poultry Products Inspection, Part 381, or as fish as defined in subparagraph 1-201.10(B)(25).

(b) "**Game animal**" includes mammals such as reindeer, elk, deer, antelope, water buffalo, bison, rabbit, squirrel, opossum, raccoon, nutria and muskrat; and nonaquatic reptiles such as land snakes.

(c) "**Game animal**" does not include rarities such as ostrich, emu, and rhea.

(38) "**Grade A Standards**" means the requirements of the USPHS/FDA Grade A Pasteurized Milk Ordinance" and "Grade A Condensed and Dry Milk Products and Condensed and Dry Whey" with

which certain fluid and dry milk and milk products comply.

(39) "**General Use Pesticide**" is a pesticide that is not classified by EPA for restricted use as specified in 40 CFR 152.175.

(40) **Group Residence.**

(a) "**Group residence**" is a private or public housing corporation or institutional facility that provides living quarters and meals.

(b) "**Group residence**" includes a domicile for unrelated persons such as a retirement home or a long term health care facility.

(41) "**HACCP Plan**" is a written document that delineates the formal procedures for following the **H**azard **A**nalysis **C**ritical **C**ontrol **P**oint principles developed by the National Advisory Committee on Microbiological Criteria for Foods.

(42) "**Hazard**" means a biological, chemical, or physical property that may cause an unacceptable consumer health risk.

(43) "**Hermetically Sealed Container**" is a container designed and intended to be secure against the entry of microorganisms and, in the case of low acid canned foods, to maintain the commercial sterility of its contents after processing.

(44) "**Highly Susceptible Population**" is a group of persons who are more likely than other populations to experience food borne disease because they are immunocompromised or older adults and in a facility that provides health care or assisted living services, such as a hospital or nursing home; or preschool age children in a facility that provides custodial care, such as a child development center.

(45) "**Imminent Health Hazard**" is a significant threat or danger to health considered to exist when there is evidence sufficient to show that a product, practice, circumstance, or event creates a situation that requires immediate correction or cessation of operation to prevent injury based on:

(a) The number of potential injuries, and

(b) The nature, severity, and duration of the anticipated injury.

(46) "**Injected**" means manipulating a meat so that infectious or toxigenic microorganisms may be introduced from its surface to its interior through tenderizing with deep penetration or injecting the meat with juices which may be referred to as "injecting," "pinning," or "stitch pumping."

(47) "**Kitchenware**" means food preparation and storage utensils.

(48) "**Law**" means applicable military directives, local, state, and Federal statutes, regulations, and ordinances.

(49) "**Leftover**" means any unserved food remaining at the end of the meal period for which it is prepared.

(50) "**Linens**" are fabric items such as cloth hampers, cloth napkins, tablecloths, wiping cloths, and work garments including cloth gloves.

(51) "**Meat**" means the flesh of animals used as food including the dressed flesh of cattle, swine, sheep, or goats and other edible animals, except fish and poultry, that is offered for human consumption.

(52) "**mg/L**" is milligrams per liter, the metric equivalent of parts per million (ppm).

(53) "**Molluscan shellfish**" are any edible species of fresh or frozen oysters, clams, mussels, and scallops or edible portions thereof, except when the scallop product consists only of the shucked adductor muscle.

(54) **Packaged.**

(a) "**Packaged**" means bottled, canned, cartoned, securely bagged, or securely wrapped, whether packaged in a food establishment or a food processing plant.

(b) "**Packaged**" does not include a wrapper, carryout box, or other nondurable container used to containerize food with the purpose of facilitating food protection during service

and receipt of the food by the consumer.

(55) "**Pathogen**" means a disease causing agent or microorganism.

(56) "**Permit**" is the document issued by the regulatory authority that authorizes a person to operate a food establishment.

(57) "**Permit Holder**" means the entity that:

(a) Is legally responsible for the operation of the food establishment such as the owner, the owner's agent, or other person; and

(b) Possesses a valid permit to operate a food establishment.

(58) "**Person**" is an association, a corporation, individual, partnership, other legal entity, Government, or governmental subdivision or agency.

(59) "**Person in Charge**" is the individual present at a food establishment responsible for the operation at the time of inspection.

(60) **Personal Care Items.**

(a) "**Personal care items**" are substances that may be poisonous, toxic, or a source of contamination used to maintain or enhance a person's health, hygiene, or appearance.

(b) "**Personal care items**" include medicines, first aid supplies, cosmetics and toiletries.

(61) "**pH" is** the symbol for the negative logarithm of the hydrogen ion concentration, which is a measure of the degree of acidity or alkalinity of a solution. Values between 0 and 7 indicate acidity and values between 7 and 14 indicate alkalinity. The value of pure distilled water is 7, which is considered neutral.

(62) "**Physical Facilities**" means the structure and interior surfaces of a food establishment including accessories such as soap and towel dispensers and attachments such as light fixtures and heating or air-conditioning system vents.

(63) "**Plumbing Fixture**" is a receptacle or device that:

(a) Is permanently or temporarily connected to the water distribution system of the premises and demands a supply of water from the system; or

(b) Discharges used water, waste materials, or sewage directly or indirectly to the drainage system of the premises.

(64) "**Plumbing System**" means the water supply and distribution pipes; plumbing fixtures and traps; soil, waste, and vent pipes; sanitary and storm sewers and building drains, including their respective connections, devices, and appurtenances within the premises; and water treating equipment.

(65) "**Poisonous or Toxic Materials**" are substances that are not intended for ingestion and included in four categories:

(a) Cleaners and sanitizers, which include cleaning and sanitizing agents and agents such as caustics, acids, drying agents, polishes, and other chemicals;

(b) Pesticides, which include substances such as insecticides and rodenticides;

(c) Substances necessary for the operation and maintenance of the establishment such as nonfood grade lubricants and personal care items that may be deleterious to health;

(d) Substances that are not necessary for the operation and maintenance of the establishment and are on the premises for retail sale, such as petroleum products and paints.

(66) **PHF - Potentially Hazardous Food.**

(67) **Potentially Hazardous Food.**

(a) "**Potentially hazardous food**" means a food that is natural or synthetic and that requires temperature control because it is in a form capable of supporting:

1 The rapid and progressive growth of infectious or toxigenic microorganisms;

2 The growth and toxin production of *Clostridium botulinum;* or

3 In raw shell eggs, the growth of *Salmonella enteritidis*.

(b) **"Potentially hazardous food"** includes an animal food (a food of animal origin) that is raw or heat treated; a food of plant origin that is heat treated or consists of raw seed sprouts; cut melons; and garlic oil mixtures that are not acidified or otherwise modified at a food processing plant in a way that results in mixtures that do not support growth as specified under subparagraph (a) of this definition.

(c) **"Potentially hazardous food"** does not include:

1 An air-cooled hard-boiled egg with shell intact;

2 A food with a a_w value of 0.85 or less;

3 A food with a pH level of 4.6 or below when measured at 75° F (24° C);

4 A food in an unopened hermetically sealed container, that is commercially processed to achieve and maintain commercial sterility under conditions of nonrefrigerated storage and distribution; and

5 A food for which laboratory evidence demonstrates the rapid and progressive growth of infectious or toxigenic microorganisms or the growth of *S. enteritidis* in eggs or *C. botulinum* cannot occur, such as a food that has an a_w and a pH that are above the levels specified under subparagraphs (c)2 and 3 of this definition and that may contain a preservative, other barrier to the growth of microorganisms, or a combination of barriers that inhibit the growth of microorganisms.

6 A food that may contain an infectious or toxigenic microorganism or chemical or physical contaminant at a level sufficient to cause illness, but that does not support the growth or microorganisms as specified under subparagraph (a) of this definition.

(68) "**Poultry**" is any domesticated bird (chickens, turkeys, ducks, geese, or guineas), whether live or dead.

(69) "**Premises**" means:

(a) The physical facility, its contents, and the contiguous land or property under the control of the permit holder or food establishment;

(b) The physical facility, its contents, and the contiguous land or property and its facilities and contents that are under the control of the permit holder/food establishment that may impact food establishment personnel, facilities, or operations, if a food establishment is only one component of a larger organization such as a health care facility, hotel, motel, school, recreational camp, or prison.

(70) "**Preventive Medicine Authority (PMA)**" the medical department representatives responsible for public health (preventive medicine). This will be the senior environmental health officer/preventive medicine technician for the area of responsibility. In their absence Army veterinary technicians, independent duty corpsmen, senior general duty corpsmen or medical officers may be designated.

(71) "**Primal Cut**" is a basic major cut into which carcasses and sides of meat are separated. Examples include beef round, pork loin, lamb flank or veal breast.

(72) "**Prime Vendor**" is a commercial vendor designated by the Supply Department as an approved direct delivery vendor.

(73) "**Public Water System**" has the meaning stated in 40 CFR Part 141 National Primary Drinking Water Regulations.

(74) **Ready to Eat Food.**

(a) "**Ready to eat food**" means food in a form that is edible without washing, cooking, or additional preparation by the food establishment or the consumer and that is reasonably expected to be consumed in that form.

(b) "**Ready to eat food**" includes:

1 Unpackaged potentially hazardous food that is cooked to the temperature and time required for the specific food

under this chapter.

2 Raw, washed, cut fruits and vegetables;

3 Whole, raw, fruits and vegetables that are presented for consumption without the need for further washing, such as at a buffet; and

4 Other food presented for consumption for which further washing or cooking is not required and from which rinds, peels, husks, or shells are removed.

(75) **Reduced Oxygen Packaging.**

(a) "**Reduced oxygen packaging**" means the reduction of the amount of oxygen in a package by mechanically evacuating the oxygen; displacing the oxygen with another gas or combination of gases; or otherwise controlling the oxygen content in a package to a level below that normally found in the surrounding atmosphere, which is 21% oxygen.

(b) "**Reduced oxygen packaging**" includes methods that may be referred to as altered atmosphere, modified atmosphere, controlled atmosphere, low oxygen, and vacuum packaging including sous vide.

(76) "**Refuse**" means solid waste not carried by water through the sewage system.

(77) "**Regulatory Authority**" is the local, State, Federal enforcement body, or authorized representative having jurisdiction over the food establishment. In this publication the regulatory authority usually means the Preventive Medicine Authority.

(78) "**Restricted Use Pesticide**" is a pesticide product that contains the active ingredients specified in 40 CFR 152.175, Pesticides Classified For Restricted Use, and that is limited to use by or under the direct supervision of a certified applicator.

(79) "**Safe Material**" means:

(a) An article manufactured from or composed of materials that may not reasonably be expected to result, directly or indirectly, in their becoming a component or otherwise affecting the characteristics of any food;

(b) An additive that is used as specified in Paragraph 409 or 706 of the Federal Food, Drug, and Cosmetic Act.

(c) Other materials that are not additives and that are used in conformity with applicable regulations of the Food and Drug Administration.

(80) "**Sanitize or Sanitization**" is the application of cumulative heat or chemicals on cleaned food contact surfaces that, when evaluated for efficacy, yield a reduction of 5 logs, which is equal to 99.999% reduction, of representative microorganisms of public health importance.

(81) "**Sealed**" means free of cracks or other openings that allow the entry or passage of moisture.

(82) "**Servicing Area**" is an operating base where a mobile food establishment or transportation vehicle returns regularly for discharging liquid or solid wastes, refilling water tanks and ice bins, and boarding food.

(83) "**Sewage**" means liquid waste containing animal or vegetable matter in suspension or solution and may include liquids containing chemicals in solution.

(84) "**Shellfish Control Authority**" is a State, Federal, foreign, or other Government entity legally responsible for administering a program that includes certification of molluscan shellfish harvesters and dealers for interstate commerce.

(85) "**Shellstock**" means raw, in shell molluscan shellfish.

(86) "**Shucked Shellfish**" means molluscan shellfish that have had one or both shells removed.

(87) "**Single Service Articles**" include tableware, carry-out utensils, and other items such as bags, containers, placemats, stirrers, straws, toothpicks, and wrappers that are designed and constructed for one time, one person use.

(88) **Single Use Articles.**

(a) "**Single use articles**" are utensils and bulk food containers designed and constructed to be used once and

discarded.

(b) "**Single use articles**" include items such as wax paper, butcher paper, plastic wrap, formed aluminum food containers, jars, plastic tubs or buckets, bread wrap, pickle barrels, ketchup bottles, and number 10 cans which do not meet the materials, durability, strength and cleanability specifications for multiuse utensils.

(89) "**Slacking**" is the process of moderating food temperature by allowing a food to gradually increase from a temperature of -10°F (-23° C) to 25° F (-4° C) in preparation for deep-fat frying or to facilitate even heat penetration during the cooking of previously block frozen food.

(90) "**Smooth**" means:

(a) A food contact surface having a surface free of pits and inclusions with a cleanability equal to or exceeding that of (100 grit) number 3 stainless steel.

(b) A nonfood contact surface of equipment having a surface equal to that of commercial grade hot-rolled steel free of visible scale.

(c) A floor, wall, or ceiling having an even level surface with no roughness or projections that render it difficult to clean.

(91) "**Sous Vide**" is a method of packaging raw or partially cooked food, where the product is placed in a sealed pouch with the air removed. The pouch is cooked and refrigerated or frozen until needed, reheated and served.

(92) "**Support Animal**" is a trained animal that accompanies a person with a disability to assist in managing the disability and enables the person to perform functions the person would otherwise be unable to perform.

(93) "**Table Mounted Equipment**" means equipment that is not portable and is designed to be mounted off the floor on a table, counter, or shelf.

(94) "**Tableware**" means eating, drinking, and serving utensils for table use such as flatware including forks, knives, and spoons; hollowware including bowls, cups, serving dishes,

tumblers; and plates.

(95) "**Temperature Measuring Device**" is a thermometer, thermocouple, thermistor, or other device that indicates the temperature of food, air, or water.

(96) "**Temporary Food Establishment**" is a food establishment that operates for a period of no more than 14 consecutive days in conjunction with a single event or celebration.

(97) "**Utensil**" is a food contact implement or container used in the storage, preparation, transportation, dispensing, sale, or service of food, such as kitchenware or tableware that is multiuse, single service, or single use; gloves used in contact with food; and food temperature measuring devices.

(98) "**Vending Machine**" is a self-service device that, upon insertion of a coin, paper currency, token, card, or key, dispenses unit servings of food in bulk or in packages without the necessity of replenishing the device between each vending operation.

(99) "**Vending Machine Location**" is the room, enclosure, space, or area where one or more vending machines are installed and operated and includes the storage and servicing areas on the premises that are used to service and maintain the vending machines.

(100) "**Ware Washing**" is the cleaning and sanitizing of food contact surfaces of equipment and utensils.

(101) "**Water Activity (a_w)**" is a measure of the free moisture in a food, is the quotient of the water vapor pressure of the substance divided by the vapor pressure of pure water at the same temperature, and is indicated by the symbol a_w.

1-4 RESPONSIBILITIES

1-4.1 CHIEF, BUREAU OF MEDICINE & SURGERY
1-4.2 NAVAL MEDICAL TREATMENT FACILITIES
1-4.3 NAVY ENVIRONMENTAL AND PREVENTIVE MEDICINE UNITS AND NAVY ENVIRONMENTAL HEALTH CENTER
1-4.4 COMMANDER, NAVAL FACILITIES ENGINEERING COMMAND
1-4.5 COMMANDER, NAVAL SEA SYSTEMS COMMAND
1-4.6 COMMANDER, NAVAL SUPPLY SYSTEMS COMMAND
1-4.7 COMMANDANT OF THE MARINE CORPS
1-4.8 U.S. ARMY VETERINARY SERVICES
1-4.9 COMMANDING OFFICERS

1-4.1 Chief, Bureau of Medicine & Surgery (CHBUMED)

Establishes sanitary standards for food procurement, inspection on delivery, fitness for human consumption, storage and refrigeration, preparation and serving, and disposal of food residues. In addition, CHBUMED reviews and approves the sanitary aspects of standards, specifications, and design criteria prepared by other systems commands.

1-4.2 Naval Medical Treatment Facilities (MTFs)

Naval hospitals and clinics, through their preventive medicine departments, provide environmental health services intended to reduce the risk of food borne disease outbreaks including regular food service sanitation inspections and training. In addition, they conduct epidemiological investigations in the event of food borne outbreaks.

1-4.3 Navy Environmental and Preventive Medicine Units and Navy Environmental Health Center

Navy Environmental and Preventive Medicine Units(NAVENPVNTMEDUs), under the command of the Navy Environmental Health Center (NAVENVIRHLTHCEN), provide specialized consultation, advice, and recommendations in matters of preventive medicine and environmental health to Navy and Marine Corps activities, ashore and afloat. Services related to food safety include:

a. Food sanitation/safety instructor training programs;

b. Evaluation of food sanitation/safety programs;

c. Survey and recommendations concerning insect and vector problems;

d. Laboratory services;

e. Epidemiological investigation of food borne illness.

1-4.4 Commander, Naval Facilities Engineering Command

The Commander, Naval Facilities Engineering Command (COMNAVFACENGCOM) is responsible for the planning, design, and construction of public works at all shore activities, including messing and supporting facilities. COMNAVFACENGCOM also establishes inspection and maintenance standards. See Naval Facilities Engineering Command Modification Order (NAVFAC MO) 322, "Inspection for Public Works and Public Utilities," and NAVFAC MO-119, "Building Maintenance Galley Equipment."

1-4.5 Commander, Naval Sea Systems Command

The Commander, Naval Sea Systems Command is responsible for the design, construction and maintenance of messing facilities afloat. Structural standards are found in Naval Sea Systems Command (NAVSEA) S9AAO-AA-SPN-010/GEN-SPEC, "General Specifications for Ships of the United States Navy." Equipment standards are contained in the Naval Ships Technical Manual, Chapter 9340 (NSTM 9340), "Commissary Equipment."

1-4.6 Commander, Naval Supply Systems Command

The Commander, Naval Supply Systems Command (COMNAVSUPSYSCOM) administers the Navy Food Service Program.

a. The Deputy Commander for Support Services administers the subsistence program for the Navy. NAVSUP PUB 486 gives line of authority and direction for general mess operation.

b. COMNAVSUPSYSCOM (Code 51) has been delegated the responsibility for preparation of food service equipment specifications and has been tasked with the design of food service systems ashore and afloat.

(1) Navy Food Management Teams. Under the management of COMNAVSUPSYSCOM (Code 51), Navy Food Management Teams are composed of traveling instructors devoted to training food service personnel and assisting ships and field activities in improving the general messes. A preventive medicine technician (PMT) serves as a member of each team.

(2) Commands may obtain the services of these teams by submitting a request to COMNAVSUPSYSCOM (Code 51). Request procedures are located in NAVSUP PUB 486, Volume 1, Appendix J.

1-4.7 Commandant of the Marine Corps

a. The Commandant of the Marine Corps (CMC) administers the food service program for the Marine Corps which includes the procurement, storage, issue, accounting for the preparation, and serving of food in appropriated fund messing facilities.

b. Food Management Team, U.S. Marine Corps. The mission of the food management team is to render assistance in raising food quality, achieving economy, and increasing effectiveness at the various activities visited.

c. Information concerning the Food Service and Subsistence Management Programs within the Marine Corps may be found in Marine Corps Order P10110.14, "Food Service and Subsistence Management Manual."

1-4.8 U.S. Army Veterinary Services

As DoD Executive Agent for veterinary services, the U.S. Army Veterinary Service is responsible for all aspects of military veterinary medicine, to include food wholesomeness and food safety assurance mission. Regional veterinary service support commands are responsible for the development of a product verification program that will ensure the quality of food ordered at the food establishment. This program includes cursory spot checks, specific product audits, and special audits directed by Defense Personnel Support Activity (DPSA) or at the customer's request. Veterinary services should be utilized to the fullest extent possible by all Navy and Marine Corps food establishments. Services available are:

a. Training of ordering activity (receiving) personnel in evaluating food products at receipt, to include delivery vehicle sanitation and specific commodity knowledge.

b. Laboratory examination of food products.

c. Development of the approved lists of food suppliers and the publication of the "Directory of Sanitarily Approved Food Establishments for Armed Forces Procurement."

1-4.9 Commanding Officers

1-4.9.1 Introduction
1-4.9.2 Supply Officer
1-4.9.3 Food Service Officer
1-4.9.4 Preventive Medicine Authority
1-4.9.5 Person in Charge

1-4.9.1 Introduction

Each commanding officer has the ultimate responsibility for ensuring food and beverages served within their jurisdiction are safe and wholesome. Guidance and support regarding sanitary food preparation, however, must be provided by the supply and medical departments.

1-4.9.2 Supply Officer

The supply officer is responsible for procurement, receipt, inspection, storage, and issue of food items.

1-4.9.3 Food Service Officer

The food service officer is in direct charge of the food service division in a command and is responsible for the preparation, serving, and storage of food.

1-4.9.4 Preventive Medicine Authority (PMA)

The PMA is responsible for the following:

a. Routine inspection of all food establishments including:

(1) Surveillance to ensure sanitary storage, preparation, and serving of food, and for the disposal of food wastes;

(2) Sanitation surveillance of food service spaces and cleaning of equipment and utensils;

b. Sanitation inspection of Navy and Marine Corps exchange food outlets, e.g., restaurants, cafeterias, snack bars, auxiliary resale outlets, etc;

c. Fitness for human consumption inspections to ensure food items are received from approved sources;

d. Medical screening of food service personnel for disease or unclean habits;

e. The provision of food service sanitation training programs;

f. Review of local plans and design specifications relating to construction of new food establishments and renovation of existing facilities;

g. Pre-operational inspections conducted on all new food establishments;

h. Maintaining regular liaison with the U.S. Army Veterinary Services to ensure adequate services are provided.

i. In the absence of U.S. Army Veterinary Inspectors the PMA is responsible for sanitary inspections of Navy and Marine Corps commissaries.

j. Epidemiological investigations in the event of food borne outbreaks.

1-4.9.5 Person in Charge

The food establishment manager shall be the person in charge or shall designate a person in charge. In military galleys the food service officer or leading mess management specialist/cook shall normally be the person in charge. A person in charge shall be required on site as specified in Section 2-1.1 of this chapter. See Section 2-1 for more details on the person in charge.

Section II. MANAGEMENT AND PERSONNEL

2-1 SUPERVISION
2-2 EMPLOYEE HEALTH
2-3 PERSONAL CLEANLINESS
2-4 HYGIENIC PRACTICES

2-1 SUPERVISION

2-1.1 RESPONSIBILITY
2-1.2 KNOWLEDGE AND TRAINING
2-1.3 DUTIES

2-1.1 Responsibility (Assignment)

The food establishment manager/permit holder shall be the person in charge or shall designate a person in charge and ensure that a person in charge is present at the food establishment during all hours of operation for food facilities that are categorized as a risk type 3 or 4. Smaller food establishments that are categorized as a Risk Type 1 or 2 require one designated person in charge of the facility. Refer to Section 6-3.4 for explanations of risk categorization of food establishments.

2-1.2 Knowledge and Training

2-1.2.1 Knowledge Demonstration
2-1.2.2 Training Requirements

2-1.2.1 Knowledge Demonstration

2-1.2.1.A Person in Charge
2-1.2.1.B Food Employee

2-1.2.1.A Person in Charge

Based on the risks of food borne illness inherent to the food operation, during inspections and upon request, the person in charge shall demonstrate to the preventive medicine authority knowledge of food borne disease prevention, application of the hazard analysis critical control point principles, and the requirements of the NAVMED P-5010-1, as it relates to the food operation, by:

a. Describing the relationship between the prevention of food borne disease and the personal hygiene of a food employee;

b. Explaining the responsibility of the person in charge for preventing the transmission of food borne disease by a food employee who has a disease or medical condition that may cause food borne disease;

c. Describing diseases that are transmissible through food and the symptoms associated with the diseases;

d. Explaining the significance of the relationship between maintaining the time and temperature of potentially hazardous food and the prevention of food borne illness;

e. Explaining the hazards involved in the consumption of raw or undercooked meat, poultry, eggs, and fish.

f. Stating the required food temperatures and times for safe cooking of potentially hazardous food, including meat, poultry, eggs, and fish;

g. Stating the required temperatures and times for the safe refrigerated storage, hot holding, cooling, and reheating of potentially hazardous food;

h. Describing the relationship between the prevention of food borne illness and the management and control of the following:

(1) Cross contamination,

(2) Hand contact with ready-to-eat foods,

(3) Hand washing, and

(4) Maintaining the food establishment in a clean condition and in good repair;

i. Explaining the relationship between food safety and providing equipment that is:

(1) Sufficient in number and capacity, and

(2) Properly designed, constructed, located, installed, operated, maintained, and cleaned;

j. Explaining correct procedures for cleaning and sanitizing utensils and food contact surfaces of equipment;

k. Identifying the source of water used and measures taken to ensure it remains protected from contamination such as providing protection from backflow and precluding the creation of cross connections;

l. Identifying poisonous or toxic materials in the food establishment and the procedures necessary to ensure they are safely stored, dispensed, used, and disposed of according to current regulations;

m. Identifying critical control points in the operation; from purchasing through sale or service, that may contribute to food borne illness and explaining steps taken to ensure that the points are controlled by the requirements of this manual;

n. Explaining the details of how the person in charge and food employees comply with a HACCP plan, if a plan is required by current regulations, or an agreement between the regulatory authority and the establishment, and

o. Explaining the responsibilities, rights, and authorities assigned by this chapter to the:

(1) Food employee,

(2) Person in charge, and

(3) Preventive medicine authority (PMA)/regulatory authority.

2-1.2.1.B Food Employee

Based on the risks of food borne illness inherent to the food operation, during inspections and upon request, the employees shall demonstrate to the regulatory authority knowledge of food borne disease prevention, application of the hazard analysis critical control point principles, and the requirements of the NAVMED P-5010-1, as it relates to the food operation, by:

a. Describing the relationship between the prevention of food borne disease and the personal hygiene of a food employee;

b. Explaining the significance of the relationship between maintaining the time and temperature of potentially hazardous food and the prevention of food borne illness;

c. Stating the required temperatures and times for the safe refrigerated storage, hot holding, cooling, and reheating of potentially hazardous food; and

d. Explaining correct procedures for cleaning and sanitizing utensils and food contact surfaces of equipment.

2-1.2.2 Training Requirements

2-1.2.2.A Person in Charge
2-1.2.2.B Food Employee
2-1.2.2.C Food Employee Training Course
2-1.2.2.D Supervisor/Manager Training Course

2-1.2.2.A Person in Charge

An 18-hour supervisor/manager food service sanitation/food safety training course is required for all personnel designated as a person in charge. This training is required for new personnel prior to assuming the responsibilities as a person in charge. A refresher supervisor/manager course is required every 3 years. The supervisor/manager food service sanitation training course also certifies supervisors/managers to teach the 4-hour employee food safety course.

2-1.2.2.B Food Employee

a. All food service employees must receive a minimum of 4 hours initial food safety training. New food service personnel shall receive this 4 hours training within the first 30 days of employment. All food service employees must receive a minimum additional 4 hours annual food sanitation training. This requirement for annual training need not be conducted in a consecutive 4 hour block of time.

b. Temporary food service personnel assigned for 30 days or less must receive 2 hours initial training and orientation. Personnel assigned in excess of 30 days must receive the minimum 4 hours training required of food service personnel.

c. Bartenders that do not prepare food require 1 hour of initial food sanitation training.

2-1.2.2.C Food Employee Training Course

a. Food safety training must be offered per SECNAVINST 4061.1 series and if approved by the area PMA, other programs (such as the National Restaurant Association, ServSafe® Courses or the Educational Testing Service Program) that meet the

competency based requirements can be substituted. All training programs must be conducted by qualified food sanitation/safety instructors. Qualified food sanitation/safety instructors are:

(1) Independent duty Navy hospital corpsmen (must requalify every 3 years);

(2) Preventive medicine technicians;

(3) Environmental health officers;

(4) Personnel who supervise or train food service personnel and are successful graduates of a supervisor/manager food safety training course approved by the PMA (must re-qualify every 3 years).

b. Navy and Marine Corps food management teams may conduct food service sanitation training during official visits to commands provided the instructors are certified as required by SECNAVINST 4061.1 series.

c. The 4-hour employee food safety training course shall include the following topics.

(1) This course shall be based on the competencies listed in section 2-1.2.1.B of this chapter and consists of the following required topics.

(2) Topics:

(a) Personal Hygiene/Health Requirements

(b) Using Thermometers and Keeping Temperature Logs

(c) Inspection and Storage of Food

(d) Food Preparation and Serving

(e) Cleaning & Sanitizing

d. A separate Food Safety Training Certificate (NAVMED 4061/1) for each food employee, supervisor, and person in charge must be kept on file by the person in charge at the work location. Certificates will not be held by individual personnel except on the occasion of transfer or dismissal. These certificates must be verified by supervisory personnel and the PMA during routine sanitation inspections.

2-1.2.2.D Supervisor/Manager Training Course

a. Food service sanitation/food safety training must be offered per SECNAVINST 4061.1 series and if approved by the area PMA, other programs (such as the National Restaurant Association, Serving Safe Food/Applied Food Service Sanitation ServSafe® Courses or the Educational Testing Service Program) that meet the competency based requirements can be substituted. All training programs must be conducted by qualified food sanitation instructors. Instructors qualified to teach the food safety training for managers and supervisors are:

(1) Environmental health officers;

(2) Preventive medicine technicians;

(3) Other military and civilian personnel who are approved by the cognizant NAVENPVNTMEDU.

b. The 18-hour supervisor/manager food service sanitation/food safety training course shall include the following:

(1) This course shall be based on the competencies listed in section 2-1.2.1.A of this chapter and consists of the following:

(2) Topics:

(a) Administrative/Distribution of Materials

(b) Microbiology and Food borne Illness

(c) Personal Hygiene/Health Requirements

(d) Food Preparation and Serving

(e) Hazard Analysis of Critical Control Points (HACCP)

(f) Inspection and Storage of Food

(g) Ware Washing

(h) Pest Control in Food Service Areas

(i) Cleaning & Sanitizing of Food Service Equipment Safety

(j) Instructor Techniques

c. A refresher supervisor/manager food service sanitation/ safety training course is required every three years. The content and time requirements shall be under the direction of the area PMA.

d. Authority to teach the supervisor/manager food service sanitation training/refresher course resides with the area Environmental Health Officer (EHO) under the direction of the cognizant NAVENPVNTMEDU. Other organizations may request this authority by applying to the Navy Environmental Health Center (ATTN: Director for Preventive Medicine).

e. Instructors responsible for providing the supervisor/manager food service sanitation/safety training course have no specific "refresher course" requirements, but must maintain current knowledge of food service sanitation through continuing professional education.

2-1.3 Duties (Person in Charge)

The person in charge shall ensure that:

a. Food establishment operations are not conducted in a private home or in a room used as living or sleeping quarters.

b. Persons unnecessary to the food establishment operation are not allowed in the food preparation, food storage, or ware washing areas. Brief visits and tours may be authorized by the person in charge if steps are taken to ensure that exposed food, clean equipment, utensils, linens, unwrapped single service and single use articles are protected from contamination.

c. Employees and other persons such as delivery and maintenance persons and pesticide applicators entering the food preparation, food storage, and ware washing areas must comply with the provisions of this chapter.

d. Employees are effectively cleaning their hands, by routinely monitoring the employees' hand washing practices.

e. Employees are wearing clean outer clothing as specified in section 2-3.4 through daily visual inspection.

f. Employees are visibly observing foods as they are received to determine they are from approved sources, delivered at the required temperatures, protected from contamination, unadulterated, and accurately presented, by routinely monitoring the employees' observations and periodically evaluating foods upon their receipt.

g. Employees are properly cooking potentially hazardous food, being particularly careful in cooking those foods known to cause severe food borne illness and death, such as eggs and comminuted meats, through daily oversight of the employees' routine monitoring of the cooking temperatures

h. Employees are using proper methods to rapidly cool potentially hazardous foods that are not held hot or are not for consumption within 4 hours, through daily oversight of the employees' routine monitoring of food temperatures during cooling.

i. Consumers who order raw or partially cooked foods of animal origin are informed the food is not cooked sufficiently to ensure its safety.

j. Employees are properly sanitizing cleaned multiuse equipment and utensils before they are reused, through routine monitoring of solution temperature and exposure time for hot water sanitizing, and chemical concentration, pH, temperature, and exposure time for chemical sanitizing.

k. Consumers are notified that clean tableware is to be used when they return to self-service areas such as salad bars and buffets.

2-2 EMPLOYEE HEALTH

2-2.1 DISEASE OR MEDICAL CONDITION
2-2.2 PHYSICAL EXAMINATION (MEDICAL SCREENING)
2-2.3 EXCLUSIONS AND RESTRICTIONS
2-2.4 REMOVAL OF EXCLUSIONS AND RESTRICTIONS
2-2.5 PERSON IN CHARGE RESPONSIBILITIES
2-2.6 EMPLOYEE RESPONSIBILITIES

2-2.1 Disease or Medical Condition

2-2.1.1 Prohibited Diseases
2-2.1.2 Prohibited Symptoms

2-2.1.1 Prohibited Diseases

Prohibited diseases include illnesses caused by:

a. *Salmonella typhi*

b. *Shigella* spp.

c. *Escherichia coli* 0157:H7

d. *Hepatitis A* virus

2-2.1.2 Prohibited Symptoms

Prohibited symptoms caused by illness, infection, or other source that is:

a. Associated with an acute gastrointestinal illness such as:

(1) Diarrhea

(2) Fever

(3) Vomiting

(4) Jaundice

(5) Sore throat with fever

b. A lesion containing pus such as a boil or infected wound that is open or draining and is:

(1) On the hands or wrists, unless an impermeable cover such as a finger cot or stall protects the lesion and a single use glove is worn over the impermeable cover, and approved by the PMA.

(2) On exposed portions of the arms, unless the lesion is covered by a dry, durable, tight fitting bandage, and approved by the PMA.

2-2.2 Physical Examination (Medical Screening)

All food employees shall be medically screened for evidence of communicable disease prior to initial assignment in food service. The health screening does not normally include a physical examination but shall be sufficient to detect evidence of diseases that may be transmitted by food. Subsequent health screening (e.g., annual evaluation) is not routinely required. The health screening may be conducted by a physician or a non-physician health care provider, e.g., environmental health officer, nurse corps officer, preventive medicine technician, independent duty hospital corpsman, civilian nurse and civilian environmental health technician. Civilian food employees may be screened by local military medical facilities or they must present documentary evidence, acceptable to the local medical authority, that a complete and thorough health screening has been

accomplished. All screening shall be documented using a locally prepared special Standard Form 600, which shall be reviewed by the local medical authority. An example of this form is found in Appendix C.

2-2.3 Exclusions and Restrictions.

The local medical authority shall:

a. Exclude a food employee from a food establishment if the employee is diagnosed with an infectious agent specified in 2-2.1.1.

b. Restrict a food employee from working with exposed food clean equipment, utensils, and linens; and unwrapped single service and single use articles, in a food establishment if the food employee is:

(1) Suffering from a prohibited symptom specified in Section 2-2.1.2, or

(2) Is not experiencing a symptom of acute gastroenteritis specified in Section 2-2.1.2 but has a stool that yields a specimen culture that is positive for *Salmonella typhi, Shigella* spp., *Escherichia coli* O157:H7, or hepatitis A virus.

c. If the population served is a highly susceptible population, exclude a food employee who has symptoms specified in Section 2-2.1.2 or meets one or more of the following high risk conditions:

(1) Is suspected of causing, or being exposed to a confirmed disease outbreak caused by *S. typhi, Shigella* spp., *E. coli* O157:H7, or hepatitis A virus illness or

(2) Lives in the same household as a person who is diagnosed with a disease caused by *S. typhi, Shigella* spp., *E. coli* O157:H7, or hepatitis A virus infection,

(3) Lives in the same household as a person who attends or works in a setting where there is a confirmed disease outbreak caused by *S. typhi. Shigella spp., E. coli* O157:H7, or hepatitis A virus infection,

(4) Traveled out of the country within the last 50 calendar days.

2-2.4 Removal of Exclusions and Restrictions

The person in charge may reinstate an excluded food employee if the person in charge obtains approval from the local medical authority. The employee must provide written medical documentation from a physician licensed to practice medicine or the local military medical authority. The documentation must specify the excluded employee may work in an unrestricted capacity in a food establishment because the employee is free of the infectious agent of concern.

2-2.5 Person in Charge Responsibilities

2-2.5.1 Requirements for Initial Physical Examination (Medical Screening) of All Food Employees or Applicants

2-2.5.2 Requirements for Reporting of Active Disease Symptoms of All Food Employees or Applicants

2-2.5.1 Requirements for Initial Physical Examinations (Medical Screening) of All Food Employees or Applicants

The person in charge shall refer all food employees or applicants to the local medical authority for a physical examination (medical screening) prior to employment.

2-2.5.2 Requirements for Reporting of Active Disease Symptoms of All Food Employees or Applicants

The person in charge shall refer all food employees or applicants to the local medical authority or a licensed physician if the food employee or applicant has any symptoms or has been diagnosed with any diseases listed in this section. The person in charge shall not allow food employees or applicants to work until they have a written medical release from the local medical authority or a licensed physician.

2-2.6 Employee Responsibilities

All food employees or applicants shall report to the person in charge or to the local medical authority if the food employee or applicant has any symptoms or has been diagnosed with any diseases listed in this section. These food employees or applicants shall refrain from working until they have a written medical release from the local medical authority or a licensed physician.

2-3 PERSONAL CLEANLINESS

2-3.1 HANDS AND ARMS
2-3.2 FINGERNAILS
2-3.3 JEWELRY
2-3.4 OUTER CLOTHING
2-3.5 PERSONAL EFFECTS

2-3.1 Hands And Arms

2-3.1.1 Clean Condition
2-3.1.2 Cleaning Procedure
2-3.1.3 When to Wash
2-3.1.4 Where to Wash
2-3.1.5 Hand Sanitizers

2-3.1.1 Clean Condition

Food employees shall keep their hands and exposed portions of their arms clean.

2-3.1.2 Cleaning Procedure

Food employees shall clean their hands and exposed portions of their arms with a cleaning compound by vigorously rubbing together the surfaces of their lathered hands and arms for at least 20 seconds and thoroughly rinsing with clean water. Employees shall pay particular attention to the areas underneath the fingernails and between the fingers.

2-3.1.3 When to Wash

Food employees shall clean their hands and exposed portions of their arms as noted above at the following times:

a. After touching bare human body parts other than clean hands, and clean exposed portions of arms;

b. After using the toilet room;

c. After caring for or handling authorized support animals;

d. After coughing, sneezing, using a handkerchief or disposable tissue, using tobacco, eating, or drinking;

e. After handling soiled equipment or utensils;

f. Immediately before engaging in food preparation including working with exposed food, clean equipment and utensils, and unwrapped single service and single use articles;

g. During food preparation, as often as necessary to remove soil and contamination and to prevent cross contamination when changing tasks;

h. When switching between working with raw foods and working with ready to eat foods;

i. After engaging in other activities that contaminate the hands.

2-3.1.4 Where to Wash

a. Food employees shall clean their hands in a hand washing lavatory when available and should not clean their hands in a sink used for food preparation, in a service sink, or in a curbed cleaning facility used for the disposal of mop water and similar liquid waste unless no other facilities are available.

b. Conspicuous signs requiring hand washing must be posted in food service and toilet areas.

2-3.1.5 Hand Sanitizers

Hand sanitizers may be used in addition to regular hand washing. Consult the PMA for guidance concerning the use of hand sanitizers.

2-3.2 Fingernails

Food employees shall keep their fingernails trimmed short, filed, and maintained so the edges and surfaces are cleanable and not rough.

2-3.3 Jewelry

While preparing food, food employees may not wear jewelry on their arms and hands. This section does not apply to a plain ring such as a wedding band.

2-3.4 Outer Clothing

Food employees shall wear clean outer clothing. When moving from a raw food operation to a ready-to-eat food operation, food employees shall wear a clean outer covering over clothing or

change to clean clothing if their clothing is soiled.

2-3.5 Personal Effects

Clothing and personal effects of food service personnel must not be kept in food preparation and serving areas; nor will personnel use these same areas for changing their clothes.

2-4 HYGIENIC PRACTICES

2-4.1 FOOD CONTAMINATION PREVENTION
2-4.2 HAIR RESTRAINTS
2-4.3 ANIMALS

2-4.1 Food Contamination Prevention

2-4.1.1 Eating, Drinking, or Using Tobacco.
2-4.1.2 Discharges from the Eyes, Nose, and Mouth.

2-4.1.1 Eating, Drinking, or Using Tobacco

a. An employee shall not eat, drink, or use any form of tobacco except in designated areas, or as specified in paragraph b of this section. This policy should be particularly enforced where the contamination of any of the following may occur: exposed food; clean equipment, utensils, and linens; unwrapped single service and single use articles; or other items needing protection.

b. A food employee may drink from a closed beverage container if the container is handled to prevent contamination of:

(1) The employee's hands;

(2) The container;

(3) Exposed food; clean equipment, utensils, and linens; and unwrapped single service and single use articles.

2-4.1.2 Discharges from the Eyes, Nose, and Mouth

Food employees experiencing persistent sneezing, coughing, or a runny nose that causes discharges from the eyes, nose, or mouth may not work with exposed food; clean equipment, utensils, and linens; or unwrapped single service or single use articles.

2-4.2 Hair Restraints (Effectiveness)

a. Except as provided under paragraph b of this section, food employees shall wear hair restraints such as washable or disposable hats, hair coverings or nets, beard restraints, and clothing that covers body hair, that are designed and worn to effectively keep their hair from contacting exposed food; clean equipment, utensils, and linens; and unwrapped single service and single use articles. Washable hats shall be laundered regularly.

b. This section does not apply to food employees such as counter staff who only serve beverages and wrapped or packaged foods. Hostesses and wait staff present a minimal risk of contaminating exposed food, clean equipment, utensils, linens, and unwrapped single service and single use articles.

2-4.3 Animals

a. Food employees may care for their support animals if they wash their hands as specified in section 2-3.1.3 before working with exposed food; clean equipment, utensils, and linens; or unwrapped single service and single use articles. Support animals are only allowed in areas that are not used for food preparation.

b. Edible fish or decorative fish in aquariums, shellfish or crustacean on ice or under refrigeration, and shellfish and crustacean in display tanks are authorized.

c. Live animals must not be permitted in food establishments, except:

(1) Edible fish or decorative fish in aquariums, shellfish or crustacea on ice or under refrigeration, or shellfish and crustacea in display tank systems are allowed.

(2) Working dogs accompanying security or police officers in offices and dining/sales and storage areas, sentry dogs running loose in outside fenced areas, or support animals accompanying persons in dining/sales areas are allowed.

Section III. FOOD

3-1 PROCUREMENT, ACCEPTANCE & INSPECTION OF FOOD ITEMS
3-2 PROTECTION OF FOOD ITEMS FROM CONTAMINATION AFTER RECEIVING
3-3 DISPOSITION OF UNSATISFACTORY FOOD ITEMS
3-4 STORAGE AND CARE OF FOOD ITEMS
3-5 PREPARING AND SERVING OF FOOD
3-6 SPECIAL FACILITIES AND VENDING OPERATIONS
3-7 TEMPORARY FOOD SERVICE
3-8 HACCP INFORMATION

3-1 PROCUREMENT, ACCEPTANCE & INSPECTION OF FOOD ITEMS

3-1.1 PROCUREMENT OF FOOD ITEMS
3-1.2 ACCEPTANCE AUTHORITY
3-1.3 INSPECTION OF FOOD ITEMS

3-1.4 TEMPERATURE SPECIFICATIONS FOR RECEIVING OF FOOD ITEMS

3-1.1 Procurement of Food Items

a. The Subsistence Prime Vendor (SPV) Program is a major reengineering effort within the Department of Defense (Food Purchasing Procedures) whereby a single distributor serves as the major provider of product to various Federal customers within a geographical region or zone. Navy and Marine Corps dining facilities will no longer receive food items from Defense Logistics Agency(DLA) warehouses. The vendor supplies commercially available subsistence under a contractual agreement established by the Defense Personnel Support Activity (DPSC) - the lead agency for the SPV program. The SPV selected for each zone will deliver directly to dining facilities or a chosen location within 48 hours after ordering. The customer will select the number of deliveries and the day of the week deliveries should be made. At time of delivery, items are accepted or rejected by the ordering activity, rejections will be replaced by the SPV.

b. All food delivered by SPV to Navy and Marine corps will originate from facilities listed in the U.S. Army publication, *Directory of Sanitarily Approved Food Establishments*, or from one of the following establishments exempted from the listing:

(1) Establishments listed in USDA publication, *Meat and Poultry Inspection Directory*.

(2) Establishments listed in USDA publication, *List of Plants Operating Under USDA Poultry and Egg-grading and Egg Products Inspection Programs.*

(3) Establishments having a pasteurized milk compliance rating of 90 percent or higher, certified by a State Milk Sanitation Officer, and listed in the *Sanitation Compliance and Enforcement Ratings of Interstate Milk Shippers List* (IMSL). The IMSL is published quarterly by the U.S. Department of Health and Human Services; Public Health Service (PHS); FDA, Center for Food and Applied Nutrition, Office of Compliance, Division of Cooperative Programs, Milk Safety Branch.

(4) Establishments listed in the *Dairy Plants Surveyed and Approved for USDA Grading Service.*

(5) Fish establishments listed in Parts I, II, and III of the United States Department of Commerce (USDC) *Approved List of Fish Establishments and Products* published by the USDC, National Oceanic and Atmospheric Administration and the National Fisheries Service.

(6) Shellfish establishments listed in *Interstate Certified Shellfish Shippers List,* published monthly by the U.S. Department of Health and Human Services, Food and Drug Administration, Washington, DC.

(7) The following establishments are also exempt from the *Directory of Sanitarily Approved Food Establishments* listing:

(a) Food imported by distributors or brokers into the United States.

(b) Plants located in the United States that process food known to possess little or no potential health hazards. Specific exemptions from the directory listing of other plants are on an item by item basis. See Naval Supply Systems Command Instruction 4355.4 /AR 40-657/MCO P10110.31

3-1.2 Acceptance Authority

3-1.2.1 General Information
3-1.2.2 Meats and Poultry
3-1.2.3 Fish and Shellfish (seafood)
3-1.2.4 Fruits and Vegetables
3-1.2.5 Canned Products
3-1.2.6 Dry Food Items
3-1.2.7 Milk

3-1.2.8 Butter, Eggs and Cheese

3-1.2.1 General Information

a. Acceptance of supplies will be at the food establishment or at the delivery points chosen by the activity. The acceptance authority is assigned to the ordering activity. Each activity is responsible for accepting or rejecting supplies as they are received. The receiving official is the final authority on acceptance or rejection of product. The ordering activity shall designate, in writing, those individuals authorized to accept or reject supplies delivered under the Subsistence Prime Vendor Program.

b. Changes in procurement brought about by the SPV program will include greater efficiencies and better partnership with industry through such practices as just in time deliveries, best value contracting, shared production agreements and electronic data interchange. However, some of basic concepts have not changed. They are as follows:

(1) All foods delivered to Navy and Marine Corps food establishments will originate from approved food establishments. See section 3-1.1b.

(2) Deliveries made under SPV do not need to be inspected by the Army Veterinary Inspector or the PMA prior to being accepted. (NOTE): Suspected unwholesome products of any kind will not be accepted without the concurrence of the responsible PMA.

(3) Fitness for human consumption is still required on any local purchase food items not delivered by the SPV.

c. When deliveries are made to a Navy or Marine Corps food establishment by a subsistence prime vendor or a subcontractor under a prime vendor contract, inspection of delivery product by the PMA or Army veterinary personnel is not required. However, when requested by the food service officer or representative, the PMA will assist with any determination concerning food that is delivered deteriorated, contaminated, or infested.

d. Fitness for human consumption inspections must be conducted by the PMA both ashore and afloat. These inspections will be conducted only on locally purchased food items that were not obtained from an SPV and were not inspected by U.S. Army veterinary service personnel.

e. The PMA concerned with food inspections ashore should maintain liaison with local personnel of the U.S. Army veterinary services, USDA, and/or USDC inspectors to avail themselves of

general information and techniques involved in food inspection.

f. Food inspections afloat should be made in the company of the supply officer or representative, thus a combination of knowledge and training can result in an effective inspection program.

g. The practice of sound judgement, coupled with experience and common sense will help determine what items are fit or unfit. Foul odor and unnatural appearance, as determined by the PMA, are causes for rejection.

3-1.2.2 Meats and Poultry

a. In the United States all meat and poultry purchased from subsistence prime vendors or a subcontractor under a prime vendor contract must have originated from plants operating according to all USDA requirements and the law. In overseas areas where meats, meat products, poultry, and poultry products cannot be obtained from plants under Federal or State inspection systems, the U.S. Army Veterinary Service provides inspection services. These approved plants are listed in the *Directory of Sanitarily Approved Food Establishments.*

b. Guidelines for receipt of meats and poultry may be found in NAVSUP PUB 421 AND NAVSUP PUB 486.

3-1.2.3 Fish and Shellfish (seafood)

a. Fish may not be received from subsistence prime vendors Unless they are legally caught, harvested, and obtained from a source listed in *Directory of Sanitarily Approved Food Establishments or USDC Approved List of Fish Establishments and Products.*

b. Fish must be carefully inspected. Refrozen fish must not be used. Fresh fish have bright red gills, prominent clear eyes and firm elastic flesh. Stale fish are dull in appearance, have cloudy and red bordered eyes and soft flesh; finger impressions are made easily and remain when digital pressure is released.

c. Fish caught over the side at sea must not be consumed.

3-1.2.4 Fruits and Vegetables

Inspections of fresh fruits and vegetables are based on USDA standards. Use common sense when inspecting fruits and vegetables. For additional information refer to NAVSUP 421.

3-1.2.5 Canned Products

a. Foods in hermetically sealed containers shall be obtained from an approved source. The use of home canned foods is prohibited.

b. Canned foods shall be inspected upon delivery. Do not accept defective canned goods.

c. Do not serve food from cans with abnormal odor, taste or appearance, or from containers showing abnormalities such as dented seams, bulging, swelling or leakage and rusting - particularly at the seams. Identify suspect canned foods, set them aside and hold for inspection by the PMA or the veterinary service.

3-1.2.6 Dry Food Items

a. Dry food items, other than canned goods, include such foods as cereals, sugar, dried fruits/vegetables, flour and meal. They must be stored under controlled conditions of temperature, humidity and air circulation.

b. Insects, particularly cockroaches and stored products pests, are often transported from one location to another concealed among bulk food items such as potatoes and onions or in and on cartons used to hold other dry food items. Therefore, pierside inspection of these items is essential.

3-1.2.7 Milk

a. Only Grade A 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. Milk and fluid milk products for drinking purposes will be procured and served in the original, unopened, individual container of one pint or less, packaged at the milk plant, or be procured in containers approved for use with bulk milk dispensers. The PMA may approve use of original one gallon containers.

(1) An exception is granted for child development center programs. At child development center programs, milk may be transferred from bulk milk dispensers, commercial one gallon or smaller containers to small, clean, sanitized serving pitchers.

The pitchers will be covered and transported immediately to child activity rooms. All milk remaining in the serving pitchers will be discarded.

d. Individual, single service, disposable containers of one 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, or to individuals under similar conditions.

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

f. Delivery inspections of dairy products are normally conducted by personnel attached to the receiving activity. Inspectors must ensure milk and milk products are from an approved source and delivered in containers which are in good condition, properly sealed, organoleptically acceptable, and that the temperature of the product on delivery is 45°F or less or under the current procurement contract.

g. Vehicles used in transportation of milk in its final delivery containers must be refrigerated, constructed with permanent tops and sides, and must be clean. The use of ice on tops of milk cartons for cooling milk during delivery or on the serving line is prohibited.

3-1.2.8 Butter, Eggs and Cheese

a. Butter. Butter should be received in clean, unbroken cases. The color should be uniform and the texture firm.

b. Shell Eggs.

(1) Shell eggs shall be received clean and sound and may not exceed the restricted egg tolerances for U.S. Consumer Grade B as specified in 7 CFR Part 56 - Regulations Governing the Grading of Shell Eggs and U.S. Standards, Grades, and Weight Classes for Shell Eggs, and 7 CFR Part 59 - Regulations Governing the Inspection of Eggs and Egg Products.

(2) Shell eggs must be received at 45° F or less and cooled and maintained at 41° F or below.

(3) Liquid, frozen, or dry eggs and egg products shall be obtained pasteurized.

c. Cheese may be received in either natural or processed form. The rind should be clean and free from mold or wrinkles. Moldy cheese must not be sold or served unless it has been reconditioned. Cheese is reconditioned when the following criteria are followed:

(1) If the cheese has been held at 41°F, a ½ inch layer is removed and the moldy portions are discarded.

(2) The cutting must be performed so that mold contamination of the new surfaces is prevented.

(3) Cheese with high moisture content (e.g., cream and cottage) or with mold filaments which deeply penetrate the surfaces, and cheese portions too small to be reconditioned, must be discarded.

(4) All cheese procured for use by the Navy and Marine Corps is manufactured and labeled as required by 21 CFR 133.

3-1.3 Inspection of Food Items

a. The U.S. Army Veterinary Inspector (AVI) and the Navy PMA will assume a new role in support of food inspection and the acceptance of subsistence delivered to DoD activities under the Subsistence Prime Vendor Program. AVIs perform three types of product compliance evaluations under prime vendor: cursory, routine, and special compliance evaluations. The basic concept of these inspections and the acceptance of food evaluations, are as follows:

(1) The person in charge or designated representative at the receiving activities are responsible and have the authority to accept or reject subsistence delivered under the Subsistence Prime Vendor Program. AVIs will not normally be available to perform a wholesomeness determination on every delivery nor will the Navy PMA be required to be present at time of delivery to determine wholesomeness. Day-to-day quality assurance is the responsibility of the ordering activity.

(2) The person in charge or designated representative must ensure that authorized receiving individuals conduct a sanitary inspection of the vehicle and determine the identity, quantity and condition on all items received. AVIs will perform random sampling, called "cursory product compliance evaluation" of deliveries to evaluate wholesomeness of subsistence.

(3) AVIs are responsible for providing timely wholesomeness determinations on food items delivered to or accepted at prime vendor delivery points (receiving activities).

AVIs will not impede deliveries to accommodate any product or any product evaluations unless they identify unwholesome products or unsanitary vehicle conditions.

(4) When products of questionable quality are identified prior to acceptance, authorized receiving individual's may request that AVIs or the Navy PMA provide guidance on or actually perform expedited product quality evaluations on deliveries.

(5) Routine Product Compliance Evaluations are performed to ensure food items comply with packaging and marking, best value for their intended use, satisfaction by customer, wholesomeness and at a minimum, count, condition and identity are determined. AVIs evaluate food products against applicable vendor specifications. Generally, cooking of product is not involved and the evaluation is done on-site at the food establishment. Items selected for Routine Compliance Evaluation are food items which have caused customer dissatisfaction.

(6) Special Product Compliance Evaluations are performed to ensure items meet **all** requirements in the specifications under which they were procured and they are wholesome. Special evaluations may involve cooking or other forms of processing and will be performed on-site at the food establishment by the AVI. However, food service authorities at any location may request evaluation of items other than or in addition to those scheduled for a Special Product Compliance Evaluation.

b. Inspection of food items conducted without the assistance of AVIs or the Navy PMA should be approached using common sense and knowledge obtained through food service sanitation training. If food has a foul odor or appears unnatural, it is cause for rejection and should be immediately reported through the chain of command.

3-1.4 Temperature Specifications for Receiving of Food Items

a. Except as specified in paragraph b of this section, refrigerated, PHF shall be at a temperature of 41°F (5°C) or below when received.

b. If a temperature other than 41°F (5°C) for a PHF is specified in the law(s) governing its distribution, such as laws governing milk, molluscan shellfish and shell eggs, the food may be received at the specified temperature.

c. PHF that is cooked to a temperature required by section 3-5 and received hot shall be maintained at a temperature of 140°F (60°C) or above.

d. A food that is labeled frozen and shipped frozen by a food processing plant shall be received frozen.

e. Upon receipt, PHF shall be free of evidence of previous temperature abuse.

3-2 PROTECTION OF FOOD ITEMS FROM CONTAMINATION AFTER RECEIVING

3-2.1 PREVENTING CONTAMINATION FROM HANDS
3-2.2 PREVENTING CONTAMINATION WHEN TASTING
3-2.3 PACKAGED AND UNPACKAGED FOOD - SEPARATION, PACKAGING AND SEGREGATION
3-2.4 FOOD STORAGE CONTAINERS, LABELED WITH COMMON NAME OF FOOD
3-2.5 PASTEURIZED EGGS, SUBSTITUTE FOR SHELL EGGS FOR CERTAIN RECIPES AND POPULATIONS
3-2.6 WASHING FRUITS AND VEGETABLES
3-2.7 ICE USED AS EXTERIOR COOLANT, IS PROHIBITED FROM REUSE
3-2.8 SINGLE USEGLOVES, USED FOR ONE PURPOSE AND DISCARDED

3-2.1 Preventing Contamination From Hands

a. Food employees shall wash their hands as specified under section 2-3.1.

b. Except when washing fruits and vegetables, food employees must not touch exposed, ready-to-eat food with their bare hands and shall use suitable utensils such as deli tissue, spatulas, tongs, single use gloves or other dispensing equipment to handle food products.

c. Food employees shall minimize bare hand and arm contact with exposed food that is not in a ready-to-eat form.

3-2.2 Preventing Contamination When Tasting

A food employee may not use a utensil more than once to taste food that is to be sold or served.

3-2.3 Packaged and Unpackaged Food - Separation, Packaging and Segregation

a. Food shall be protected from cross contamination by separating raw animal foods during storage, preparation, holding, and display from:

(1) Raw ready-to-eat food including raw animal food such as fish for sushi or molluscan shellfish, or other raw ready-to-eat food such as vegetables; and

(2) Cooked ready-to-eat food.

b. Except when combined as ingredients, separate types of raw animal foods from each other such as beef, fish, lamb, pork, and poultry during storage, preparation, holding, and display by:

(1) Using separate equipment for each food type; or

(2) Arranging each type of food in equipment so that cross contamination of one type with another is prevented; and

(3) Preparing each type of food at different times or in separate areas.

c. Cleaning equipment and utensils and sanitizing as specified in this chapter;

d. Storing food in packages, containers, or wrappings;

e. Cleaning hermetically sealed containers of food of visible soil before opening;

f. Protecting food containers that are received packaged together in a case or overwrap from cuts when the case or overwrap is opened;

g. Clearly distinguishing damaged, spoiled, or recalled food being held in the food establishment;

h. Separating fruits and vegetables, before they are washed.

3-2.4 Food Storage Containers, Labeled with Common Name of the Food

Containers holding food or food ingredients shall be labeled with the common name of the food. Containers holding food that can be readily and unmistakably recognized (e.g., dry pasta, bread) need not be identified.

3-2.5 Pasteurized Eggs, Substitute for Shell Eggs for Certain Recipes and Populations

Pasteurized liquid, frozen, or dry eggs or egg products shall be substituted for shell eggs in the preparation of:

a. Foods such as Caesar salad dressing, hollandaise or béarnaise sauce, mayonnaise, eggnog, ice cream, and egg-fortified beverages.

b. Eggs for a highly immunocompromised or otherwise susceptible population.

3-2.6 Washing Fruits and Vegetables

a. Raw fruits and vegetables shall be thoroughly washed in water to remove soil and other contaminants before being cut, combined with other ingredients, cooked, served, or offered for human consumption in ready-to-eat form.

b. Vegetables of uncertain origin and those purchased in foreign countries, as well as those suspected of being contaminated with pathogenic organisms, must be chemically disinfected by immersion for at least 15 minutes in a 100 ppm Free Available Chlorine(FAC) solution or for 30 minutes in a 50 ppm FAC solution (or other approved solution). Following disinfection, vegetables must be thoroughly rinsed with potable water before being cooked or served. A 100 ppm chlorine solution can be made by adding 3 tablespoons of 5% sodium hypochlorite to 5 gallons of water; use 1½ tablespoons for a 50 ppm solution. Head items such as lettuce, cabbage, celery, etc., must be broken apart before disinfection.

3-2.7 Ice used as Exterior Coolant is Prohibited from Reuse

Ice may not be used as food after it has been used as a medium for cooling the exterior surfaces of food such as melons or fish, packaged foods, canned beverages, or cooling coils and tubes of equipment.

3-2.8 Single use Gloves, used for one Purpose and Discarded

If used, single use gloves shall be used for only one task such as working with ready-to-eat food or with raw animal food, used for no other purpose, and discarded when damaged or soiled, or when interruptions occur in the operation.

3-3 DISPOSITION OF UNSATISFACTORY FOOD ITEMS

a. The discovery of a hazardous food item in a military food establishment will:

(1) Be reported by the person in charge by OP-IMMEDIATE message to the Defense Personnel Support Center, Philadelphia ATTN: DPSC-HQS (Consumer Safety Officer). The mailing address is 2800 South 20th Street, Philadelphia, PA 19145. Commercial telephone: (215) 737-3845; DSN: 444-3845; FAX: (215) 737-7526. Message plad is DPSC PHILADELPHIA PA.

(2) The person in charge shall place the item on medical hold and submit samples and tests of the suspected food as follows:

(a) Shore activities. Samples of the product (both normal and abnormal) will be submitted when considered necessary by the PMA or veterinary representative. Samples will be sent with an original and four copies of DD Form 1222, Request for Results of Tests.

(b) Ships. At the direction of the PMA, samples of the food product both normal and abnormal, will be turned into the nearest Navy shore activity which will arrange for veterinary inspection of the product as in section (a) above.

(c) Submit samples to one of the following addresses, as appropriate.

(d) Veterinary Laboratories:

CONUS:

DoD Veterinary Laboratory
2472 Schofield Road
Bldg 2632
Fort Sam Houston, TX 78234

Hawaii:

Veterinary Services, TAMC
ATTN: Food Analysis Laboratory
Bldg 936 Duck Road
Schofield Barracks, HI 96859-5460

Europe:

Veterinary Laboratory
Gebaube 3810
6790 Landstuhl Kirchberg Germany

Panama:

Veterinary Public Health Lab
Bldg 502
USAMEDDAC
APO AA34004-5003 Corazal Republic of Panama

b. NAVSUP Publication 486, Volume 1, Food Service Management-General Messes, provides a line-by-line procedure for the preparation, addressing, and information copies of the message and DD Form 1222.

c. Hazardous food items are products which would certainly or possibly cause, or suspected to have already caused, harm when consumed. Such items may be unfit for human consumption, suspected of being unfit for human consumption, or suspected to be the source of a food borne disease outbreak. Determination of "fitness for human consumption" is the responsibility of the PMA.

d. Examples of hazardous food items are:

(1) Widespread presence of swollen or leaking cans, (The contents of bulged or swollen cans should never be consumed or even tasted);

(2) Products with offensive or unusual odors and colors and/or any other evidence of deterioration, spoilage, or contamination. (Try to determine whether or not the hazardous condition is due to an isolated instance, excessive storage, or mishandling prior to reporting the item hazardous);

(3) Food items containing glass, dirt, pieces of metal, etc.

(4) Any apparently wholesome food items which, based on the best medical knowledge available, is suspected or known to harbor disease causing agents. (Food items which have become hazardous due to overage, mishandling while in the custody of the user, or other isolated instances of abuse will not be reported under these procedures).

(5) Infested with insects.

3-4 STORAGE AND CARE OF FOOD ITEMS

3-4.1 GENERAL INFORMATION
3-4.2 REFRIGERATED STORAGE
3-4.3 HEATED STORAGE
3-4.4 SEMIPERISHABLE FOOD
3-4.5 FRESH AND FROZEN FOOD
3-4.6 FOOD STORAGE PROCEDURES
3-4.7 ICE
3-4.8 SALVAGE OF FOOD EXPOSED TO REFRIGERATION FAILURE

3-4.1 General Information

a. Proper food storage minimizes contamination and improves shelf life. Food, whether raw or prepared, if removed from the container or package in which it was obtained, shall be stored in a clean, covered container. Container covers shall be impervious and nonabsorbent, except clean linens or napkins may be used for covering small quantities of bread or rolls. Solid cuts of meat will be 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 shall be provided to prevent cross contamination.

b. Containers or bulk lots of food will be stored 6 inches (15 cm) above the floor and 4 inches (10 cm) from the walls, on clean racks, dollies, non wood pallets, or other easily cleanable surfaces. Storage racks and dollies should be easily moveable to facilitate inspection and cleaning. Wood pallets must not be used for food storage.

c. Do not store food or clean equipment including single service utensils in locker areas, toilet rooms, open stairwells or vestibules, garbage rooms, or mechanical areas, including boiler, electrical or telephone control rooms and elevator shafts.

d. Do not store food or food containers under exposed or unprotected sewer lines, steam, water or waste lines or other pipes on which condensation forms, under leaking automatic fire sprinkler systems or other sources of contamination. (Note: In existing facilities violating this requirement, the PMA will determine the need for; drip pans or other shielding to intercept and direct potential dripping or condensate into a sanitary waste line, insulation, relocation, renovation of storage areas or other corrective action).

e. Food not subject to further washing or cooking before serving will be stored in a way that protects it against cross contamination. Separate refrigerated storage units should be used for raw meats and seafood. If a unit is used to store both raw and cooked foods, raw meats and fish should be covered and stored below any cooked foods, or foods such as salads, which will receive no cooking or reheating before serving.

f. Nonacidic bulk food, such as cooking oil, syrup, salt, sugar, or flour, should be stored in the original product package or container.

(1) If bulk packages of flour, sugar and similar items are open, store packages in containers with tight fitting lids that meet NSF International standards for food service. Label the container with the common name of the food. The plastic garbage bags available through the supply system generally do not meet requirements for food contact.

g. Do not use galvanized metal cans for storage of wet foods or beverages.

h. Only food items will be stored in food storage spaces.

3-4.2 Refrigerated Storage

a. Proper temperature control is the most effective means of minimizing the risk of food borne illness and reducing loss through spoilage. One "nonproduct" or built-in air measuring thermometer must be provided in all refrigerated storage spaces. Thermometers or air measuring devices must be readily observable, easily readable, numerically scaled, and accurate to $\pm 3°F$ at the critical range. Mercury thermometers are prohibited. The temperature sensor of the thermometer must be positioned to register the warmest air in the refrigerated space.

(1) To maintain product temperatures, check refrigerator temperature frequently, especially at times of peak load and low load. Make adjustments as required.

(2) Primary attention should be placed on monitoring product temperatures.

(3) Required temperature ranges are 32-41°F for refrigeration and 0°F or below for freezers.

(4) Frost or glaze ice must not be allowed to accumulate to more than 1/4 inch in thickness on the interior surfaces or on the refrigeration coils.

(5) The interior surfaces of refrigerated storage units must be routinely washed with warm water and hand ware washing detergent then rinsed with warm potable water.

(6) Temperature logs must be maintained for all bulk cold storage spaces. Accurate entries will be made at least twice daily. Any prolonged deviation (more than 4 hours) from the recommended storage temperatures must be promptly reported to the food service officer and PMA for appropriate action;

(7) Refrigerators that contain advance prepared PHF will also have temperatures logged twice daily. Logs must be maintained in the facility for at least 1 year.

b. PHF requiring refrigeration after preparation will be cooled to an internal product temperature of 41°F or below within 4 hours.

c. Frozen food will be kept frozen and stored at a product temperature of 0° F or below. Ice cream being dispensed by a scoop can be held between 6°F and 10°F to facilitate serving.

d. Wet storage of food is prohibited, except for short term holding (24-36 hours) of peeled or sliced potatoes, carrots, and celery sticks. Wet storage of live lobsters is authorized prior to preparation.

e. All food stored in refrigerated storage units will be covered or otherwise protected from contamination. See section 3-5.6 for cooling procedures.

f. Direct storage of raw or prepared foods, except for unpeeled hard skin fruits and vegetables, on refrigerator shelves is prohibited.

g. Foods protected in single shelf refrigerated display cases are not required to be individually covered.

3-4.3 Heated Storage

a. Provide sufficient conveniently located hot food holding units to assure the maintenance of food at the required temperature during holding. Each piece of equipment used for holding PHF will be provided with an easily readable numerically scaled indicating thermometer, accurate to ±3°F, located to measure the air temperature in the coolest part of the unit and placed to be easily readable. Recording thermometers, accurate ±3°F, 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 or insulated food transport carriers, a sanitized product thermometer will be available and used to check the internal product temperature of the food.

b. PHF that is cooked, cooled and reheated for hot food holding or transport shall be rapidly reheated, within 2 hours, so all parts of the food reach an internal product temperature of at least 165°F (74°C) for at least 15 seconds.

(1) Food reheated in a microwave shall be covered, rotated and stirred until the internal product temperature reaches 165°F, then it must remain covered for 2 minutes to obtain temperature equilibrium.

(2) Ready to eat food from a commercially processed, hermetically sealed container or packaging shall be heated to a temperature of at least 141°F for hot holding.

(3) Hot food holding containers shall be preheated to at least 145°F prior to placing hot food in the containers. Where possible, boiling water shall be used for preheating.

c. Steam tables, warmers, or other hot food storage units are not designed for rapid heating of PHF and shall not be used for heating food items.

3-4.4 Semi Perishable Food

a. The term "semiperishable" refers to food items that are canned, dried, dehydrated, or otherwise processed to the extent that such items, under normal circumstances, may be stored in nonrefrigerated spaces.

b. Semiperishable food items shall be considered overaged when stored in excess of the inspection test date marked on the case and/or the keeping time shown in the semiperishable food storage table of NAVSUP PUB 476, volume 1, chapter 5. The U.S. Army Veterinary Service, at stock points, inspects overaged food items and warehouse personnel mark the cases and/or the DD Form 1348-1 of those items that are in good condition to indicate the keeping time has been extended. Even when items are not so marked, they will be considered fit for use if the container is in good condition and the food item has no offensive odor and is palatable. Overaged items are not considered suitable for continued storage unless they have been extended by a qualified inspector. Extended food items must be consumed as soon as feasible. Items must not be surveyed solely because of age. Outdated food items will be surveyed only if a qualified

inspector finds them to be unfit for human consumption.

c. When inspecting storerooms, the outward appearance of food containers and the condition of the foods must be checked. Torn or broken bags of food must be immediately used, transferred to insect proof containers or surveyed. If an insect infestation is discovered, several specimens should be carefully collected and sent for species identification to the nearest military activity capable of identifying insects. A report of suspected hazardous food items must be submitted as required by NAVSUP PUB 486, Volume 1.

d. Heavily infested food, i.e. seven or more living or dead insects per pound must be surveyed (see MIL-STD-904A). Lightly infested food should be immediately removed, placed in a freezer for 72 hours, sifted to remove the insects and used as soon as possible, except as follows:

(1) When an infestation is found to involve living or dead larval stages of an insect species belonging to the genus *Trogoderma*, or other dermestids, one insect within the product itself (not external) will be justification for the condemnation of the container or bag;

(2) When an infestation is found to involve living or dead insect species belonging to the genus *Tribolium*, three insects per pound within the packages inspected will be justification for the condemnation of the lot.

(3) When an infestation is found to involve insects other than those belonging to the genus *Trogoderma* (or other dermestids) or *Tribolium*, an average of seven or more insects per pound of product, in the lot being inspected, shall be justification for condemnation of that lot.

e. It is important to remember that 72 hours in a freezer will arrest the development of the infestation but will not kill all of the insects. To kill all insects in all stages, the infested product must be kept at 0°F or below for 2 weeks. When insect infestations are discovered, they must be handled by Chapter 8, Medical Entomology and Pest Control Technology, of this manual, NAVMED P-5010.

3-4.5 Fresh and Frozen Food

a. To promote proper air circulation, fresh and frozen food items must be stored on pallets or one inch high deck grating away from bulkheads and cooling coils. At least 6 inches of clearance must be maintained between the tops of the stacks and the openings of the air ducts.

b. Generally, when the recommended temperatures are uniform in all areas of the storage refrigerator or freezer, the air circulation is considered adequate.

3-4.6 Food Storage Procedures

a. Because age is a contributing factor in food spoilage, foods must be rotated so the oldest items are used first. Use the rule "first in first out" (FIFO). Adequate stock rotation reduces losses due to spoilage.

b. Only food items may be stored in food storage spaces, e.g., storerooms, refrigerators, reefers. On some classes of ships medical supplies may be stored in refrigerated food storage spaces if kept under lock and key and no other place is available.

c. Decayed or otherwise spoiled food items must be identified and removed from wholesome foods.

d. Foods which readily absorb foreign odors, such as eggs, fresh milk, and butter, must not be stored with fruits and vegetables.

e. Food or containers of food must not be stored close to steam pipes or other sources of heat which would reduce the shelf life of the product.

3-4.7 Ice

a. Commercially procured ice must be from a supplier listed in the Directory of Sanitarily Approved Food Establishments for Armed Forces Procurement. Ice intended for human consumption in food or drink shall be manufactured from potable water only. Ice used for cooling stored food and food containers will not be used for human consumption.

b. Ice machines must be located, installed, operated, and maintained in a sanitary manner to prevent contamination. They must be cleaned monthly or more often as required. See Table 1-1.

c. Ice buckets, other containers and scoops must be of smooth impervious material designed for easy cleaning. They shall be kept clean and stored and handled in a sanitary manner. Scoops shall be stored handle up in a freely draining metal bracket outside the ice storage compartment or in a metal bracket installed within the machine at such a height to preclude the scoop being covered by the ice.

d. Ice should be bacteriologically sampled as determined by the PMA.

Table 1-1. Directions for monthly cleaning of ice making machines

BULK ICE MAKING MACHINES

STEP	PROCEDURES
1. Turn off motor	Empty, defrost and clean. Make certain overflow pipes carry off water used for defrosting.
2. Wash all parts, including ice storage bin.	Use a plastic bristle brush to scrub inside and outside of bins with mild detergent solution.
3. Rinse	Rinse with water containing at least 50 ppm chlorine to preclude bad odors and the accumulation of film deposits from detergents. Water drain should be clear and free to allow proper rinse.
4. Check Water Control	Clean to prevent clogging of holes of water flow control.

ICE DISPENSING MACHINES
Cleaning instruments without unit disassembly

STEP	PROCEDURES
1. Shut off water.	Pour 1 qt. cleaning solution slowly into water reservoir.
2. Place a container below ice chute in bin and start ice machine.	Ice will be formed from cleaning solution. Discard ice. Shut off machine.
3. Flush ice making system	Add 1 qt. cleaning water to reservoir. Catch ice in a container. Discard.
4. Wash down storage bin with mild detergent solution. Rinse.	Scrub interior with a plastic brush and detergent solution. Thoroughly rinse with clean water.

3-4.8 Salvage of Food Exposed to Refrigeration Failure

Food that was exposed to refrigeration failure may be salvaged under proper conditions. The PMA or Army Veterinary Service should be contacted for assistance. Further guidelines may be obtained from the US Army Guide to the Salvage of Chilled/Frozen Foods Exposed to Refrigeration Failure.

3-5 PREPARING AND SERVING OF FOOD

3-5.1 INTRODUCTION
3-5.2 COOKING RAW ANIMAL PRODUCTS
3-5.3 SAFE HOLDING TEMPERATURES FOR COOKED FOOD
3-5.4 RECONSTITUTING OR FORTIFYING FOOD
3-5.5 TIME AS A PUBLIC HEALTH CONTROL
3-5.6 ADVANCE PREPARATION/LEFTOVERS
3-5.7 FROZEN FOODS
3-5.8 RECONSTITUTED, DEHYDRATED FOODS
3-5.9 SANDWICHES
3-5.10 SERVING LINES
3-5.11 SALAD BARS
3-5.12 SELF-SERVICE ITEMS
3-5.13 BUFFETS
3-5.14 FAMILY STYLE SERVICE
3-5.15 SPECIAL MEALS
3-5.16 COMMERCIAL MEATS, CHEESES, AND SALADS

3-5.1 Introduction

a. All food (including ice) will be obtained from approved sources and will be wholesome, honestly presented and labeled per Federal law.

b. Food prepared in a private home may not be used or offered for human consumption in a food establishment. This requirement does not apply to chapel suppers, family child care homes, neighborhood cookouts, unit bake sales, and similar functions, provided the food is identified as home prepared food. Serving home canned foods is prohibited at command sponsored events.

c. Food Protection Measures. Minimum food protection measures include:

(1) Applying good sanitation practices in the handling of food.

(2) Maintaining high standards of personal hygiene.

(3) Keeping PHF refrigerated or heated to temperatures that minimize the growth of pathogenic microorganisms.

(4) Inspecting food products for wholesomeness, temperature, and sanitary condition prior to acceptance at the facility.

(5) Cooking potentially hazardous foods (PHFs), as appropriate, to kill harmful microorganisms.

(6) Providing adequate personnel, equipment, and facilities to ensure sanitary operation.

(7) Preventing infestation or contamination of food by insects and rodents, and contamination of food with toxic chemicals.

(8) Use properly designed, cleaned and sanitized equipment for its intended use.

3-5.2 Cooking Raw Animal Products

a. Except as specified in the paragraphs below, raw animal foods such as eggs, fish, poultry, meat (except roast beef), and foods containing these raw animal foods, shall be cooked to heat all parts of the food to an internal temperatures as identified in Table 1-2:

(1) Poultry, poultry stuffing, stuffed meats, stuffed fish or stuffing containing fish, meat or poultry shall be cooked immediately after preparation and without interruption to heat all parts to a minimum internal product temperature of 165°F (74°C) for 15 seconds.

(a) Poultry may be stuffed, but the internal temperature of the stuffing must reach 165°F. Stuffing must be removed from the bird immediately and stored at 140°F or above until served. It is not recommended to stuff multiple birds for a large meal. Stuffing for large meals should be prepared separately.

(2) Pork, game animals, comminuted fish and meats, injected meats and eggs that are not cooked to order shall be cooked to meet one of the time temperature combinations shown in Table 1-2 below:

TABLE 1-2. Minimum cooking time and temperature combinations for pork, game animals, comminuted fish and meats, injected meats and eggs that are not cooked to order.

Minimum Internal Product Temperatures	Time
145°F (63°C)	3 minutes
150°F (66°C)	1 minute
155°F (68°C)	15 seconds

(3) Ground beef should be cooked to a minimum internal temperature of 155°F for 15 seconds or until juices run clear.

(4) Whole beef roasts and corned beef roasts shall be cooked in an oven that is preheated to the temperature specified in table 1-3 and is held at or above that temperature; and to a food temperature as specified in table 1-4 for the corresponding amount of time for that temperature.

Table 1-3. Oven parameters required for destruction of pathogens on the surface of roasts of beef and corned beef.

Oven Type	Oven Temperature Based on Roast Weight	
	Less than 10 lbs (4.5 kg)	10 lbs (4.5 kg) or greater
Still Dry	350°F (177°C) or greater	250°F (121°C) or greater
Convection	325°F (163°C) or greater	250°F (121°C) or greater
High Humidity[1]	250°F (121°C) or less	250°F (121°C) or greater

[1]Relative humidity greater than 90% for at least 1 hour as measured in the cooking chamber or exit of the oven; or in a moisture impermeable bag that provides 100% humidity.

Table 1-4. Minimum holding times required at specified temperatures for cooking all parts of roasts of beef and corned beef.

Temperature °F (°C)	Time[1]	Temperature °F (°C)	Time[1]	Temperature °F (°C)	Time[1]
54 (130)	121 minutes	58 (136)	32 minutes	61 (142)	8 minutes
56 (132)	77 minutes	59 (138)	19 minutes	62 (144)	5 minutes
57 (134)	47 minutes	60 (140)	12 minutes	63 (145)	3 minutes

[1]Holding time may include post oven heat rise.

b. Microwave Cooking

(1) Raw animal foods cooked in a microwave oven shall be:

(a) Rotated or stirred throughout or midway during cooking to compensate for uneven distribution of heat;

(b) Covered to retain surface moisture;

(c) Heated to a temperature of at least 165°F (74°C); in all parts of the food;

(d) Allowed to stand covered for 2 minutes after cooking to obtain temperature equilibrium.

c. Raw, marinated, or partially cooked fish (other than molluscan shellfish), will be frozen before service or sale in ready-to-eat form as follows:

(1) Frozen throughout to a temperature of:

(a) -4°F (20°C) or below for 168 hours (7 days) in a freezer.

(b) -31°F (-35°C) or below for 15 hours in a blast freezer.

d. Safe Egg Handling Guidelines:

(1) Serving raw eggs and foods containing raw eggs is prohibited.

(2) Recipes which call for uncooked eggs, e.g., mayonnaise, eggnog, ice cream, Caesar salad dressing, hollandaise sauce, etc., will be prepared using only pasteurized frozen table eggs.

(3) Shell eggs that are broken and prepared to order and for immediate service, will be cooked to a minimum internal product temperature of at least 145°F for at least 15 seconds or until the white is firm, not running, and the yolk is set.

(4) Scrambled eggs, in bulk amounts, may be prepared using pasteurized frozen table eggs, pasteurized dehydrated egg mix, or fresh shell eggs. If fresh shell eggs are used, the following provisions are required:

(a) Cook bulk amounts of scrambled eggs in small batches of no more than 3 quarts. Cook to heat all parts of the food to a minimal internal temperature of 155°F (63°C) for at least 15 seconds and until there is no visible liquid egg.

(b) Hold until served at 140°F or higher, such as on a hot food table.

(c) Do not combine just cooked scrambled eggs to the batch held on a hot food table. A clean sanitized container is required for each 3 quarts of scrambled eggs.

3-5.3 Safe Holding Temperatures for Cooked Food

a. General. Potentially hazardous foods which are not served

immediately after cooking must be either rapidly chilled to temperatures of 41°F or lower, or held at 140°F or higher. Growth of harmful bacteria and the development of toxins (poisons) formed by bacteria occur rapidly in protein foods when held at temperatures between 41°F and 140°F. Potentially hazardous foods which have been held at temperatures between 41°F and 140°F longer than 4 hours are considered unsafe for consumption and must be destroyed. If the product is refrigerated at intervals and then permitted to warm, the total time of the various periods between 41°F and 140°F must not exceed 4 hours.

b. Potentially hazardous ingredients for foods that are in a form to be consumed without further cooking such as salads, sandwiches, filled pastry products and reconstituted foods must have been chilled to 41°F or below prior to preparation.

3-5.4 Reconstituting or Fortifying Food

a. The ingredients and the container must be prechilled to 41°F or below before reconstituting or fortifying a potentially hazardous food with the addition of a dry ingredient such as dry milk or milk product, a dessert mix or similar product if the container is larger than 1 gallon.

b. A potentially hazardous food which has been reconstituted or fortified by the addition of a dry ingredient such as dried milk, eggs, soup, sauce, dessert mix or similar product, if not for immediate service, must be:

(1) Held at 41°F or below until served;

(2) Immediately placed, after mixing, into either a frozen dessert machine or other liquid product refrigeration unit; or

(3) Held at 140°F or above.

c. A reconstituted or fortified potentially hazardous food that is held between 41°F and 140°F for longer than 4 hours will be discarded.

3-5.5 Time as a Public Health Control

Time only, rather than time in conjunction with temperature, may be used as the public health control for a working supply of potentially hazardous food before cooking, or for ready to eat potentially hazardous food that is displayed or held for service

for immediate consumption, if:

a. The food is marked or otherwise identified with the time within which it shall be cooked, served, or discarded;

b. The food is served or discarded within 4 hours from the point in time when the food is removed from temperature control;

c. Food in unmarked containers or packages, or for which the time expires, is discarded;

d. Temperature logs are required to document cooling and ensure all requirements are met.

3-5.6 Advance Preparation/Leftovers

3-5.6.1 ADVANCE PREPARATION
3-5.6.2 LEFTOVERS
3-5.6.3 DONATION OF EXCESS FOOD TO LOCAL RELIEF ORGANIZATIONS

3-5.6.1 Advance Preparation

a. "Advance Preparation" is defined as food that is prepared for future service beyond a specific meal. Advanced preparation foods that include PHF may not be retained as leftovers. Advance preparation foods must not be placed in "Hot Holding," and must be immediately cooled after cooking, as indicated below.

(1) Hot items to be retained chilled, must be cooled within a 4-hour period in the following manner:

(a) From required cooking temperature (as noted in this chapter) to 70°F within 2 hours; and

(b) From 70°F to 41°F, or below, within the total 4 hour period.

(2) "Advance Preparation" foods that are prepared from ingredients at ambient temperature, such as reconstituted foods or canned food ingredients, must be cooled to 41°F or below within 4 hours.

(3) Temperature logs are required to document cooling and ensure all requirements are met.

b. Rapid cooling of "Advance Preparation" foods will be accomplished by using one or more of the following methods to bring the product temperature from the required cooking temperature to 41°F or below within the 4-hour period:

(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) product depth or less) or smaller containers (1 gallon or less).

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

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

(5) Short term storage with agitation in walk-in refrigerator operating below 38°F, or in a rapid chill refrigerator to reduce the temperature prior to placing in a standard refrigerator.

(6) Immersing the cooking container in cold, running water with product agitation.

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

(8) Distributing the product among several refrigerators.

(9) Using metal, stainless steel or aluminum, containers. (Metal containers have higher rates of heat transfer than plastic or glass containers.)

(10) Using reduced water content for recipes such as stews. After cooking add potable ice to make up the volume of water and promote rapid cooling.

(11) Using ice type paddles.

c. Protect advance preparation foods from contamination by the following:

(1) Hot foods may be loosely covered, or uncovered if protected from overhead contamination during the cooling period to facilitate heat transfer from the surface of the food.

(2) Tightly cover food as soon as possible after the product temperature reaches 41°F.

(3) Potentially hazardous foods to be transported will be prechilled and held during transport at an internal product temperature of 41°F or below unless maintained per section 3-4.3(B).

d. "Advance Preparation" food items that are considered potentially hazardous food may be retained for use or sale up to 72 hours from the original time of preparation.

(1) The HACCP princiles found in section 3-8 of this chapter should be followed, but a formal HACCP plan is not normally required.

(2) A waiver may be requested, based on a written HACCP plan, from the PMA to extend "Advance Preparation" holding time from 72 hours up to 7 days. Guidance for a HACCP plan is located in section 3-8 of this chapter.

e. Labeling of "Advance Preparation" food is required.

(1) "Advance Preparation" food must be labeled "Advance Preparation Food" with the date and time of original preparation and the required discard date and time. Other methods for labeling may be used if approved in writing by the PMA.

f. Reheating "Advance Preparation" food items that are considered potentially hazardous food.

(1) Potentially hazardous food that has been cooked and then refrigerated and which is reheated for hot holding must be reheated so all parts of the food reach 165°F for a minimum of 15 seconds. It must then be held at 140°F or above until served. The time for reheating to 165°F will not exceed 2 hours.

(2) However, food taken from commercially processed hermetically sealed containers, food in intact packages from commercial food processing establishments, and whole or remaining unsliced portions of beef roasts may be reheated to 140°F for hot holding.

(3) Potentially hazardous foods which are not reheated to 165°F before serving, (e.g., custards and cream filled pies) that have been cooled to 41°F or below after preparation and have been maintained at 41°F or below must be served within 72 hours of cooking. These food items must be used within two hours after removal from refrigeration.

g. Commercial meats, cheeses and salad requirements are found under section 3-5.17.

h. A waiver for freezing of limited menu items that are advance prepared foods, (e.g., lumpia, egg rolls) may be authorized by the PMA under certain conditions, but may require an HACCP plan.

3-5.6.2 Leftovers

a. Leftovers are any unserved food remaining at the end of the meal period for which it is prepared. Served food, or food that has been placed on a serving line does not qualify and must be discarded. Leftovers are categorized as potentially hazardous food and nonpotentially hazardous food.

b. Nonpotentially hazardous leftovers are such items as individual commercially packaged crackers, condiments, etc., which may be recovered from the serving line, but not dining tables or trays, and be retained for reuse. Bottled condiments that do not require refrigeration (e.g. mustard, catsup/ketchup, steak sauce, etc.) may be retained for reuse. Unsliced, hard skinned fruits may be retained from serving lines for reuse provided they are washed.

c. Potentially Hazardous Leftovers. Potentially hazardous leftovers include any potentially hazardous food prepared for a specific meal period and then retained for a later meal period. This section does not apply to advance prepared food as defined in section 3-5.6.1 The following provisions apply:

(1) Foods with commercially prepared chopped or ground meat ingredients may be retained as leftovers.

(2) Potentially hazardous food retained as leftovers must have been held at safe temperatures.

(3) Potentially hazardous food must not have been placed on the serving line. They must have been held in the kitchen for "hot holding" at 140°F or in "cold holding" at 41°F or below.

(4) Hot items to be retained chilled, must be cooled within a 4-hour period, in the following manner:

(a) From 140°F to 70°F within 2 hours; and

(b) From 70°F to 41°F, or below, within the total 4-hour period.

1 Any food not meeting these temperature requirements at the specified times will be discarded.

2 These food items must be maintained at 41°F or below until removed for service or heating for hot holding prior to service.

3 Rapid cooling methods are discussed in section 3-5.6.1.

(c) Potentially hazardous leftovers must be labeled "Leftover Use Within 24 Hours" with the date and time of original preparation and the discard date and time. Other methods for labeling may be used if approved in writing by the PMA.

d. Potentially hazardous foods which have been cooked, chilled and reheated for service shall not be saved as leftovers.

e. Leftover foods may be retained for 24 hours chilled (41° F or below) or for 5 hours if maintained hot (140° F or above). The time limit(s) for leftovers begins when the food is removed from hot holding. No temperature logs are required but foods must not be in the "danger zone" between 41° F and 140° F for more than four total hours from time of preparation until discarded.

f. Freezing of leftovers is prohibited.

g. Reheating Leftover Potentially Hazardous Food. Potentially hazardous food that has been cooked and then refrigerated and which is reheated for hot holding must be reheated so that all parts of the food reach 165°F for a minimum of 15 seconds and then held at 140°F or above until served. The time for reheating to 165°F will not exceed 2 hours.

h. Commercial meats, cheeses and salad requirements are found under Section 3-5.16.

i. Prohibited Leftovers

(1) Foods composed of ingredients which have been peeled, sliced, or diced by hand after cooking must never be used as leftovers, since the 4-hour time limit between temperatures of 41°F and 140°F is usually taken up in preparing, chilling, and serving the food.

(2) These foods include, but are not necessarily limited to potato salad, chicken salad, turkey salad, macaroni salad, shrimp salad, egg salad, and similar items. Also included are foods that have been creamed or handled a great amount (e.g., hashes, most gravies and dressings, and creamed meats) and items that are highly perishable (e.g., most seafood).

(3) Nonpackaged or unwrapped potentially hazardous food recovered from a self-service line must not be retained as leftovers.

3-5.6.3 Donation of Excess Food to Local Relief Organizations

Guidance for donation of excess food to local relief organizations and similar programs may be obtained from the Naval Supply Systems Command. It is recommended that commands donating excess food follow a HACCP system.

3-5.7 Frozen Foods

a. The storage of frozen foods shall be limited to the storage life listed in NAVSUP PUB 486, Volume 1, Chapter 5.

b. Thawing Procedures.

(1) Frozen foods must not be thawed by exposure to excessive heat or warm air currents. The ideal procedure is to place frozen foods under controlled thawing temperatures (36°F to 38°F) in their original wrappers or containers.

(2) Frozen foods may be thawed in microwave ovens provided they are immediately cooked thereafter as a part of a continuous cooking process.

(3) At shore based facilities frozen foods may be thawed completely submerged under running water:

(a) At a water temperature of (21°C) 70°F or below;

(b) With sufficient water velocity to agitate and float off loose particles in an overflow;

(c) For a period of time that does not allow thawed portions of ready-to-eat food to rise above 41°F (5°C);

(d) For a period of time that does not allow thawed portions of a raw animal food requiring cooking to be above (41°F) 5°C for more than 4 hours including:

1 The time the food is exposed to the running water and the time needed for preparation for cooking, or

2 The time it takes under refrigeration to lower the food temperature to 5°C (41°F).

(4) On board ships, and only during emergency situations when microwave ovens and refrigeration equipment are inoperative, it may be necessary to use a thawing method not approved by FDA (e.g., thawing at room temperature). In this situation, the following guidelines must be used:

(a) Frozen foods are thawed in the galley or meat preparation space;

(b) The room temperature must not exceed 80°F.

(c) Meat, poultry, and fish must remain in their original sealed wrappers or containers;

(d) Proper precautions must be taken to ensure potentially hazardous foods are not allowed to remain at room temperature once thawed;

(e) The preventive medicine authority must be notified.

c. Commercial type Frozen Food Operation. This is the only authorized operation in which food intended for use at a future time is prepared, frozen, and stored. Navy and Marine Corps frozen food processing operations must obtain CHBUMED approval for operations not previously authorized.

d. Freezing of leftovers is not authorized.

e. A waiver for freezing of limited menu items that are advance prepared foods, (e.g., lumpia, egg rolls) may be authorized by the PMA under certain conditions and may require an HACCP plan.

3-5.8 Reconstituted, Dehydrated Foods

Food items such as dehydrated eggs and vegetables are as susceptible to spoilage after reconstitution as the fresh items. Dehydrated foods must be reconstituted with chilled ingredients and be cooked or refrigerated immediately following reconstitution.

3-5.9 Sandwiches

Sandwich preparation shall meet all of the requirements of this chapter. Sandwiches prepared for future service will require approval from the PMA and may require a HACCP plan.

3-5.10 Serving Lines

a. All serving lines must be equipped with a functional sneeze shield. To be functional, a sneeze shield must present a barrier between the oral zone of patrons within the normal range of stature and the food displayed for service.

b. The temperatures of hot and cold foods on the serving line must be checked frequently to ensure no food is held between 41-140°F.

3-5.11 Salad Bars

a. Salad bars may be set up on a self-service basis and must be equipped with a sneeze shield. To assure all salad bar items remain below 41°F, they must be prechilled in a refrigerator and placed in pans or trays which are located on a bed of ice or on an electrically refrigerated salad bar unit. Proper drainage is essential when ice is used.

b. Potentially hazardous foods must be placed on the salad bar in small quantities and be replenished in clean containers as needed. Sprouts are considered a PHF.

c. Vegetable items on the salad bar may be kept until the end of the day as long as a visual inspection is made during each meal period to ensure food quality. Noncommercially prepared salad dressings placed on the salad bar in an open container must be discarded at the end of the meal period. Other potentially hazardous food placed on the salad bar must be discarded at the end of the meal period.

d. Commercially prepared salad dressings which are packaged in and served from small bottles (usually 8 ounces) are exempt from the requirement to discard any leftover portions provided they are kept under refrigeration during storage.

e. An adequate number of proper serving utensils for the salad bar must be provided. Food dispensing utensils must be stored either in the food with handles extended or in running water.

f. Certain commercial brands of mayonnaise and salad dressings are exempted from the requirement for refrigeration during meal periods. They must employ the use of an NSF or equivalent approved dispensing pump and be refrigerated between meal periods. After 48 hours any unused products must be discarded as garbage. The dispensing pump must be cleaned and sanitized immediately prior to installing on the container; too frequent removal of the pump while the container is in service may result in possible contamination of the product. External cleaning of the pump with a sanitizing solution, when in place, can be accomplished if necessary. Similarly, individual single service packages of mayonnaise, other condiments, and salad dressings do not require refrigeration.

g. Patrons must be required to use new tableware for each trip to the salad bar.

3-5.12 Self-service Items

a. Food items permitted in self-service areas in addition to salads are bread, butter, crackers, relishes, condiments, beverages, and certain types of desserts. Desserts which may be self-served are:

(1) Desserts portioned in individual dishes;

(2) Individually wrapped portions of ice cream. Bulk ice cream will not be used for self-service. Ice cream must be placed in individual dishes.

(3) Cookies;

(4) Fruits (fresh, canned, stewed, and frozen);

(5) Soft ice cream from dispensing machines.

b. Desserts such as cakes, pies, puddings, and bulk ice cream will not be self-service unless provided in individual dishes.

c. Food dispensing utensils must be stored in the food with handles extended or in running water. Dry food dispensing utensils must be stored clean and dry or in the dry food. These utensils must be designed for this purpose. Self-service lines shall be carefully supervised throughout the meal period to keep foods neatly arranged and replenished.

d. Authority to permit self-service of items other than those listed in the preceding paragraphs must be requested in writing from the installation preventive medicine authority.

3-5.13 Buffets

a. Buffet type meals have the potential of providing ideal temperatures for rapid growth and multiplication of pathogens. Therefore, it is essential that potentially hazardous foods not be held for more than 4 hours between 41-140°F including the time required for preparation and holding time before, during and after serving.

b. All food remaining on the buffet line must be discarded at the end of the meal period.

c. Patrons must be required to use new tableware for each trip to the buffet line.

3-5.14 Family Style Service

a. Certain small messes are authorized "family style" service when serving facilities are not available. However, due to the lack of food holding equipment and the potential for contamination during service, strict compliance with the 4-hour rule is mandatory.

b. Foods must be placed out for service as close to meal periods as possible in small quantities and be replenished as needed during the meal.

c. Adequate and proper serving utensils must be provided for each food item.

d. Salad mixtures, salad dressings and other potentially hazardous foods to be served cold must be prechilled to 41°F or lower, prior to service and then be placed in pans on a bed of ice during service.

e. Potentially hazardous foods served "family style" must be discarded as garbage after the meal period.

f. Bulk ice cream must not be served "family style."

g. Serving bowls/platters will not be refilled; clean bowls/platters must be used. Any food not consumed must be discarded.

3-5.15 Special Meals

The 4 hour maximum time permitted for holding potentially hazardous foods at temperatures between 41-140°F is of particular importance in the case of special meals (boat meals, flight meals, and recreation parties). All types of flight rations must be carefully packaged to preclude the risk of contamination and exposure during transit.

3-5.16 Commercial Meats, Cheeses, and Salads

The following sanitary guidelines have been developed exclusively for the handling and storage of commercially processed bulk food items:

a. Preslicing must be restricted to high turnover items.

b. When used, bayonet type pricing mounts will not be allowed, under any circumstances, to penetrate the food product. Instead, they should be mounted into lemons or similar fruits for display purposes.

c. Use all salads, including the contents of a master container, within 72 hours after opening. On each master container, mark the date and time it is opened. Use only commercially prepared products purchased from suppliers listed in the Directory of Sanitarily Approved Food Establishments for Armed Forces Procurement or other Government inspection directories. Handle salads as follows:

(1) Sanitarily remove only the amount of salad expected to be used/sold in 1 day from the master container and place in a clean, sanitized pan in the display case. Label the pan with the date the master container was opened, the lot number, the name of the supplier (if more than one source of supply is used), and the expiration date.

(2) At the close of business each day, dispose of small amounts (1 quart or less) of leftover salad. Cover pans containing larger amounts (more than 1 quart) with clean wrap and leave in the display case or place into backup refrigeration. Do not use aluminum foil, it will chemically react with some foods. At the beginning of the next workday, place the leftover salad into a clean sanitized pan. Position the pan so the leftover salad will be used/sold first. Never put salads from the display case back into the master container.

d. Handle meats and cheeses as follows:

(1) Commercially prepared high moisture cheeses, luncheon meat loaves, roast beef, ham, and similar products prepared and packaged by a food processing plant shall be clearly marked, at the time the original container is opened in a food establishment. Marking must indicate the date by which the food shall be consumed, including the date the original container was opened:

(a) All meats and cheese must be consumed within 7 calendar days after opening. All meats and cheeses must be maintained at or below 41°F.

(b) These items should be visually inspected upon each use and discarded at the first sign of product deterioration.

e. Individually sliced and wrapped commercially prepared cheeses shall be used or disposed of prior to their pull date.

If visual inspection reveals problems prior to the pull date, the affected slices will be disposed of as waste.

3-6 SPECIAL FACILITIES AND VENDING OPERATIONS

3-6.1 CLUBS, MESSES, EXCHANGES AND CONCESSIONS (FOOD SERVICE) AND DELICATESSENS
3-6.2 AUXILIARY RESALE OUTLETS (AROs)
3-6.3 VENDING OPERATIONS
3-6.4 MOBILE FOOD SERVICE
3-6.5 COMMISSARIES
3-6.6 COFFEE MESSES
3-6.7 CHILD DEVELOPMENT CENTERS AND FAMILY HOME CARE UNITS

3-6.1 Clubs, Messes, Exchanges and Concessions (Food Service) and Delicatessens

All clubs, messes, exchanges, and concessionary food service operations must comply with sanitary standards and regulations prescribed in this chapter. The person in charge (military or civilian) should maintain close liaison with the preventive medicine authority to ensure compliance with all sanitation requirements. These food establishments must be inspected at the same intervals as any food establishment by the PMA.

3-6.2 Auxiliary Resale Outlets (ARO)

OPNAVINST 4060.4 contains procedures to establish and operate AROs. The PMA will inspect these outlets upon establishment and on an unscheduled basis after commencement of operations. A determination will be made whether PHF is being sold. AROs selling PHF will be considered food establishments and all provisions of this manual shall apply.

3-6.3 Vending Operations

a. Vending machines placed into operation on Navy and Marine Corps installations must comply with the standards of "The Vending of Food and Beverages-A Model Sanitation Ordinance, Food and Drug Administration" and be found on the "Listing of Letters of Compliance" by the National Automatic Merchandising Association.

b. Inspections. The PMA shall ensure by inspection on a quarterly basis, that vending machines are maintained in a sanitary manner.

3-6.4 Mobile Food Service

a. Mobile food service or canteen trucks are operated as authorized by the Navy Exchange Manual and MCO 4066.13. They must be maintained in a clean, sanitary condition at all times. Only single service articles will be provided for use by the consumer. Food service sanitation training is a requirement for operators who dispense food items from these vehicles. The PMA must regularly inspect these Government operated trucks and carts while they are in operation.

b. Nongovernment operated food vendors must be licensed and approved by the local or State health authority and must be registered with the local PMA. The inspection frequency will be determined by the PMA, but must be done at least quarterly.

c. All food service equipment in mobile vans must be equivalent to or meet applicable design and performance standards of NSF Standard No. 59 or its equivalent.

d. Transportation of food from a centralized kitchen to a satellite dining facility poses special hazards which increase in proportion to distance and time. Therefore, all foods must be transported in covered containers or completely wrapped or packaged to protect them from contamination, and all potentially hazardous food must be maintained at 41°F or below, or 140°F or above during transportation.

3-6.5 Commissaries

Commissaries will normally be inspected by U.S. Army veterinary personnel. When U.S. Army personnel are not available, commissaries will be inspected by Navy PMA using the current methods established by the U.S. Army VETCOM Instructions.

3-6.6 Coffee Messes

a. The term "coffee mess" means any room, space, area, or facility authorized by a department or office for the purpose of preparing or dispensing coffee, tea, or similar beverages. Food is not authorized to be stored, prepared or served in coffee messes.

b. Coffee messes require no initial or periodic medical inspections by the PMA.

3-6.7 Child Development Centers and Family Home Care Units

a. Child development centers are command sponsored child

care facilities located on station and operated as authorized by OPNAVINST 1700.9 series. Food service operations in these centers will comply with this chapter.

b. Family Home Care Units are provided in Government quarters (Government owned or leased) and approved by the local commanding officers and housing authority. Care may be provided for up to six children by a private individual in a Navy family housing unit.

(1) These units are not subject to routine food service sanitation inspections. However, OPNAVINST 1700.9 series requires the Preventive Medicine Service to conduct an initial and annual inspection of family home care units.

(2) Commercial food service sanitation requirements (e.g., NSF equivalent refrigeration units, dishwashers, three compartment sinks, etc.) will not be applied to family home care units.

3-7 TEMPORARY FOOD SERVICE

3-7.1 REQUIREMENTS
3-7.2 INSPECTIONS AND APPROVALS
3-7.3 TYPES OF OPERATIONS
3-7.4 EQUIPMENT
3-7.5 SINGLE SERVICE ARTICLES
3-7.6 WATER
3-7.7 SEWAGE
3-7.8 HAND WASHING
3-7.9 FLOORS
3-7.10 WALLS AND CEILINGS OF FOOD PREPARATION AREAS

3-7.1 Requirements

Temporary food establishments will comply with all of the requirements of this chapter unless an exemption is granted by the PMA or is listed in this section. Specific requirements and exceptions for temporary food establishments are provided in this section.

3-7.2 Inspections and Approvals

a. The preventive medicine authority will inspect and approve temporary food establishments prior to start of operations. The individual or agency responsible for the temporary food establishment shall contact the PMA at least 30 days prior to opening to obtain a permit to operate the facility. A model form for requesting a permit to operate a temporary food

establishment is available in this chapter in Appendix C.

b. The PMA may:

(1) Waive certain requirements when no health or sanitation hazard exists. An example is waiving the requirements for screens and doors during cold weather when no hazard exists from flies contaminating food.

(2) Impose additional requirements to protect public health. Examples would be; restricting the amount or type food preparation, or prohibiting certain high risk potentially hazardous food.

3-7.3 Types of Operations

Temporary food service operations are divided into two general classes:

a. Restricted Operations. Restricted operations are temporary food establishments where only potentially hazardous food (PHF) requiring limited preparation, such as hamburgers and frankfurters, are prepared or served. Foods held at unsafe temperatures will be discarded and leftovers are prohibited. The preparation or service of other PHF is prohibited, except restricted operation facilities can serve PHF that are:

(1) Prepared and packaged in a food establishment and under conditions meeting the requirements of this chapter (e.g., central kitchen or commissary);

(2) Obtained in individual portioned containers or packages from approved sources;

(3) Stored at an internal product temperature of 41°F or below, or 140°F or above in equipment meeting the requirements of this chapter.

(4) Served directly in the unopened, individual serving container or package in which it was obtained.

b. General Operations. Nonrestricted operations will comply with all of the requirements of this chapter. Any waivers to this chapter must be requested in writing from the preventive medicine authority.

3-7.4 Equipment

a. Locate and install equipment to prevent food contamination and facilitate cleaning.

b. Protect against contamination of food contact surfaces of equipment by consumers, food service personnel and other contaminating agents. Provide effective shields and sneeze guards for equipment.

3-7.5 Single service Articles

Temporary food establishments without adequate facilities for cleaning and sanitizing tableware will only use individually wrapped, single service articles.

3-7.6 Water

a. Provide adequate potable water for food preparation, cleaning and sanitizing utensils and equipment, and for hand washing. Provide a potable water heating system capable of producing adequate hot water for cleaning and sanitizing 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. The PMA may authorize alternative procedures for cleaning and sanitizing equipment and utensils.

b. Temporary food establishments without permanent water supplies must have potable water for cleaning and hand washing.

c. Potable water must be from commercial potable water trailers, temporary connection to building water supply, or in clean sanitary containers or hoses.

(1) Hoses used to carry water for food preparation, drinking water, ware washing and hand washing must be made of food grade material approved for potable water. ("Use of garden hoses is prohibited except for general area cleanup, e.g. for washing down floors and picnic tables). Temporary connections to potable water supply shall not violate plumbing codes. The hose bib shall be connected with a vacuum breaker or other backflow prevention device.

3-7.7 Sewage

All sewage will be disposed of in a sanitary sewer.

3-7.8 Hand Washing

Provide a convenient hand washing facility for employee hand washing. The facility will have at least running water, soap, and individual paper towels. The PMA may approve field expedient hand washing facilities. Food service personnel shall follow hand washing guidance provided in this chapter.

3-7.9 Floors

When provided, floors will be constructed of concrete, asphalt, tight wood, or other similar cleanable material, be graded to drain and kept in good repair. The preventive medicine authority may approve using dirt or gravel as subflooring provided floors are:

a. Graded to drain;

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

3-7.10 Walls and Ceilings of Food Preparation Areas

When required by the PMA, walls and ceilings of temporary food preparation areas shall meet the following standards:

a. Construct walls and ceilings of wood, canvas, or other material that protects the interior of the establishment from the weather and dust.

b. Construct walls and ceilings of food preparation areas in a way that minimizes the entrance of insects.

c. Use at least 16 mesh to the inch screening material for walls, doors, or windows.

d. Make counter service openings as small as possible for the particular operation conducted. Provide these openings with tight-fitted solid or screened doors or windows, or other construction to restrict the entrance of flying insects.

e. Surface outdoor walking and driving areas with concrete, asphalt, gravel or other material authorized by the preventive medicine authority to effectively minimize dust, facilitate maintenance and prevent muddy conditions and pooling of water.

f. Provide adequate number of covered trash containers. Line trash cans with plastic bag(s).

g. Minimize exposed utility lines, water and waste lines and pipes. Install lines to minimize obstruction for cleaning and minimize safety hazards.

3-8 HACCP INFORMATION

3-8.1 GENERAL INFORMATION
3-8.2 STEPS OF THE HACCP SYSTEM
3-8.3 HACCP INSPECTION GUIDELINES

3-8.1 General Information

a. The abbreviation HACCP stands for Hazard Analysis and Critical Control Points. This is a food safety system developed to prevent the occurrence of potential food safety and sanitation problems. An HACCP Plan is the written document, based on the principles of HACCP, which delineates the procedures to be followed at a food establishment to assure the control of a specific process or procedure. Essentially HACCP is a system that identifies, monitors and controls specific food sanitation related, biological, chemical or physical hazards, that can adversely effect food safety and lead to the occurrence of a food borne illness. A HACCP Plan may be required by the PMA for certain operations/facilities.

b. The HACCP system focuses on controlling critical offenses that have been associated with numerous outbreaks of food borne illness. Below are some examples of critical offenses, the list is not inclusive. Five of the eight critical offenses are time and/or temperature. The remaining three involve cross contamination.

(1) Improper cooling of food.

(2) Inadequate cooking times and temperatures.

(3) Contamination of food by infected food service workers, including poor personal hygiene.

(4) Food prepared a day or more prior to serving.

(5) Contamination of food, not receiving further cooking, by addition of raw (contaminated) ingredients. Examples; spices and similar raw ingredients.

(6) Foods remaining at unsafe temperatures.

(7) Failure to reheat foods to proper temperature.

(8) Cross contamination of cooked food with raw foods or by employees who mishandle food or improperly cleaned equipment.

3-8.2 Steps of a HACCP Plan

A HACCP Plan is divided into seven (7) principles, or steps.

a. Principle #1. Identify Potentially Hazardous Foods.

(1) Hazard and Risk Definitions:

(a) Hazard: Any biological, chemical, or physical property that may cause an unacceptable consumer health risk.

(b) Risk: A likelihood of a hazard.

(2) The first step is to identify the hazards associated with the operations.

(3) Begin with the menu. Select the "most hazardous" menu items or ingredients. Particular attention should focus on foods or ingredients that are common to many different menu items. For example:

(a) Ground beef may be an ingredient in many different menu items including spaghetti sauce, creamed beef, chili, meat loaf and hamburgers.

(b) Don't focus initial efforts on menu items or ingredients that are only served one or two times per month.

(4) Then look at menu items with the greatest potential for contamination or those which are most hazardous.

(a) Meat sauce, gravy, quiche and high protein salads require extensive preparation steps. Contamination can occur at any step, or the raw products can be contaminated.

(b) Items such as fresh fish or shell fish can be contaminated and spoil rapidly.

(5) Work one menu item or ingredient at a time. Set up a flow chart from receiving, through storage, preparation, cooking, serving and disposal of the item. Include rapid cooling and storage of advance preparation foods and leftovers if appropriate. On this flow chart identify where the item could be contaminated as well as the relative risk, severity and probability, of each hazard.

b. Principle #2. Identify the Critical Control Points (CCPs) in Food Preparation.

(1) A CCP is defined as a point, step, procedure in which a food safety hazard can be prevented, eliminated, or reduced. Examples of critical control points CCPs may include but are not limited to: cooking, chilling, specific sanitation procedures, prevention of cross-contamination, and certain aspects of employee and environmental hygiene.

(2) The following questions may be used in identifying CCPs:

(a) Can the hazard be prevented, eliminated or controlled through measures or procedures that can be implemented by the food service operation?

1 Contamination of animal feed with pesticides, or contamination of poultry with *salmonella* are hazards, but they are not CCPs because the food establishment cannot control them. Purchasing USDA inspected meat and poultry are important but not normally a CCP.

2 Cooking beef or poultry to correct time and temperature are CCPs. The food service facility can control hazard associated with inadequate cooking.

(b) Does this step eliminate or reduce a hazard?

(c) Could contamination occur, or could contamination increase to unacceptable levels?

c. Principle #3: Establish Critical Limits (CLs) for the CCPs.

(1) Critical limits are defined as the criteria that must be met for each preventive measure associated with a CCP. Critical limits may be set for preventive measures such as temperature, time, physical dimensions, humidity, moisture level, water activity, pH, acidity, salt concentration, available chlorine, preservatives, or sensory information such as texture, aroma, and visual appearance.

(a) Incorporate control procedures into the written recipes, for example:

1 Process Step: Hamburger Patty Cooking - Minimum internal temperature of patty: 155°F; Time: Minimum 15 Sec.; oven temperature:___°F; patty thickness:___ in inches; patty composition: 100% beef.

(b) Enforce employee hand washing and hygiene practices.

(c) Establish illness policy for employees with flu like symptoms of diarrhea and vomiting.

(d) Enforce proper cleaning and use of sanitizer solutions.

(2) Critical limits must be measurable or observable. The more specific a CL is, the easier it is to monitor. Avoid terms like thoroughly heated, cool rapidly, serve hot. If there is a measurable limit, specify it.

d. Principle #4: Establish Procedures to Monitor CCPs.

(1) Monitoring does not have to be elaborate. It can include checking the temperature of food on a serving line, or taking the temperature of foods being cooled.

(2) Monitoring is a planned sequence of observations or measurements to assess whether a CCP is under control and to produce an accurate record for future use in verification. Examples of measurements for monitoring include:

(a) Visual observations

(b) Temperature

(c) Time

(d) pH

(e) Moisture level

(3) Assignment of the responsibility for monitoring is an important consideration for each CCP. The person responsible for monitoring must also report a process or product that does not meet critical limits so immediate corrective action can be taken. For example:

(a) Assign one person to make and test sanitizer solution each day.

(b) Assign responsibility for equipment temperature logs.

(c) Assign responsibility for food temperature logs for cooking, cooling, and reheating.

(4) All records and documents with CCP monitoring are to be signed or initialed by the person doing the monitoring.

e. Principle #5: Establish the Corrective Action(s) To Be Taken When Monitoring Shows a Critical Limit (CL) Has Been Exceeded.

(1) The HACCP system for food safety management is designed to identify potential health hazards and to establish strategies to prevent their occurrence. However, ideal circumstances do not always prevail. Therefore, when deviation occurs, corrective action plans must be in place to:

(a) Determine whether food should be discarded.

(b) Correct or eliminate the cause of problem.

(c) Maintain records of corrective action taken.

(2) Actions must demonstrate the CCP has been brought under control. Individuals who have a thorough understanding of HACCP process, product, and plan are to be assigned responsibility for taking corrective action. Corrective action procedures must be documented in the HACCP plan.

(a) Corrective Actions may include:

1 Raising or lowering the thermostat on a piece of equipment.

2 Reclassifying a food as leftover, reheating to 165°F within 2 hours and serving that item the next meal.

3 Dividing a food item being chilled into several smaller containers.

(b) Corrective actions should be developed and in place before the CL is exceeded. The staff must know what protective actions should be followed and under what circumstances.

f. Principle #6. Establish Effective Record Keeping Systems.

(1) Record keeping for HACCP need not be a chore or excessive burden.

(a) If a critical limit (CL) for fresh fish is delivery on shaved ice at 34 to 41° F internal product temperature, the food service employee who receives the delivery should check the product temperature and record it on the delivery invoice.

(b) If a CL requires rapid cooling, within 4 hours from an internal temperature of 140° F to 41°F, then the food service employee should take the product temperature and record the temperatures at the time from when the product reached 140° F until it reached 41°F.

(2) Keeping good records is especially important for production operations such as sandwich shops, central kitchens or vending commissaries and cook chill production kitchens.

(3) The associated records should be on file at the food establishment. Generally, such records include the following:

(a) Listing of the HACCP team members and assigned responsibilities.

(b) Description of the food and its intended use, product description, and specifications.

(c) Listing of all regulations that must be met.

(d) Ensure adequate environment, facilities, and equipment.

(e) Monitor equipment with temperature logs.

(f) Copies of flow charts from receiving to consumption.

(g) Hazard assessment at each step in flow diagram (include calibration of equipment).

(h) The critical limits established for each hazard.

(i) Monitoring requirements for temperature, sanitation, finished product specifications, and distribution.

(j) Corrective action plans when there is a deviation in policy, procedure, or standard CCP.

(k) Procedures for verification of HACCP system.

g. Principle #7. Establish Procedures to Verify the HACCP System is Working.

(1) Verification procedures include both the person in charge and the PMA.

(2) The person in charge should, among other actions,

spot check temperatures of products in the refrigerators; check invoices for temperatures of food on delivery and check temperatures of food on serving line and being removed from cooking. The person in charge should also watch to see if employees are washing their hands, cleaning and sanitizing equipment, and taking other steps to limit cross contamination.

(3) Verification procedures may include:

(a) Establishment of appropriate verification inspection schedules.

(b) Review of the HACCP plan.

(c) Review of the CCP records.

(d) Review of the deviations and dispositions.

(e) Visual inspection of operations to observe whether CCPs are under control.

(f) Random sample collection and analysis.

(g) Review of critical limits to verify they are adequate to control hazards.

(h) Review of written record of verification inspections covering compliance, deviations, or corrective actions taken.

(i) Review of modifications of the HACCP plan.

3-8.3 HACCP Inspection Guidelines

a. The PMA, when looking at a food service establishment with an implemented HACCP program, should:

(1) Try to determine if the food service personnel understand and are following the HACCP system for the facility.

(2) Concentrate on the critical offenses associated with incidence of food borne illness, including time temperature control and prevention of cross contamination.

(3) Begin a HACCP based sanitation inspection with the menu.

(a) Using the menu, the cook worksheet or production schedule, try to determine the flow of food through the facility. If the facility has flowcharts for major menu items, examine

these for clarity, completeness, CCPs, and CL.

(4) Try to inspect the facility based on the flowchart or other available SOPs, etc.

(a) Start with the refrigerated storage. Take the internal product temperature of a representative sampling of the food. Are the product temperatures and item consistent with the menu and the cook worksheet/production schedule?

(b) Check invoices and receiving records. Are potentially hazardous foods checked at delivery for wholesomeness, product temperatures, etc.? If a delivery is taking place, do food service workers wash their hands before and after handling raw PHFs? Are they using a sanitized product thermometer?

(c) Observe food preparation for personal hygiene, hand washing, wearing clean disposable gloves, using clean sanitized utensils, and other practices which limit cross contamination.

(d) Observe cooking processes. Do cooks check the internal product temperatures? Are PHFs removed from the oven and placed either in hot food holding or cooling promptly; or, are foods left on stoves, counter tops, etc. for long periods? Are leftovers rapidly heated to 165° F before being placed on the serving line?

(e) Check serving line. Are foods at correct product temperatures. Are foods such as soups, salads and other items brought out at correct temperatures and in small batches?

(f) Check cooling techniques for leftovers and pre-prepared foods. Are the techniques appropriate? Do they work?

(g) Talk to the food service personnel. Do employees understand the HACCP system, CCPs and critical limits that effect their work? Knowledge of what to do if critical limits are exceeded or not met?

(h) Examine training records. Are managers trained? Do employees receive adequate ongoing training appropriate to their position?

b. Remember the goal of the HACCP system is to prevent food borne illness by identifying and controlling hazards.

Section IV. STANDARDS AND SANITATION OF FOOD SERVICE EQUIPMENT AND UTENSILS

4-1 STANDARDS
4-2 WARE WASHING METHODS
4-3 WARE WASHING AGENTS
4-4 SANITIZING AGENTS (DISINFECTANTS)
4-5 AUTOMATIC COLD WATER GLASS WASHER
4-6 MESSING FACILITY SANITATION
4-7 UTENSILS AND EQUIPMENT
4-8 HAZARDOUS METALLIC COATINGS

4-1 STANDARDS

a. All equipment and utensils used in food establishments under Navy and Marine Corps jurisdiction must be constructed of sanitary, nontoxic, corrosion resistant materials designed, assembled, and installed to provide for ease of cleaning. Sanitary standards for the equipment shall not be less than those promulgated by an American National Standards Institute (ANSI) accredited third party organization (e.g., the National Sanitation Foundation (NSF) or equivalent). Shipboard food service equipment must comply with NAVSUP PUB 533, Shipboard Food Service Equipment Catalog.

b. Stationary equipment must be installed to permit proper cleaning and sanitary maintenance of such equipment, adjacent equipment, and floor and wall surfaces in the immediate vicinity. Floor-mounted equipment, not easily moved, must be sealed to the floor or elevated on legs that provide at least a 6-inch clearance (aboard ship, 8 inches) between the floor and equipment. However, if no part of the floor under the floor mounted equipment is more than 6 inches from cleaning access, the clearance space may be only 4 inches.

c. All food service spaces and equipment must be free from salt water connections, cross connections with a nonpotable water supply, and submerged fresh water inlets. Exceptions to the salt water requirement are those shipboard sculleries which contain food waste disposers that have been specifically approved by CHBUMED to use salt water during the food waste grinding or pulping process and approved refrigeration units which use salt water.

d. Surfaces of Equipment or Utensils:

(1) Food Contact Surfaces. Food contact surfaces will be of materials which are smooth, corrosion resistant, nontoxic, stable, and nonabsorbent under use conditions and will not impart

an odor, color or taste, nor contribute to adulteration of food. All joints and seams in the food contact zone will be sealed and smooth at the surfaces being joined.

(2) Splash Contact Surfaces. Food splash zone materials will be smooth, easily cleanable, and corrosion resistant, or rendered corrosion resistant with a material which is non-cracking and nonchipping. Paint will not be used except for surfaces which are normally dry. Lead base paint will not be used. If food service equipment is to be refinished, only the manufacturer's standard practice will be used.

(3) Nonfood Zone. Exposed screws, projecting screws, studs and rivet heads will be used only when other fastening methods are impractical. In areas subject to cleaning; projections, ledges and recesses will be minimized. The ends of all hollow sections of reinforcing and framing members will be closed.

4-2 WARE WASHING METHODS

4-2.1	INTRODUCTION
4-2.2	STEPS OF THE WARE WASHING PROCESS
4-2.3	WARE WASHING MACHINES, MANUFACTURERS' OPERATING INSTRUCTIONS
4-2.4	WARE WASHING MACHINE, DATA PLATE OPERATING SPECIFICATIONS
4-2.5	WARE WASHING MACHINES, INTERNAL BAFFLES
4-2.6	WARE WASHING MACHINES, TEMPERATURE MEASURING DEVICES
4-2.7	MANUAL WARE WASHING EQUIPMENT, HEATERS AND BASKETS
4-2.8	WARE WASHING MACHINES, FLOW PRESSURE DEVICE
4-2.9	WARE WASHING SINKS AND DRAINBOARDS, SELF-DRAINING
4-2.10	SANITIZING SOLUTIONS, TESTING DEVICES
4-2.11	WARE WASHING EQUIPMENT, CLEANING FREQUENCY
4-2.12	WARE WASHING EQUIPMENT, CLEAN SOLUTIONS
4-2.13	MANUAL WARE WASHING EQUIPMENT, WASH SOLUTION TEMPERATURE
4-2.14	MECHANICAL WARE WASHING EQUIPMENT, WASH SOLUTION TEMPERATURE
4-2.15	MANUAL WARE WASHING EQUIPMENT, HOT WATER SANITIZATION TEMPERATURES
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4-2.17	MECHANICAL WARE WASHING EQUIPMENT, SANITIZATION PRESSURE
4-2.18	TEMPERATURE MEASURING DEVICES

4-2.19 MANUAL WARE WASHING
4-2.20 ALTERNATIVE MANUAL METHODS

4-2.1 Introduction

a. A sufficient supply of utensils must be available to prevent the recycling of inadequately cleaned, wet or hot tableware and utensils.

b. Care must be taken to prevent contamination of clean and sanitized tableware and utensils by eliminating the cross handling of soiled and clean items and protecting the clean items from splashes or aerosols. Ware washing areas must be designed to direct the flow of tableware and utensils from the soiled areas (scraping and preflushing) to clean areas (drying area).

c. Sanitized tableware and utensils must be air dried and stored in a manner that protects the tableware and utensils from contamination resulting from unnecessary handling, dust and splashes.

4-2.2 Steps of the Ware washing Process

The six steps in the ware washing process are:

a. Sorting

b. Scraping

c. Washing

d. Rinsing

e. Sanitizing

f. Air Drying

4-2.3 Ware Washing Machines, Manufacturers' Operating Instructions

a. A ware washing machine and its auxiliary components shall be operated by the machine's data plate and other manufacturer's instructions.

b. A ware washing machine's conveyor speed or automatic cycle times shall be maintained accurately timed by the manufacturer's specifications.

4-2.4 Ware Washing Machine, Data Plate Operating Specifications

Ware washing machines will be provided with an easily accessible and readable data plate affixed to the machine by the manufacturer that indicates the machine's design and operating specifications including the:

a. Temperatures required for washing, rinsing, and sanitizing;

b. Pressure required for the fresh water sanitizing rinse unless the machine is designed to use only a pumped sanitizing rinse; and

c. Conveyor speed for conveyor machines or cycle time for stationary rack machines.

4-2.5 Ware Washing Machines, Internal Baffles

Ware washing machine wash and rinse tanks shall be equipped with baffles, curtains, or other means to minimize internal cross contamination of the solutions in wash and rinse tanks.

4-2.6 Ware Washing Machines, Temperature Measuring Devices

Ware washing machines will be equipped with a temperature measuring device that indicates the temperature of the water:

a. In each wash and rinse tank; and

b. As the water enters the hot water sanitizing final rinse manifold or in the chemical sanitizing solution tank.

4-2.7 Manual Ware Washing Equipment, Heaters and Baskets

If hot water is used for sanitization in manual ware washing operations, the sanitizing compartment of the sink shall be:

a. Designed with an integral heating device that is capable of maintaining water at a temperature not less than 171°F (77°C); and

b. Provided with a rack or basket to allow complete immersion of equipment and utensils into the hot water.

4-2.8 Ware Washing Machines, Flow Pressure Device

a. Ware washing machines that provide a fresh hot water sanitizing rinse will be equipped with a pressure gauge or similar device such as a transducer that measures and displays the water pressure in the supply line immediately before entering the ware washing machine; and

b. If the flow pressure measuring device is upstream of the fresh hot water sanitizing rinse control valve, the device will be mounted in a 6.4 millimeter or one-fourth inch iron pipe size (IPS) valve.

c. Paragraphs (a) and (b) above do not apply to a machine that uses only a pumped or recirculated sanitizing rinse.

4-2.9 Ware Washing Sinks and Drainboards, Self-draining

Sinks and drainboards of ware washing sinks and machines shall be self-draining.

4-2.10 Sanitizing Solutions, Testing Devices

The concentration of sanitizing solution(s) shall be verified with a test kit or other device that accurately measures the concentration in mg/L or ppm.

4-2.11 Ware Washing Equipment, Cleaning Frequency

Ware washing machines; the compartments of sinks, basins, or other receptacles used for washing and rinsing equipment and utensils will be cleaned:

a. Before use;

b. Throughout the day at a frequency necessary to prevent recontamination of equipment and utensils and to ensure the equipment performs its intended function; and

c. At least every 24 hours.

4-2.12 Ware Washing Equipment, Clean Solutions

The wash, rinse, and sanitize solutions shall be maintained free of food or other organic matter that affect solution performance.

4-2.13 Manual Ware Washing Equipment, Wash Solution Temperature

The temperature of the wash solution in manual ware washing equipment shall be maintained at not less than 110°F (43°C) unless a different temperature is specified on the cleaning agent manufacturer's label instructions.

4-2.14 Mechanical Ware Washing Equipment, Wash Solution Temperature

a. The temperature of the wash solution in spray type warewashers that use hot water to sanitize may not be less than:

(1) For a single tank, stationary rack, single temperature machine, 165°F (74°C);

(2) For a single tank, conveyor, dual temperature machine, 160°F (71°C);

(3) For a stationary rack, dual temperature machine, 150°F (66°C); or

(4) For a multitank, conveyor, multitemperature machine, 150°F (66°C).

b. The temperature of the wash solution in spray type warewashers that use chemicals to sanitize may not be less than 120°F (49°C).

4-2.15 Manual Ware Washing Equipment, Hot Water Sanitization Temperatures

If immersion in hot water is used for sanitizing in a manual operation, the temperature of the water shall be maintained at 171° F (77° C) or above.

4-2.16 Mechanical Ware Washing Equipment, Hot Water Sanitization Temperatures

a. In a mechanical operation, the temperature of the fresh hot water sanitizing rinse as it enters the manifold may not be more than 194°F (90°C), or less than:

(1) For a single tank, stationary rack, single temperature machine, 165°F (74°C); or

b. For all other machines, 180°F (82°C).

4-2.17 Mechanical Ware Washing Equipment, Sanitization Pressure

The flow pressure of the fresh hot water sanitizing rinse in a ware washing machine may not be less than 15 pounds per square inch (100 kilopascals) or more than 25 pounds per square inch (170 kilopascals) as measured in the water line immediately upstream from the fresh hot water sanitizing rinse control valve.

4-2.18 Temperature Measuring Devices

Temperature measuring devices shall be calibrated in by the manufacturer's specifications as necessary to ensure their accuracy. Each device will be accurate to ± 3°F (± 1.5°C).

4-2.19 Manual Ware Washing

4-2.19.1 Equipment
4-2.19.2 Field Messing

4-2.19.1 Equipment

a. A three-compartment deep sink is basic for proper manual ware washing procedures. If a three-compartment sink cannot be provided, a two-compartment sink and/or other containers, e.g., large kettle, etc., may be used provided adequate provisions are made to accomplish the six steps of the ware washing process.

b. Accessory equipment and supplies required for proper manual ware washing include a booster heater for the final rinse sink, thermometers for monitoring the final rinse water temperatures, a drip and drain basket and/or arm length rubber gloves for the final rinse, approved brushes, hand ware washing compounds, and sanitizing agents.

4-2.19.2 Field Messing

Manual ware washing methods are contained in NAVMED P-5010 Chapter 9, Preventive Medicine for Ground Forces.

4-2.20 Alternative Manual Methods

When ware washing in sinks or ware washing machines is impractical, ware washing will be done by alternate methods, as approved by the PMA:

a. Disassemble as necessary to permit access to all parts;

b. Scrape or rough clean to remove gross food particle

accumulation;

c. Clean the equipment using a high pressure detergent spray, a line pressure spray detergent foam or a swabbing/brushing procedure using a detergent solution.

d. Rinse the washed equipment with potable water or detergent sanitizer solution.

e. Manually swab or pressure spray the equipment with the concentration of detergent sanitizer or chemical sanitizer specified on the label.

4-3 WARE WASHING AGENTS

a. Detergents. The efficiency of the detergent is affected by the degree of hardness of the water. Different detergents are available for hard and soft waters. Preference should be given to a detergent demonstrated to be effective with the particular water supply used. Water produced by a ship's distilling plants is normally very soft.

b. Detergent Feeding. Detergent must be added to ware washing machines. It can be added manually; however, automatic dispensers are highly recommended. The proper amount of detergent will depend on the capacity of the tank and hardness of the water. Detergent should be added to the machine as directed in the manufacturer's recommendations.

c. Unauthorized Ware Washing Agents. General purpose cleaning agents which do not specifically state, on the label, the intended use is for food contact surfaces will not be used for washing tableware and utensils. Manual ware washing compounds must not be used in ware washing machines and ware washing machine detergent will not be used for manual ware washing.

4-4 SANITIZING AGENTS (DISINFECTANTS)

4-4.1 MANUAL AND MECHANICAL WARE WASHING EQUIPMENT, CHEMICAL SANITIZATION TEMPERATURE, pH, CONCENTRATION, AND HARDNESS

4-4.2 MANUAL WARE WASHING EQUIPMENT, CHEMICAL SANITIZATION USING DETERGENT SANITIZERS

4-4.3 WARE WASHING EQUIPMENT, DETERMINING CHEMICAL SANITIZER CONCENTRATION

4-4.4 HOT WATER AND CHEMICAL SANITIZING

4-4.5 STRENGTH DETERMINATIONS

4-4.1 Manual and Mechanical Ware Washing Equipment, Chemical Sanitization Temperature, pH, Concentration, And Hardness

A chemical sanitizer used in a sanitizing solution for a manual or mechanical operation shall be used per the EPA-Approved manufacturer's label use instructions and as follows:

a. A chlorine solution shall have a minimum temperature based on the concentration and pH of the solution as listed in table 1-5.

Table 1- 5. Requirements for a 10 second chlorine rinse

Minimum Chlorine Concentration	Minimum Water Temperature	
mg/L (ppm)	pH 10 or less °F	pH 8 or less °F
25	120	120
50	100	75
100	55	55

b. An iodine solution shall have a:

(1) Minimum temperature of 75°F (24°C),

(2) A pH of 5.0 or less or a pH no higher than the level for which the manufacturer specifies the solution is effective; and

(3) Concentration between 12.5 mg/L and 25 mg/L;

c. A quaternary ammonium compound solution shall:

(1) Have a minimum temperature of 75° F (24°C),

(2) Have a concentration as required in 21 CFR 178.1010 sanitizing solutions and as indicated by the manufacturer's use directions included in the labeling, and

(3) Be used only in water with 500 mg/L hardness or less, or in water having a hardness no greater than specified by the manufacturer's label.

d. Other chemical sanitizers approved by the PMA may be used if they are applied per the manufacturer's use directions included in the labeling.

4-4.2 Manual Ware Washing Equipment, Chemical Sanitization

If a detergent sanitizer is used to sanitize in a cleaning and sanitizing procedure where there is no distinct water rinse between the washing and sanitizing steps, the agent applied in the sanitizing step shall be the same detergent sanitizer that is used in the washing step.

4-4.3 Ware Washing Equipment, Determining Chemical Sanitizer Concentration

Concentration of the sanitizing solution shall be accurately determined by using a test kit or other device.

4-4.4 Hot Water and Chemical Sanitizing

After washing, equipment food contact surfaces and utensils shall be sanitized in:

a. Hot water manual operations by immersion for at least 30 seconds as specified under section 4-2.15;

b. Hot water mechanical operations by being cycled through equipment that is set up as specified under section 4-2.3 and 4-2.16 and 4-2.17 and achieving a utensil surface temperature of 160°F (71°C) as measured by an irreversible registering temperature indicator; or

c. Chemical manual or mechanical operations, including the application of sanitizing chemicals by immersion, manual swabbing, brushing, or pressure spraying methods, using a solution as specified under section 4-4.1 by providing:

(1) An exposure time of at least 10 seconds for a chlorine solution,

(2) An exposure time of at least 30 seconds for other chemical sanitizer solutions, or

(3) An exposure time used in relationship with a combination of temperature, concentration, and pH that yields sanitization as defined in this chapter.

4-4.5 Strength Determinations

Table 1-6 indicates the amount (in ounces) of chlorine compound required for initial concentration of 200 ppm free available chlorine(FAC) and the amount (in ounces) of iodine type disinfectant required for an initial dilution of 25 ppm. Always follow directions on the container label.

a. Table 1-6 is a guide to determine the proper amount of sanitizing solution for each amount of water. For specific guidelines follow the manufacturers' recommendation.

Table 1-6. Ounces of agent required for chemical sanitizing solution

Gallons of Water	5	10	15	20	25
Required Ounces of Agent:					
Sodium Hypochlorite Liquid 5% available chlorine to make 200 ppm solution	2.5	5.0	7.5	10.0	12.5
Sodium Hypochlorite Liquid 10% available chlorine to make 200 ppm solution	1.25	2.5	3.75	5.0	6.25
Disinfectant, Liquid, Iodine Type to make 25 ppm solution	1.0	2.0	3.0	4.0	5.0
Note: Three teaspoons equal 1 tablespoon. Two tablespoons equal 1 ounce. Eight ounces equal 1 cup.					

4-5 AUTOMATIC COLD WATER GLASS WASHER

a. Bars in military clubs and messes may use automatic cold water glass washers provided they meet NSF standards and other provisions discussed in this chapter.

b. When inspecting bar areas, the PMA must ensure approved products are used and the glass washer is being operated as recommended by the machine manufacturer's operating instructions.

4-6 MESSING FACILITY SANITATION

4-6.1 DAILY INSPECTION OF TABLEWARE
4-6.2 MESSING FACILITY TABLES
4-6.3 PEST CONTROL SURVEYS

4-6.1 Daily Inspection of Tableware

Tableware must be inspected daily by supervisory personnel. Forks with broken or badly bent tines must be immediately removed from use and surveyed. Badly worn, rough edge spoons, chipped or cracked cups, dishes, glasses, and other dinnerware will be surveyed and discarded on detection. These items should be removed during the sorting procedure, prior to ware washing.

4-6.2 Messing Facility Tables

During the meal period and prior to closing each day, tables and seating areas will be cleaned using the "two pan method" with one pan containing a mild detergent and water solution and the second pan containing a rinse solution.

4-6.3 Pest Control Surveys

During food sanitation inspections the PMA shall conduct pest control surveys. Specific procedures for accomplishing surveys and establishing proper control techniques are contained in the Shipboard Pest Control Manual, BUMEDINST 6250.13 or superseding instruction, and NAVMED P-5010, Chapter 8, Medical Entomology and Pest Control Technology of this manual.

4-7 UTENSILS AND EQUIPMENT

4-7.1 FOOD SERVICE EQUIPMENT
4-7.2 STEAM JACKETED KETTLES AND URNS
4-7.3 CAN OPENERS
4-7.4 WOODEN FOOD SERVICE EQUIPMENT
4-7.5 CUTTING BOARDS
4-7.6 SPONGES AND CLEANING CLOTHS
4-7.7 METAL POLISH
4-7.8 STEEL WOOL
4-7.9 UTENSILS
4-7.10 SINGLE SERVICE AND SINGLE USE ARTICLES
4-7.11 STORAGE EQUIPMENT
4-7.12 MICROWAVE OVENS

4-7.1 Food Service Equipment

Food service equipment must be maintained in good operating condition and serviced when required. Equipment which is no longer used or is unserviceable, must be removed from the galley spaces. Utensils and food contact surfaces of equipment must be cleaned and sanitized.

a. Utensils and equipment used in production line, processing, or continuous operations must be cleaned and sanitized as follows:

(1) Each time there is a change in processing between types of raw animal products such as beef, fish, lamb, pork, and poultry;

(2) Each time there is a change from raw to ready-to-eat foods;

(3) After any substantial interruption of operations in which contamination may have occurred;

(4) Throughout the day at intervals necessitated by food temperature, type of food, and food particle accumulation;

(5) After final use each working day.

b. Utensils and food contact surfaces of equipment used in noncontinuous food operations must be cleaned and sanitized:

(1) After each use;

(2) After a substantial interruption of operations in which contamination may have occurred.

4-7.2 Steam Jacketed Kettles and Urns

a. Steam jacketed kettles and urns must be scrubbed inside and outside after each use with a scrub brush and detergent solution followed by a rinse with potable water and a sanitizing rinse of either hot water or chemical sanitizing rinse. See section 4-4.4 above, NSTM 9340 or NAVSUP PUB 421 Appendix B for details.

b. The PMA should ensure steam jacketed kettles:

(1) Are equipped with functional steam safety release valves.

(2) Have at least 18" long chains on the steam safety relief valves.

(3) Have steam discharge piped down to kettle coamings and directed away from operators.

(4) Steam and water piping are protected by a perforated corrosion resistant steel (CRES) or aluminum shield which surrounds the pipe with approximately ½" standoff from the pipe.

(5) Are in compliance with hydrostatic testing periodicity.

4-7.3 Can Openers

Cutting or piercing parts of can openers must be readily removable for cleaning and for replacement.

4-7.4 Wooden Food Service Equipment

a. Except as specified below, wood and wood wicker may not be used as a food contact surface.

b. Hard maple or an equivalently hard, close-grained wood may be used for:

(1) Cutting boards; cutting blocks; bakers' tables; and utensils such as rolling pins, doughnut dowels, salad bowls, and chopsticks;

(2) Wooden paddles used in confectionery operations for pressure scraping kettles when manually preparing confections at a temperature of 110°C (230°F) or above.

c. Whole, uncut, raw fruits and vegetables, and nuts in the shell may be kept in the wood shipping containers in which they were received.

d. If the nature of the food requires removal of rinds, peels, husks, or shell before consumption, the whole, uncut, raw food may be kept in:

(1) Untreated wood containers;

(2) Treated wood containers if the containers are treated with a preservative that meets the requirements specified in 21 CFR 178.3800, Preservatives for Wood.

4-7.5 Cutting Boards

Cutting boards must be cleaned and sanitized after each use. This includes those occasions when different meat products or the same meat products (after a substantial interruption) are to come in contact with the same cutting board. Cleaning and sanitizing may be accomplished manually or by machine. Cutting boards must not contain cut marks that impede cleaning and sanitizing. Cutting boards which are scored or cut should be resurfaced or discarded.

4-7.6 Sponges and Cleaning Cloths

All sponges and cleaning cloths used for cleaning galley utensils and equipment must be washed and sanitized after each meal period. Sponges may not be used in contact with cleaned and sanitized or in use food contact surfaces.

4-7.7 Metal Polish

Metal polish is not approved for use on food contact surfaces. When metal cleaners and polishes are used for nonfood contact surfaces, food products, utensils, dinnerware and food packaging materials must be removed from the space or carefully protected. All odors associated with these compounds must be dissipated before food products, etc., are reexposed in the space.

4-7.8 Steel Wool

The use of steel wool for cleaning equipment, utensils, and other food contact surfaces is prohibited. Metal sponges (carried in the supply system) may be used, but must be discarded when they show signs of wear.

4-7.9 Utensils

a. All utensils used in food preparation or service shall be cleaned and sanitized by manual or machine ware washing after each use.

b. A food dispensing utensil shall be available for each food item on a self-service unit such as a buffet or salad bar.

c. All "in use" food dispensing utensils shall be properly stored to prevent contamination of the food item.

4-7.10 Single Service and Single Use Articles

a. Single service and single use articles are required when cleaning and sanitizing of regular utensils cannot be properly accomplished.

b. Single service and single use articles may not be reused.

c. Disposable flatware shall be dispensed in a sanitary manner.

4-7.11 Storage Equipment

Storage shelves, racks, cabinets, or drawers in food preparation or serving areas must be kept free from food residues and debris.

Liners (aluminum foil and wax paper) should not be used in drawers or on shelving because they allow food to accumulate and provide insect harborages.

4-7.12 Microwave Ovens

a. Microwave ovens shall meet the safety standards specified in 21 CFR 1030.10 Microwave Ovens.

b. Microwave ovens must be cleaned daily or as often as necessary.

4-8 HAZARDOUS METALLIC COATINGS

a. Only materials which meet NSF Standard No. 2 or its equivalent may be used in the construction of food service utensils and equipment.

b. Enameled ware, galvanized metal, copper, cadmium, antimony, zinc or tin utensils will not be used for food contact surfaces. The soluble salts and/or oxides of such heavy metals can cause abrupt and severe gastrointestinal symptoms, typically in a setting where foods or beverages of high acid content have reacted chemically with the metal containers in which they were prepared or stored.

c. Silver plated pitchers or bowls must not be used for holding or serving acidic food or beverages. Even minor pitting or scratching exposes the underlying copper to the leaching action of the acid food or drink. Sufficient copper ions may be present in such beverages to result in copper poisoning. Stainless steel, plastic or glass containers are recommended for dispensing acidic food and beverages.

Section V. STRUCTURAL REQUIREMENTS AND SANITARY CONTROLS

5-1 INTRODUCTION
5-2 FLOORS, WALLS AND CEILINGS
5-3 LIGHTING AND VENTILATION
5-4 DRESSING ROOMS AND LOCKERS
5-5 HOUSEKEEPING
5-6 WATER SUPPLY AND SEWAGE DISPOSAL
5-7 TOILET AND LAVATORY FACILITIES
5-8 GARBAGE AND REFUSE DISPOSAL
5-9 INSECT AND RODENT CONTROL
5-10 POISONOUS OR TOXIC MATERIALS

5-1 INTRODUCTION

Basic structural standards in food establishments shall conform to the requirements in this chapter, the Department of Defense Construction Criteria Manual, DoD 4270.1M, and NAVSEA S9-AAO-AA-SPN-010/GEN-SPEC, General Specifications For Ships of the United States Navy, whichever is applicable. The installation PMA should be involved with design review of all new construction and rehabilitation of Navy and Marine Corps food establishments at shore stations.

5-2 FLOORS, WALLS, AND CEILINGS

5-2.1 FLOORS (DECKS)
5-2.2 WALLS AND CEILINGS (BULKHEADS AND OVERHEADS)

5-2.1 Floors (Decks)

a. The floors in all food preparation areas, food storage areas, ware washing areas, walk-in refrigerators and freezers, dressing rooms, locker rooms, toilet rooms, vestibules, inside refuse storage rooms, and food vending machine areas must be constructed of smooth durable, sealed concrete, terrazzo, quarry tile, ceramic tile, durable grades of vinyl/plastic tile, vinyl or plastic linoleum, or tight-fitting plastic impregnated wood.

b. Adequate drains must be provided in floors which are flushed with water for cleaning or which receive discharges of water or other fluid wastes from equipment. Floors will be graded to drain.

c. Floors which are water flushed, receive discharges of water or other fluid wastes, or are in areas where pressure spray methods of cleaning are used must be made of nonabsorbent materials.

d. Carpeting may be used on the floors of dining areas. It must be of closely woven, easily cleanable material and installed tightly against the wall under the coaming or installed away from the wall with a space between the carpet and the wall that permits easy cleaning of the space with the edges of the carpet secured by metal stripping or some other means. Carpeting must not be installed as a floor covering in food preparation areas, food storage areas, ware washing areas, hand washing areas and toilet room areas where urinals and toilets are located.

e. Supplemental flooring such as nonskid surfaces, mats, and duckboards must be designed to be easily cleanable, constructed of nonabsorbent material and be grease resistant in areas exposed to large amounts of grease and water. When used as a mat in areas not exposed to large amounts of grease and water, they should be constructed of rubber/plastic backed closely woven material. Supplemental flooring should be NSF listed or equivalent.

f. All floors must be kept clean.

5-2.2 Walls and Ceilings (Bulkheads and Overheads)

a. The walls, wall coverings and ceilings in areas listed in section 5-2.1 must be nonabsorbent.

b. When concrete, pumice blocks, or bricks are used for interior wall construction, they must be finished and sealed to provide a nonabsorbent, easily cleanable surface.

c. Wall and ceiling covering materials must be attached and sealed so they are easily cleanable.

d. Light fixtures, vent covers, wall mounted fans, decorative materials and similar attachments to walls and ceilings must be easily cleanable.

e. Studs, joists, rafters and piping in shore based facilities will not be exposed in areas listed in section 5-2.1, except that studs, joists, and rafters may be exposed in the overhead protection of outside service areas. Piping may be exposed aboard ship if it is finished to provide an easily cleanable surface.

5-3 LIGHTING AND VENTILATION

5-3.1 LIGHTING
5-3.2 VENTILATION

5-3.1 Lighting

a. At least 10-foot candles of lighting must be available at any time in all food service areas and rooms including walk-in units.

b. The lighting on food preparation and ware washing work surfaces must be at least 50 foot candles.

c. The lighting in packaged food and fresh produce sales areas, hand washing areas, ware washing areas, equipment and utensil storage areas, and toilet areas must be at least 20 foot candles at a distance of 30 inches from the floor.

d. Shielding to protect food from broken glass must be provided for all artificial lighting fixtures located over, by, or within food storage preparation, service, and display facilities and areas where food service equipment is cleaned and stored.

5-3.2 Ventilation

a. Food service establishments must be ventilated, mechanically if necessary, to be free of excessive heat, steam, condensation, vapors, obnoxious odors, smoke, and fumes.

b. If necessary, all rooms, areas, and equipment from which aerosols, offensive odors, or noxious gases or vapors may originate must be vented effectively to the outside.

c. Intake air ducts will be designed and maintained to prevent the entrance of dust, dirt, insects, and other contaminated materials.

d. Ventilation hoods and grease filters must be cleaned of dirt and grease as often as necessary, and at least weekly to avoid the danger of fire. Filters which cannot be adequately cleaned must be replaced.

e. On surface ships, General Specifications for Ships of the United States(NAVSEA S9AAO-AASPN-010/GEN-SPEC) requires a ventilation grease interceptor hood be installed over each steam kettle, roast oven, bake oven, convection oven, griddle, fry kettle, doughnut fryer, deep fat fryer and range. These interceptors are equipped with a semiautomatic detergent cleaning system. The hood serving the deep fat fryer and doughnut fryer must be fitted with a fire extinguishing system.

f. The interior of ventilation ducting must be cleaned periodically as required by the preventive maintenance system. Access plates must be provided as necessary to gain cleaning access to duct work.

g. Temperatures in shipboard spaces that equal or exceed 100°F must be reported to the Medical Department immediately.

5-4 DRESSING ROOMS AND LOCKERS

a. Dressing rooms or designated dressing areas must be provided outside food preparation, storage, and serving areas, equipment storage areas, and sculleries when employees routinely change their clothes within the establishment.

b. Adequate lockers or other suitable facilities must be provided and used for the storage of employees' clothing and belongings.

c. Dressing rooms, designated dressing areas, and lockers must be kept clean and orderly.

5-5 HOUSEKEEPING

5-5.1 GENERAL
5-5.2 CLEANING METHODS
5-5.3 SERVICE SINKS OR CURBED CLEANING FACILITY
5.5.4 MAINTENANCE EQUIPMENT AND SUPPLIES
5-5.5 UNNECESSARY PERSONS

5-5.1 General

The entire food service facility and all areas of the property used in connection with operation of the establishment must be kept neat, clean, and free of litter, refuse, and garbage.

5-5.2 Cleaning Methods

a. Dustless methods of cleaning must be used, such as wet cleaning, vacuum cleaning, mopping with treated mops, or sweeping using a broom with dust arresting compounds.

b. Sponges may not be used in contact with cleaned and sanitized or in use food contact surfaces.

5-5.3 Service Sinks or Curbed Cleaning Facility

a. The cleaning of mops and similar cleaning tools and materials, and the disposing of mop water and similar liquid

wastes in food preparation sinks, hand washing facilities, and ware washing facilities is prohibited.

b. At least one service sink or curbed cleaning facility with a floor drain must be provided for cleaning mops and for the disposal of mop water and similar liquid waste.

5-5.4 Maintenance Equipment and Supplies

Maintenance and cleaning equipment and supplies such as brooms, mops, vacuum cleaners, soaps, disinfectants and similar equipment and supplies must be:

a. Stored so they do not contaminate food, equipment, utensils, or linens.

b. Stored in a space or area that is provided with adequate ventilation to prevent malodors and allow gear to dry.

c. Stored in an orderly manner that will facilitate cleaning of the maintenance equipment storage spaces.

5-5.5 Unnecessary Persons

Unnecessary persons in the food preparation or utensil washing area are prohibited. Controlled visits/tours may be authorized by the person in charge.

5-6 WATER SUPPLY AND SEWAGE DISPOSAL

5-6.1 POTABLE WATER SYSTEM
5-6.2 STEAM
5-6.3 SEWAGE
5-6.4 EQUIPMENT CONNECTIONS

5-6.1 Potable Water System

a. Ashore, adequate potable water for the needs of the food establishment must be provided from an approved source and meet the standards of NAVMEDCOMINST 6240.1 series and/or chapter 5 of this manual.

b. At sea, potable water standards can be found in chapter 6 of this manual and/or NSTM 533.

c. Hot and/or cold water under pressure must be provided to all fixtures and equipment that use potable water.

d. Plumbing, fixtures and equipment must be installed to preclude backflow into the potable water supply system (e.g., faucets on which hoses are attached must have a backflow prevention device). Other outlets must be protected by an air gap twice the effective opening of the potable water outlet diameter, unless the outlet is a distance less than three times the effective opening away from a wall or similar vertical surface, in which case the air gap must be three times the effective opening of the outlet. In no case will the air gap be less than one inch.

5-6.2 Steam

Steam used in contact with food and food contact surfaces must be free from any materials or additives other than those specified in 21 CFR 173.310. Currently, shipboard steam contains additives which are not acceptable for use with food and/or food contact surfaces.

5-6.3 Sewage

Ashore, all sewage wastes must be disposed through an approved community sewage treatment plant or an individual sewage disposal system which is sized, constructed, maintained and operated according to law. References include Chapter 7, NAVMED P-5010; OPNAVINST 5090.1; and NSTM 593.

5-6.4 Equipment Connections

a. Ware washing machines, refrigerators, steam kettles, potato peelers, and other similar equipment must not be directly connected to the wastewater system without an air gap between the equipment and the wastewater lines. Where permitted by law, a sink may have a direct connection provided the drain line is properly trapped. Ware washing machines may have direct connections between their waste outlets and the floor drain when the connection is on the inlet side and immediately adjacent to the floor drain trap, and the floor/deck drain is properly trapped and vented.

b. Ice making machines will have an air gap as specified in section 5-6.1(c) between the outlet and the drain's wastewater line.

5-7 TOILET AND LAVATORY FACILITIES

5-7.1 TOILET FACILITIES
5-7.2 HAND WASHING LAVATORY FACILITIES

5-7.1 Toilet Facilities

a. Toilet facilities must be conveniently located, adequate in number (see 29 CFR 1910.141(c)), and easily accessible to employees at all times. Installation will be as required by the DOD Construction Criteria Manual 4270.1-M or, in the case of afloat facilities, General Specifications for Ships of the U.S. Navy, Section 644f.

b. Water closets and urinals must be designed for easy cleaning.

c. Toilet rooms must be completely enclosed and must have tight-fitting, self-closing, solid doors which are kept closed except during cleaning and maintenance, or as required to assist the handicapped

d. Toilet rooms must not open directly into food preparation areas.

e. Toilet facilities, including vestibules, must be kept clean, free of objectionable odors, and in good repair. Adequate quantities of toilet tissue, hand towels and other supplies must be provided at all times. Easily cleanable receptacles must be provided for waste materials and sanitary napkins. All receptacles will be covered with self-closing lids.

f. The storage of food, equipment, utensils, and single service articles in the toilet rooms or vestibules is prohibited.

5-7.2 Hand Washing Lavatory Facilities

a. Hand washing facilities must be conveniently located to permit use by employees in food preparation and utensil washing areas and located in, or immediately adjacent to, toilet rooms or toilet room vestibules.

b. Each hand washing facility must be designed to provide tempered water through a mixing valve or combination faucet.

c. Any self-closing, slow closing or metering faucet must provide a flow of water for at least 15 seconds without the need to reactivate the faucet.

d. Steam mixing valves are prohibited at hand washing facilities.

e. Ample supplies of powdered or liquid soap in appropriate dispensers and proper hand drying equipment such as disposable

paper towels and hot air hand dryers must be provided. The use of single service continuous cloth toweling is permitted provided it is dispensed from a cabinet that retracts all soiled toweling and bears the seal of the NSF or its equivalent. When disposable towels are used, a waste receptacle must be located at each hand washing facility or group of adjacent facilities.

f. Lavatories, soap dispensers, hand drying devices, and all other related facilities must be kept clean and in good repair.

g. In situations where food exposure is limited and hand washing facilities are not conveniently available, such as in some mobile or temporary food service facilities or at some vending machine locations, the PMA may approve chemically treated towelettes or other appropriately dispensed disinfectants for hand washing.

5-8 GARBAGE AND REFUSE DISPOSAL

5-8.1 CONTAINERS
5-8.2 STORAGE
5-8.3 DISPOSAL

5-8.1 Containers

a. Garbage and refuse must be kept in covered, durable, easily cleanable, insect and rodent resistant, leak proof, nonabsorbent containers that are maintained in good repair. Refuse containers manufactured from thermoplastic should be NSF listed or equivalent. Plastic bags and/or wet strength paper bags may be used to line containers. Refer to OPNNAVINST 5090 series for guidance on disposal of plastic materials at sea. Plastic rubber trash containers are prohibited for use on ships.

b. Refuse compactors and compactor systems should be NSF listed or equivalent. Containers and compactors must be easily cleanable and provided with tight-fitting lids, doors or covers. They must be kept closed when not in actual use. Drain plugs, where applicable, must be in place at all times, except during cleaning.

c. Sufficient numbers of garbage and refuse containers must be provided to prevent overfilling. The containers must be emptied as necessary during operations and at the close of each working day. After being emptied, each container must be thoroughly cleaned inside and outside, in a manner which will not cause contamination of food, equipment, utensils, or food preparation areas or, if cleaned outside, create a nuisance. Suitable facilities, can washer, detergent, and hot water or steam mixing valves must be provided and used for cleaning refuse

equipment and containers.

d. Soiled refuse equipment and containers must be cleaned at a frequency to prevent them from becoming insect and rodent attractors and a source of contamination.

5.8.2 Storage

a. Garbage and refuse on the premises must be stored in a manner that makes it inaccessible to insects and rodents. Outside storage of plastic containers which are not rodent resistant, e.g., unprotected plastic bags, paper bags or baled units which contain refuse, is prohibited. Cardboard or other packaging material not containing food wastes may be stored outside without being in a covered container.

b. When inside storage rooms and areas are used they must be constructed to meet the criteria in Section 5-2 and maintained in a manner which prevents or minimizes the accumulation of filth, the occurrence of odors and the existence of vermin.

c. When possible, outside storage areas or enclosures must not be located within 100 feet of the food establishment. The areas must be large enough to store the garbage and refuse containers that accumulate and must be kept clean and in good repair. The storage surface must be constructed of nonabsorbent material such as concrete, be smooth and be sloped to drain. The enclosure, if used, must be constructed of durable and cleanable materials.

d. Dumpsters and other containers used to store garbage must be thoroughly cleaned with high pressure water or steam as required. Cleaning twice each week is recommended whenever flies are present.

5.8.3 Disposal

a. Garbage produced in large volume such as produced at messes, clubs, cafeterias and commissaries should be removed from the premises at least daily by a transport vehicle, or by portable containers which are constructed, maintained and operated according to applicable law.

b. Food waste disposers or grinders may be used for garbage disposal provided they are designed and/or located in a manner which precludes contamination of food contact surfaces as a result of splash and aerosol generation. When approved by CHBUMED, shipboard waste disposers located in separate sculleries may have the capability for either fresh or salt water flushing. Proper warning plates and operating instructions must be posted

(see GENSPEC, Section 593).

c. Refuse must be removed as often as necessary to prevent nuisance or hazardous conditions. It must be disposed of by an approved public or private community refuse facility or by an individual refuse facility which is sized, constructed, maintained and operated according to law.

d. Garbage disposal as feed for hogs is prohibited in many States. This method of disposal must conform to local and State laws.

e. Disposal of garbage from vessels returning to CONUS from foreign ports must comply with requirements of SECNAVINST 6210.2 and NAVSUP PUB 486, Volume 1, Article 4033.

5-9 INSECT AND RODENT CONTROL

5-9.1 STORED PRODUCTS PESTS
5-9.2 INSECT AND RODENT ACCESS
5-9.3 PEST CONTROL OPERATIONS

5-9.1 Stored Products Pests

Guidelines for insect infestation of subsistence are contained in Chapter 8, NAVMED P-5010, Medical Entomology and MIL-STD-904A.

5-9.2 Insect and Rodent Access

a. Food service establishment openings to the outside must be effectively protected against the entrance of rodents and insects. The establishment will have no holes and other gaps along the floors, walls, and ceilings. Outside openings will be controlled by the use of self-closing tight-fitting doors and/or closed tight-fitting windows. Outside openings that are kept open for ventilation, deliveries or other purposes will have screens, air curtains or other means of protection. Screens must be tight-fitting, free of breaks or tears, and not less than 16 mesh to the inch of screen.

b. Screens are not required in air-conditioned food service spaces where windows or portholes are sealed closed. Air curtains must meet the standards of NSF Standard No.37 or be equivalent. Further guidance is available in the NAVMED P-5010 Chapter 8 and OPNAVINST 6250.4A.

5-9.3 Pest Control Operations

Only certified pest control professionals are allowed to conduct

pest control operations except for the use of approved bait stations.

5-10 POISONOUS OR TOXIC MATERIALS

5-10.1 SEPARATION
5-10.2 CONDITIONS OF USE
5-10.3 PESTICIDES

5-10.1 Separation

All poisonous or toxic materials shall be stored so not to contaminate food, equipment, utensils, linens, and single service and single use articles.

5-10.2 Conditions of use

All poisonous or toxic materials shall be properly labeled with the manufacturer's directions. Additional restrictions may be established by the regulatory authority.

5-10.3 Pesticides

Pesticides shall be stored outside food service spaces.

Section VI. INSPECTION REPORTING PROCEDURES

6-1 FREQUENCY OF INSPECTION
6-2 REPORT OF INSPECTION
6-3 FOOD ESTABLISHMENT INSPECTION REPORT
6-4 ESTABLISHMENT SCORING
6-5 CLOSURE CRITERIA

6-1 FREQUENCY OF INSPECTION

6-1.1 STANDARD FREQUENCY
6-1.2 EXEMPTIONS

6-1.1 Standard Frequency

The PMA will inspect all food establishments at least once each month unless specifically exempted by the installation regulatory authority. When a food establishment exceeds critical violation limits the PMA must promptly notify the commanding officer and increase the frequency of inspections for the food establishment until the compliance history significantly improves. Special requests by management for more frequent inspections by the PMA should be given favorable consideration as the workload permits.

6-1.2 Exemptions

Exemptions from once a month inspection requirement may be granted by the installation PMA to food establishments that demonstrate by past performance, current training, and effective management the exemption will most probably not adversely affect overall sanitary conditions. In all cases Navy and Marine Corps food establishments must be inspected at least once each quarter. Written exemptions are not required.

6-2 REPORT OF INSPECTION

6-2.1 INSPECTION FORM
6-2.2 INSPECTION FORM DISTRIBUTION
6-2.3 INSPECTION GUIDE

6-2.1 Inspection Form

Navy and Marine Corps food establishments must be inspected by the PMA in company with the person in charge or their designated representative. The findings of the PMA must be recorded on the Food Establishment Inspection Report. This form is included in Appendix C of this chapter.

6-2.2 Inspection Form Distribution

The completed Food Establishment Inspection Report will be distributed as follows:

a. Original to the commanding officer having direct responsibility for the food establishment.

b. Copy to the person in charge.

c. Retain a file copy for the PMA.

6-2.3 Inspection Guide

The inspection guide is exhibited in Appendix C and can be used as a reference checklist to remind inspectors and food establishments of the major inspection areas.

6-3 FOOD ESTABLISHMENT INSPECTION REPORT

6-3.1 INTRODUCTION
6-3.2 ADMINISTRATIVE DATA
6-3.3 VIOLATION DATA
6-3.4 RISK CATEGORIZATION OF FOOD ESTABLISHMENTS
6-3.5 TYPES OF INSPECTIONS

6-3.1 Introduction

When preparing the Food Establishment Inspection Report, NAVMED 6240/1, enter the data on the report form in the appropriate field. Use continuation pages to give a full description of the conditions found in the establishment.

6-3.2 Administrative Data

a. Enter the administrative data to clearly identify the food establishment and update the information when necessary. Use abbreviations where they do not interfere with reliable identification of the establishment.

b. Use the Inspection Type (Insp. Type) when recording the reason for the inspection. Use the Time blank for recording the time of day the inspection was made.

c. Use the Risk Category Section to designate the Food Establishment's Risk Type Category.

6-3.3 Violation Data

a. Record inspection findings on the NAVMED 6240/1 to detail the violations found during the inspection of the establishment. The form is designed to maximize the opportunity for capturing relevant information about the violations found at the time of the inspection. Use as many of the rows of the violation description section as are needed to describe the violation.

b. Indicate critical violations in the **first column, Category,** using an X. Always list the critical violations first for emphasis. Leave a blank line between individual violations cited.

c. Note repeat violations with an X in the **second column, Repeat.** Repeat items are those that were in violation on the last inspection. Indicating in this column when the original violation occurred may also be helpful.

d. Record specific NAVMED P-5010-1 section references in the **third column, Code References.** The Food Service Inspection Guide, **List of Frequent Discrepancies,** provides the basis for the noted violation and helps the person in charge to find the actual NAVMED P-5010-1 requirement. It is important to standardize inspectors in their accurate citing of the NAVMED P-5010-1. Succinctly provide the specifics of the observed violation in the **fourth column, Violation Description/Remarks/Corrections.** Record any explanations or other data, including the fact that a correction was made during the inspection. Use as many lines as necessary to explain the details of the violation. Legibility is important.

6-3.4 Risk Categorization of Food Establishments

a. Studies have shown a relationship between types of food served, preparation steps, volume of food, population served, previous compliance history and food borne illness. Each PMA will set a fixed risk category for each food establishment operating in their area of responsibility.

b. The rational allocation of inspection resources to target the highest risk establishments with more inspection time and the lowest risk establishments with the least is an HACCP approach concept. Risk categorization allows establishments to be ranked by considering risk factors and creating a variable inspection frequency for each category. An example of risk categorization and types of facilities is shown in Table 1-7.

Table 1-7. Risk categorization of food establishments

RISK TYPE	RISK TYPE CATEGORY DESCRIPTION	FACILITY TYPE
1	Prepackaged nonpotentially hazardous foods only. Limited preparation of non-potentially hazardous foods only.	AROs
2	Limited menu (1 or 2 main items). Pre-packaged raw ingredients are cooked or prepared to order. Retail food operations exclude deli or seafood departments. Raw ingredients require minimal assembly. Most products are cooked/prepared and served immediately. Hot and cold holding of potentially hazardous foods is restricted to single meal service. Preparation processes requiring cooking, cooling, and reheating are limited to 1 or 2 potentially hazardous foods.	HOT DOG TRAILER SMALL DELI
3	Extensive handling of raw ingredients. Preparation process includes the cooking, cooling, and reheating of potentially hazardous foods. A variety of processes require hot and cold holding of potentially hazardous food. Advance preparation for next day service is limited to 2 or 3 items. Retail food operations include deli and seafood departments. Establishments doing food processing at retail.	LARGE DELI SMALL CLUB
4	Extensive handling of raw ingredients. Preparation processes include the cooking, cooling, and reheating of potentially hazardous foods. A variety of processes require hot and cold holding of potentially hazardous foods. Food processes include advanced preparation for next-day service. Category would also include those facilities whose primary service population is immunocompromised.	FULL SERVICE FACILITIES (Shore galleys, ship and submarine galleys)

c. Previous compliance history should also be considered when establishing inspection frequency. Nonconformance with critical code items or HACCP plan requirements may move an establishment up into more frequent inspections until a record of

more consistent compliance is achieved.

d. There is a wide variety of methods for assigning establishments to risk categories. The simplest method for that jurisdiction is often the best.

e. Resources need to be allocated for seasonal and temporary food establishment operations. Frequently, this involves scheduling inspections on weekends and during evening hours.

f. It may be useful to schedule a number of inspections during the evening hours to get a more balanced view of certain food operations.

g. One or more of the routine inspections may be replaced with such alternatives as a full-scale HACCP study, or a staff training session.

6-3.5 Types of Inspections

a. Inspections are generally unannounced to obtain a more accurate assessment of normal operating practices and conditions. Exceptions include construction and preoperational inspections, HACCP studies, and follow up inspections, requiring the presence of specific personnel from the establishment. Full documentation should be maintained on each inspection as a part of the establishment's official agency record.

b. Inspections determine the food establishment's compliance with the NAVMED P-5010-1. These inspections may be categorized by purpose such as:

(1) **Pre-operational Inspection**

(a) A pre-operational inspection shall be conducted to ensure the establishment is built or remodeled per the approved plans and specifications. It is helpful to have plans and specification documents available during the inspection.

(2) **Routine Inspection**

(a) A full review of the food establishment operations and facilities and their impact on food safety is conducted. This includes assessment of food employee and management health, practices, and knowledge of food safety; food flows, source, storage, thawing, preparation (including cooking temperatures and times) and postpreparation processes; equipment and facility construction; cleaning and sanitizing processes; water sources; sewage disposal; and vermin control.

(b) Detailed reports are prepared at the conclusion of each inspection and presented to the person in charge. Non-compliance is categorized as critical or noncritical. Repeat items are also noted. The NAVMED P-5010-1 section in violation is included in the report citation section.

(3) **Follow Up Inspection**

(a) PMA personnel shall verify that critical violations have been corrected at the time of inspection or within 10 days of the initial routine inspection. Follow up inspections should be briefer than the routine inspection, since they concentrate on the critical violations previously reported.

(b) Corrections and continued violations should be noted on an inspection report. Continued violations should be used to initiate further compliance actions. Time available for follow up inspections will vary between jurisdictions. The compliance strategy is more effective if those follow ups are mandated in a realistic fashion, taking available resources into account.

(4) **HACCP Inspection** (See Model HACCP Inspection Data Form in Appendix C)

(a) Establishments operating under a variance requiring a HACCP plan are inspected differently. HACCP critical limits must be routinely monitored and recorded by the establishment and elements of the plan must be verified by the inspector.

(b) Copies of the HACCP plan are useful during these inspections. Additional time may be necessary to fully assess the establishment's compliance with the HACCP plan. Verifying the maintenance of the required records is an important element of the HACCP inspection. Notation in the records of process deviations that occurred and corrective actions taken in response to those deviations should not be cited as adverse findings.

(5) **Complaint Inspection**

(a) Consumer complaints received by the PMA about a food establishment requires investigation. Quick response is required for complaints related to food borne illnesses. Speed is essential to preserve memories, food and environmental samples.

(b) HACCP principles can be used to supplement traditional procedures for investigation of food borne illness.

It helps focus the investigation on foods which have been epidemiologically linked with illness.

(c) Other foods should not be completely dismissed because as more becomes known about the causes of food borne illness, foods which may not have been historically linked to illnesses are being implicated.

(d) The charting of food product flows and the designation of critical control points can help delineate potential problems. If a hazard seems evident, the suspect product or process can be recreated with the cooperation of the establishment and the critical limits monitored.

(e) Consumer complaints about food establishments should be evaluated in terms of public health significance before scheduling inspections. For example, allegations about an establishment purchasing shellfish from an illegal source should receive a higher priority than unsanitary public restrooms.

6-4 ESTABLISHMENT SCORING

6-4.1 INTRODUCTION
6-4.2 SCORING METHODS
6-4.3 DEBITING METHODOLOGY

6-4.1 Introduction

a. Certain NAVMED P-5010-1 violations are imminent health hazards and require immediate action. Sewage backed up in a food preparation area is an example of an imminent health hazard. Imminent health hazards require immediate intervention and may require closure of the facility.

b. Critical items are NAVMED P-5010-1 violations more likely to contribute to food contamination, illness, or environmental degradation and represent substantial public health hazards.

c. The NAVMED P-5010-1 allows the PMA to use professional judgement regarding some of the violations to determine their seriousness based on the likelihood of an event occurring.

6-4.2 Scoring Methods

a. The Food Establishment Inspection Report is based on citing violations in two categories, critical and noncritical. Each of the violations are expected to be corrected within given timeframes. The score, which is the number of items in

violation, is significant as an indicator of the overall control of the causes of food borne illness; however, there is no defined point at which a score translates into a significant health hazard. It is possible to have only one critical violation which has the potential for causing a food borne illness outbreak.

b. Fixed Categorization will be utilized to score establishments by using critical and non critical categories.

(1) **Fixed Categorization**

(a) In this method, a fixed number of maximum critical violations is selected for each category of establishments. The Table of Critical Violations (Table 1-8) illustrates one application of this method.

(b) The number of violations used may be adjusted to accommodate current levels of resources in the agency and varying levels of compliance at the command.

(c) When a food establishment exceeds one of the critical violation limits the PMA must promptly notify the commanding officer and the PMA will increase the frequency of inspections for the food establishment until compliance history significantly improves.

Table 1-8. Critical violation limits by facility type

Facility Type	Critical Violation Limits
1	2
2	4
3	7
4	7

6-4.3 Debiting Methodology

It is essential to standardize the inspection process. The following process specifies what constitutes a violation of the NAVMED P-5010-1:

a. Items are marked as violations on the inspection report when they clearly exist in the food establishment. A violation represents a deviation from a NAVMED P-5010-1 provision. Slight violations, such as one dirty utensil among thousands of clean ones, does not indicate that the establishment is significantly deviating from the requirement to use clean utensils.

b. Each violation of a NAVMED P-5010-1 provision is reported as a separate item on the inspection report. This does not mean that each instance should be considered a distinctly separate reportable violation. Some discretion is warranted when preparing the inspection report.

(1) For example, a cooler with mechanical problems may result in a dozen or more potentially hazardous food items being held at unsafe temperature. It may categorically be considered a malfunctioning refrigeration device under **Cooling, Heating, and Holding Capacities**, because repairs are needed to bring the unit into compliance. The food temperature violation is also cited only one time under, **Potentially Hazardous Food, Hot and Cold Holding**. Additionally, each food out of acceptable time/temperature range should be discarded by the food establishments manager and disposition noted on the report.

(2) Alternatively, the unit may be properly functioning, but improper cooling practices were used, resulting in the high temperatures being found in the potentially hazardous food. This would be a violation of **Cooling Methods, and Potentially Hazardous Food, Hot and Cold Holding.**

(3) If 12 separate coolers were found with items out of temperature as the result of 12 separate instances of improper practices by employees, each instance should be individually cited as a critical violation. The details included in each citation should clearly delineate the conditions found in each instance.

(4) Failure to clean floors is another example which can be easily visualized. A large meat cutting room may have numerous separate areas requiring cleaning. If there is a build-up of old food debris and other filth on the floor of the room in five separate areas, then one violation would exist. However, if the cleaning problem existed in multiple rooms, one violation is cited for each.

6-5 CLOSURE CRITERIA

If the PMA considers any one or more violations a significant danger to health, the PMA will promptly notify the commanding officer and recommend the facility immediately cease food service until the significant danger to health has been eliminated.

APPENDIX A. FOOD BORNE ILLNESSES

A-1 GENERAL INFORMATION
A-2 FOOD BORNE ILLNESSES
A-3 GUIDELINES FOR INVESTIGATING FOOD BORNE ILLNESS

A-1 GENERAL INFORMATION

a. Food is defined as a substance taken or absorbed in the body of an organism in order to sustain growth and repair, support vital processes and furnish energy for all activities of the organism. Though it is usually considered necessary for the preservation and maintenance of good health, there are several instances in which food may be harmful to an individual's health.

b. Food can affect health as a result of:

(1) Hypersensitivity or allergic conditions in which individuals will exhibit symptoms of an allergic reaction usually immediately upon ingestion of the food. The symptoms range from lip swelling, mild rash, angioedema to anaphylactic shock.

(2) Enzymes and other deficiency conditions in which the complete absence or abnormal function of an enzyme or substrate of a specific metabolic process will result in the abnormal processing of certain food. An example is lactase deficiency. In individuals who are deficient in this intestinal mucosal enzyme which catalyzes the breakdown of lactose, the ingestion of milk (which contains lactose) will result in abdominal cramping, bloating, flatulence, and diarrhea. This generally results in the abnormal accumulation of certain metabolites and deficiency of others.

(3) Contamination in which the food serves as a major vehicle for transmission of diseases in the population. Production and processing of food creates many opportunities for contamination before it reaches the consumer.

A-2 FOOD BORNE ILLNESSES

a. Food borne illnesses are syndromes acquired by the consumption of food contaminated by disease pathogens, microbial toxins, or poisonous chemical substances. These illnesses are frequently subclassified as infections or intoxications.

b. **Food Borne Infection:**

(1) A food borne infection is caused by the ingestion of food containing pathogenic microorganisms (i.e., bacteria, virus

or parasite) which must multiply within the gastrointestinal tract, producing widespread inflammation. The most commonly implicated microorganisms include species of *Salmonella, Shigella, E. coli 0157:H7*, etc. These infections have longer incubation periods than those experienced with food intoxications, usually commencing from 6-24 hours or longer after ingestion. Symptoms may include fever, headache, nausea, vomiting, diarrhea, abdominal pain or distress, and prostration. The causative organism may be identified by laboratory examination of the vomitus, feces, or blood and the suspected food, when available.

(2) Foods most commonly incriminated in outbreaks of food borne infections are meat and seafood mixtures such as hash, hamburger, creamed meat pies, crab, lobster, chicken, and turkey salads, turkey, turkey stuffing or dressing, and ham. These foods have common characteristics in they provide moisture, a good protein food supply and warmth. Given sufficient time, these factors promote an ideal environment for the growth and multiplication of microorganisms. It is important to remember these organisms do not necessarily cause any alteration in the normal appearance, odor, or taste of the food.

c. **Food Borne Intoxication:**

(1) Certain bacteria under favorable growth conditions produce chemicals (toxins) in food which when ingested will cause food intoxication. Enterotoxins produced by *Staphylococcus aureus* are heat stable (i.e., not destroyed by normal cooking temperatures) and are the cause of the most common food borne intoxication. The staphylococci multiply in the food where they produce their toxins before the food is consumed. It generally takes less than 8 hours for these organisms to elaborate enough toxins to cause symptoms. The disease is characterized by an abrupt onset (2 to 4 hours after ingestion) of symptoms of severe nausea, vomiting, diarrhea, and prostration with little or no fever.

(2) Staphylococcal food intoxication usually follows ingestion of starchy food, especially potato salad, custard and pies. When the offending food is meat, pork (including ham and salami) and poultry products are usually the source. Ham may become contaminated with staphylococci during the practice of boning, slicing and holding without adequate refrigeration for several hours before serving. In addition, highly salted ham permits staphylococcal growth but inhibits many other bacteria. Other foods commonly involved are canned or potted meat or fish, pressed tongue, beef, cheese, other milk products, cream or custard filled pastries, potato salad, and pasta salads. The usual source of the pathogens, which cause this form of food

intoxication, may be the nose, throat, boils, pimples, or infected cuts on the hands of food service personnel.

(3) Exotoxins produced by *Clostridium botulinum* cause a highly publicized but an increasingly rare disease called botulism. This disease, which causes death in about 18% of patients even with adequate treatment, is most frequently associated with home canned low acid foods (vegetables and fruits) which have been improperly processed. Ingestion of inadequately cooked toxin containing food leads to nerve toxicity manifested by symptoms of weakness, headache, and dizziness, and sometimes death due to respiratory or cardiac failure. Cases of botulism have also resulted from home canned meats and fish, smoked fish, and improperly prepared commercial products, such as vichyssoise soup and potpies.

(4) Toxins produced in food contaminated by *Bacillus cereus, Clostridium perfringens,* and *Vibrio parahaemolyticus* also cause food borne illness outbreaks.

(5) Natural poisons or intoxicants found in certain plants and animal. Some foods are poisonous at the time they are harvested. Many of the poisons in these foods tend to attack the nervous system resulting in such symptoms as weakness or paralysis, numbness, tingling of the ears, apprehension and even death. Some fish and shellfish concentrate poisons produced by toxic plankton. Certain fish (grouper, snapper, jack, and barracuda) concentrate ciguatoxin, while mollusks (clams, oysters, scallops, and mussels) concentrate the toxin associated with "red tide." Naturally poisonous plants and animals include certain mushroom species and certain tropical fish (puffer type fish and ocean sunfish).

(6) Poisons may be intentionally or incidentally introduced in foods as a result of production, processing, transportation or storing. Chemical poisonings may be caused by arsenic residue of spray on fruits or vegetables cadmium or zinc dissolved by acid foods, such as a lemonade gelatin, tomatoes etc., cadmium plated or galvanized pitchers or cans; or exposure of food and food service equipment to insecticides or other chemicals such as cleaning compounds. Chemical poisonings usually cause violent nausea, vomiting, and diarrhea very shortly after ingestion.

A-3 INVESTIGATING FOOD BORNE DISEASE OUTBREAKS

a. A food borne disease outbreak (FBDO) is defined as an incident in which two or more persons experience a similar illness resulting from the ingestion of a common food and epidemiological analysis implicates the food as the source of the

illness. Food borne disease outbreaks include a single case of illness such as one person ill from botulism or chemical poisoning.

b. In the event of a suspected food borne outbreak, prompt action must be taken to identify cases associated with the outbreak, identify implicated food or beverage items, determine the factor or combination of factors which permitted the outbreak to occur and initiate measures to control or contain the spread of infection. Early identification of the causative agent allows for specific treatment of patients. Additional cases can be prevented by halting service or sale of an implicated food item. Future outbreaks can be prevented by modifying or correcting procedures for acquiring, processing and handling the implicated food. Assistance with any investigation may be obtained from the nearest occupational health/preventive medicine department at a naval hospital or clinic or NAVENPVNTMEDU by telephone or message request. *Procedures to Investigate Food borne Illness,* a publication of the International Association of Milk, Food and Environmental Sanitarians, Inc., P.O. Box 702, Ames, Iowa 50010, provides excellent guidelines for conducting an investigation.

c. Outbreak Investigation Procedures. An outbreak investigation is composed of several parts, many of which must be performed promptly and simultaneously by the person or persons conducting the investigation. Ideally, procedures, materials, personnel and responsibilities for initiating and conducting an investigation would have been developed in advance.

(1) Verify there is an epidemic or outbreak. When suspected cases of food borne illness are reported, the first step involves verifying whether an outbreak actually exists.

(2) Complete case history questionnaires.

(a) A case history questionnaire must be completed for each ill person. Figure 1-9 provides an example.

(b) A questionnaire should also be completed for any person who has not been ill, but who may have been exposed to the suspect food item, meal, or facility. These "controls" can include family members, roommates, coworkers, shipmates, and any others at risk who remained well. Comparisons of ill and well persons (e.g., food specific attack rates) are used to analyze factors contributing to the outbreak.

(c) Valid case history questionnaires collect information about: the person (name, rate or grade, social security number, residential address or work/berthing as assignments, duty station, age, race, sex, and telephone number);

their illness, if any (specific symptoms and specific times at which symptoms developed), and food history (when, where and what was eaten, as precisely as possible). The time at which food was eaten and symptoms started must be recorded precisely, e.g.,"0100" or "1245." Responsible persons should interview and complete a questionnaire for each person.

(3) Establish a diagnosis etiologically if possible, otherwise define cases clinically or epidemiologically. Obtain clinical specimens from patients, for laboratory analysis to isolate or identify the etiologic agents. Ideally, specimens should be collected during the acute phase of the illness when the patient is first seen or when the initial interview is conducted. Convalescent specimens collected after the patient recovers may be useful for comparison. If the patient has diarrhea, obtain a stool specimen or rectal swab. If the person is vomiting, collect vomitus. Blood specimens are used to detect antibodies, or isolate pathogens. Blood and/or urine specimens may also be useful in confirming diagnosis of chemical food poisoning. Contact the laboratory officer at the nearest medical treatment facility or NAVENPVNTMEDU for guidance on collecting, storing, and shipping samples for analysis. If the demand for laboratory analyses exceeds the capability of the MTF laboratory, contact the nearest NAVENPVNTMEDU. The units maintain a public health laboratory capability to conduct analysis of clinical specimens from an outbreak investigation or can assist in arranging for appropriate laboratory analysis.

(4) Collect food samples and containers. If food items are leftover from a suspect meal, or if a commercial product is suspected, collect and preserve samples for laboratory analysis. Remaining stocks of suspect food should not be used until the investigation is complete. Use aseptic techniques and containers to collect samples; seal and label each container. Collect a sample of each item weighing ½ to 1 pound or measuring ½ to 1 pint, if less is available collect all of it. Samples of perishable foods should be chilled and held below 41°F (4°C) but should not be frozen. Commercial foods in containers (e.g., jars or cans) should be kept in those containers. Empty containers of suspect commercial products should also be collected and preserved. Contact the nearest NAVENPVNTMEDU for additional guidance on collecting, storing and shipping samples for analysis. NAVENPVNTMEDU laboratories can analyze food samples or can assist in arranging for appropriate laboratory analyses.

d. Develop a case definition. A case definition allows exposed persons to be classified as either cases or noncases. A case is usually defined by symptoms, e.g., a person who was at risk and developed diarrhea (3 or more watery stools within a 24-hour period), and a timeframe. Use the data collected during the

initial phase of the investigation to establish the definition. A case definition may be specific, e.g., diarrhea and fever (temperature greater than 100.5°F) or more general, (e.g., diarrhea, nausea or vomiting with or without fever). Cases can be categorized further as confirmed or suspected. A confirmed case meets the case definition and has laboratory evidence of infection (e.g., diarrhea and laboratory isolation of a pathogenic bacteria), while a suspected case meets the case definition but laboratory confirmation is lacking or incomplete (e.g., diarrhea only).

e. Make epidemiologic associations.

(1) Although the investigation is not complete, a preliminary assessment of available data helps to confirm an outbreak has or has not occurred. The investigator needs to decide if two or more persons experienced a similar illness and the cases are associated by time (e.g., onset within a few hours or days of each other), place (e.g., eating at the same establishment or event) and/or person (e.g., eating same foods).

(2) Develop a hypothesis about the type of illness, possible vehicles of transmission and means by which the vehicle was contaminated. Hypotheses are possible explanations for the outbreak; more investigation and/or more data may be necessary to prove or disprove their role in the outbreak. Table 1-10 provides information concerning incubation periods, clinical syndromes, and criteria for confirming the etiology once an FBDO has been identified. The information on incubation periods and clinical syndromes is provided as a guideline and should not be included in the confirmation criteria. These guidelines may not include all etiologic agents and diagnostic tests. Decisions on additional investigative efforts (case and control finding, laboratory analyses, etc.) and their priority should be guided by the resulting information's value in providing or disproving the current hypotheses.

f. Provide information. Keep everyone with a "need to know" informed of the progress and findings to the investigation. Who "needs to know" varies with the outbreak but may include: appropriate line commanders; the commanding officer, preventive medicine staff and/or laboratory officer of the supporting MTF; appropriate public affairs officers (PAO); and local health department representatives. If the situation requires informing the public, work with a PAO or local risk communication personnel to provide objective factual information about the outbreak and clear recommendations on actions that the public should take. File a Medical Event Report per BUMEDINST 6220.12 series.

g. Expand the investigation. Often the initial investigation will identify a pathogen. The investigator may have a plausible hypothesis for the vehicle and its method of contamination. The food service manager may have implemented the recommendations to prevent further illness. It is often tempting to conclude the investigation at this point. Such superficial investigations may underestimate the true number of cases, miss the true method of contamination, and fail to alter potentially hazardous food handling procedures. At this point it is important to find and interview additional persons (both ill and well) at risk. Complete food history questionnaires on both ill and well and obtain clinical specimens from ill persons. It may be appropriate to seek assistance, either consultative support or on-site support, from the nearest NAVENPVNTMEDU.

h. Investigate food handling procedures. The investigation must inquire into the source and method of preparation of each item of food or drink served at a suspected meal. Although a standard inspection may be conducted, an investigation focusing on high risk foods and their handling may be more productive. A flowchart documenting the individual steps from delivery, through preparation, to service of highly suspect items may be helpful. Talk with the person in charge, shift supervisors and the watch captains. Collect menus, recipes, and lists of personnel with their assignments. Separately interview food service personnel involved in handling the suspect item(s). Food service personnel should have a physical examination and specimens should be collected (e.g., stool sample or rectal swab), if appropriate.

i. Analyze the data. The organization and summary of data collected from ill and well persons who ate or drank the suspect item or meal help to classify the illness, identify involved groups, and identify a possible vehicle for transmission.

(1) Plot an epidemic curve. Prepare a graph of the distribution of cases (ill persons) by the time of onset of their symptoms (Figure 1-11.) The period of time covered by the outbreak determines the unit of time used on the graph. For staphylococcal food poisoning, use a scale of hours; for a possible salmonella outbreak, use 6 or 12-hour periods; and for hepatitis A, use days. A common source outbreak graph will show a sharp peak when many cases developed their symptoms followed by a gradual tapering off of cases. Figure 1-1 displays data for a common source outbreak of staphylococcal food poisoning. An outbreak with person to person spread (e.g., shigellosis) will show a slower rise to a less distinct peak or may have no dominant peak.

(2) Identify the common symptoms and signs. Symptoms are felt by a person, while signs are noted by an observer. Use data

from ill persons to prepare a chart showing the percentage of cases with specific symptoms (e.g., nausea or headache) and signs (e.g., fever). The predominate signs and symptoms, whether enteric, neurologic or generalized, help limit the list of possible agents that caused the outbreak.

(3) Calculate incubation periods and determine a median incubation period.

(a) The interval between ingestion of the suspect food and the appearance of an initial symptom or sign of illness is the incubation period. Knowledge of the median incubation period further limits the list of possible causative agents for the outbreak. The median is used because it is not affected by exceptionally long or short incubation periods, as is the mean (average) value.

(b) Calculate the interval for each case, and determine the range of incubation periods by identifying the shortest and longest incubation period. Calculate the median incubation period. (Make a list of the individual incubation periods from shortest to longest. The middle value on the list, or the average of the two middle values if there is an even number of cases, is the median incubation period.)

(c) Table 1-12 displays data on symptom onset and incubation period for a common source outbreak of staphylococcal food poisoning. Table 1-12 shows the incubation periods grouped by 2-hour intervals. Both the median incubation period (3.5 hours) and the large number of cases with illness onset between 2 and 4 hours after eating the suspect food are consistent with staphylococcal food poisoning.

(4) Calculate attack rates.

(a) Attack rates, the percentage of ill persons, may be food or meal specific. For either type of attack rate to be meaningful, the investigator must have food and/or meal histories on both ill and well persons who were at risk of eating the suspect food or meal.

(b) Food specific attack rates help pinpoint a suspect food within a meal, and can support observations and conclusions on food handling that contributed to the outbreak. Meal specific attack rates are appropriate when an investigation has not pinpointed a particular meal; the results may help focus further investigative efforts.

(c) To calculate the rates, divide the number of persons who become ill after they ate a particular food or meal by the total number of persons (both cases and controls) who ate that food or meal, and multiply the results by 100. Do the same for the persons who did not eat that particular food or meal. A highly suspect food or meal will have the highest attack rate for those who ate that food or meal, and the lowest attack rate for those who did not eat that food or meal. The difference between the two rates provides an easy method of comparing different meals or different foods.

(d) When investigating a disease with a long incubation period (e.g., hepatitis A), attack rates based on food preference rather than actual consumption may be necessary. A person's food preferences may be determined by asking if, when given a choice, they always or usually eat certain foods (e.g., raw oysters), purchase particular brand items, or dine at a particular restaurant.

(e) Table 1-14 is an example of a food specific attack rate analysis. Persons who reported they ate potato salad have a high rate of illness. The difference in attack rates is greatest for potato salad, which implicates this food item as the vehicle in the outbreak. Note that not all people who reported eating potato salad became ill. Variations in illness may be explained by one or more of the following conditions: recall bias (some people may not accurately remember events as they occurred), dose or inoculum (the number of organisms or amount of toxin ingested), and susceptibility. Some people may not accurately remember what they ate or did not eat.

j. Use investigative data for prevention. Preventing further illnesses is the primary purpose of a food borne illness investigation. During or immediately after completing the investigation, recommend and/or implement measures to prevent further illness.

k. Submit a Medical Event Report. Any food borne disease outbreak must be reported following the guidelines of BUMEDINST 6220.12 series on Medical Event Reports.

Figure 1-9. Case History Questionnaire

Name:		Grade/ Rate:		SSN:	Duty Station:
Work Telephone:	Home Telephone:	Age:	Sex:	Home Address:	

Other Information:

Signs and Symptoms (check appropriate items)

☐ Burning Sensations (mouth) ☐ Metallic Taste ☐ Excessive Salivation ☐ Nausea ☐ Vomiting ☐ Flushing ☐ Itching ☐ Prostration ☐ Cyanosis	☐ Abdominal Cramps ☐ Diarrhea ☐ Bloody Diarrhea ☐ Mucus Diarrhea ☐ Watery Diarrhea _____ # of Bowel Movements Per Day ☐ Fever _____Temp ☐F ☐ Duration of Fever ☐ Headache ☐ Chills ☐ Myalgia ☐ Edema ☐ Jaundice ☐ Anorexia ☐ Rash ☐ Weakness ☐ Dehydration	☐ Numbness ☐ Dizziness ☐ Double Vision ☐ Blurred Vision ☐ Dysphagia ☐ Dysphoria ☐ Delirium ☐ Paralysis ☐ Coma

Other Symptoms:

Time and Date of Onset:	Duration:	Severity: mild - severe 1 2 3 4	Treatment:

Physician Consulted: Telephone:	Address:
Hospital: Telephone:	Address:

Specimens Obtained:	Time/Date of Collection:	Laboratory Results:

Remarks and Diagnosis:

☐ Ill ☐ Well

Figure 1-9. Case History Questionnaire (cont.)

Food History for Previous 72 Hours or Other Specified Time					
Day of Illness					
Breakfast		Lunch		Supper	
Hour:	Place:	Hour:	Place:	Hour:	Place:
Food Items:		Food Items:		Food Items:	
Day Before Illness					
Breakfast		Lunch		Supper	
Hour:	Place:	Hour:	Place:	Hour:	Place:
Food Items:		Food Items:		Food Items:	
Two Days Before Illness					
Breakfast		Lunch		Supper	
Hour:	Place:	Hour:	Place:	Hour:	Place:
Food Items:		Food Items:		Food Items:	
Snacks (items, time and place)					
History of Eating Suspect Food					
Food:		Source:		Address:	
Common Event and Names and Addresses of others at event:					
Recent Travel (locations):					
Contacts With Known Cases Before Illness:					
Contact After Illness:					
Other Conditions (Housing Condition, Crowding, Water/Milk Supply, Excreta Disposal, Shellfish):					
Additional Remarks:					
Investigator:				Date:	

Table 1-10. Guidelines for confirmation of food borne disease outbreaks

Etiologic agent	Incubation period	Clinical syndrome	Confirmation
Bacterial			
1. *Bacillus cereus*			
a. Vomiting toxin	1-6 hrs	Vomiting, some patients with diarrhea; fever uncommon	Isolation of organism from stool of two or more ill persons and not from stool of controls OR Isolation of $\geq 10^5$ organisms/g from epidemiologically implicated food, provided specimen properly handled
b. Diarrheal toxin	6-24 hrs	Diarrhea, abdominal cramps, and vomiting in some patients; fever uncommon	Isolation of organism from stool of two or more ill persons and not from stool of controls OR Isolation of $\geq 10^5$ organisms/g from epidemiologically implicated food, provided specimen properly handled
2. *Brucella*	Several days to several mos, usually >30 days	Weakness, fever, headache, sweats, chills, arthralgia, weight loss, splenomegaly	Two or more ill persons and isolation of organism in culture of blood or bone marrow, greater than fourfold increase in standard agglutination titer (SAT) over several wks, or single SAT titer $\geq$1:160 in person who has compatible clinical symptoms and history of exposure
3. *Campylobacter*	2-10 days, usually 2-5 days	Diarrhea (often bloody), abdominal pain, fever	Isolation of organism from clinical specimens from two or more ill persons OR Isolation of organism from epidemiologically implicated food
4. *Clostridium botulinum*	2 hrs-8 days, usually 12-48 hrs	Illness of variable severity; common symptoms are diplopia, blurred vision, and bulbar weakness; paralysis, which is usually descending and bilateral, may progress rapidly	Detection of botulinal toxin in serum, stool, gastric contents, or implicated food OR Isolation of organism from stool or intestine

Etiologic agent	Incubation period	Clinical syndrome	Confirmation
Bacterial (cont'd)			
5. *Clostridium perfringens*	6-24 hrs	Diarrhea, abdominal cramps, vomiting and fever are uncommon	Isolation of $\geq 10^6$ organisms/g in stool of two or more ill persons, provided specimen properly handled OR Demonstration of enterotoxin in the stool of two or more ill persons OR Isolation of $\geq 10^5$ organisms/g from epidemiologically implicated food, provided specimen properly handled
6. *Escherichia coli* *a. Entero-hemorrhagic (E. coli 0157:H7 and others)*	1-10 days, usually 3-4 days	Diarrhea (often bloody), abdominal cramps (often severe), little or no fever	Isolation of *E. coli* 0157:H7 or other Shiga-like toxin-producing *E. coli* from clinical specimen of two or more ill persons OR Isolation of *E. coli* 0157 or other Shiga-like toxin-producing *E. coli* from epidemiologically implicated food
b. Enterotoxigenic (ETEC)	6-48 hrs	Diarrhea, abdominal cramps, nausea; vomiting and fever are less common	Isolation of organism of same serotype, which are demonstrated to produce heat stable (ST) and/or heat labile (LT) enterotoxin, from stool or two or more ill persons
c. Enteropatho-genic (EPEC)	Variable	Diarrhea, fever, abdominal cramps	Isolation of same enteropathogenic serotype from stool of two or more ill persons
d. Enteroinvasive (EIEC)	Variable	Diarrhea (may be bloody), fever, abdominal cramps	Isolation of same enteroinvasive serotype from stool of two or more ill persons
7. *Listeria monocytogenes* a. Invasive disease	2-6 wks	Meningitis, neonatal sepsis, fever	Isolation of organism from normally sterile site
b. Diarrheal disease	Unknown	Diarrhea, abdominal cramps, fever	Isolation of organism of same serotype from stool of two or more ill persons exposed to food that is epidemiologically implicated or from which organism of same serotype has been isolated

Etiologic agent	Incubation period	Clinical syndrome	Confirmation
Bacterial (cont'd)			
8. Nontyphoidal *Salmonella*	6 hrs-10 days, usually 6-48 hrs	Diarrhea, often with fever and abdominal cramps	Isolation of organism of same serotype from clinical specimens from two or more ill persons OR Isolation of organism from epidemiologically implicated food
9. *Salmonella typhi*	3-60 days, usually 7-14 days	Fever, anorexia, malaise, headache, and myalgia; sometimes diarrhea or constipation	Isolation of organism from clinical specimens of two or more ill persons OR Isolation of organism from epidemiologically implicated food
10. *Shigella*	12 hrs-6 days, usually 2-4 days	Diarrhea (often bloody), frequently accompanied by fever and abdominal cramps	Isolation of organism of same serotype from clinical specimens from two or more ill persons OR Isolation of organism from epidemiologically implicated food
11. *Staphylococcus aureus*	30 min-8 hrs, usually 2-4 hrs	Vomiting, diarrhea	Isolation of organism of same phage type from stool or vomits or two or more ill persons OR Detection of enterotoxin in epidemiologically implicated food OR Isolation of $\geq 10^5$ organisms/g from epidemiologically implicated food, provided specimen properly handled
12. *Streptococcus* Group A	1-4 days	Fever, pharyngitis, scarlet fever, upper respiratory infection	Isolation of organism of same M- or T-type from throats of two or more ill persons OR Isolation of organism of same M- or T-type from epidemiologically implicated food

Etiologic agent	Incubation period	Clinical syndrome	Confirmation
Bacterial (cont'd)			
13. *Vibrio cholerae*			
a. 01 or 0139	1-5 days	Watery diarrhea, often accompanied by vomiting	Isolation of toxigenic organism from stool or vomitus or two or more ill persons OR Significant rise in vibriocidal, bacterial-agglutinating, or antitoxin antibodies in acute and early convalescent phase sera among persons not recently immunized OR Isolation of toxigenic organism from epidemio-ogically implicated food
b. non-01 and non-0139	1-5 days	Watery diarrhea	Isolation of organism of same serotype from stool of two or more ill persons
14. *Vibrio parahaemolyticus*	4-30 hrs	Diarrhea	Isolation of kanagawa positive organism from stool of two or more ill persons OR Isolation of $\geq 10^5$ kanagawa positive organisms/g from epidemiologically implicated food, provided specimen properly handled
15. *Yersinia enterocolitica*	1-10 days, usually 4-6 days	Diarrhea, abdominal pain (often severe)	Isolation of organism from clinical specimen of two or more ill persons OR Isolation of pathogenic strain or organism from epidemiologically implicated food

Etiologic Agent	Incubation period	Clinical syndrome	Confirmation
Chemical			
1. Marine toxins			
a. Puffer fish, tetrodotoxin	10 min-3 hrs, usually 10-45 min.	Parasthesia of lips, tongue, face, or extremities, often following numbness; loss of proprioception or "floating" sensations	Demonstration of tetrodotoxin in epidemiologically implicated fish OR Clinical syndrome among persons who have eaten puffer fish
b. Paralytic or neurotoxic shellfish poison	30 min-3 hrs	Parasthesia or lips, mouth or face, and extremities; intestinal symptoms or weakness, including respiratory difficulty	Detection of toxin in epidemiologically implicated food OR Detection of large numbers of shellfish poisoning associated species of dinoflagellates in water from which epidemiologically implicated mollusks are gathered
c. Scombroid toxin (histamine)	1 min-3 hrs, usually <1 hr	Flushing, dizziness burning of mouth and throat, headache, gastrointestinal symptoms, urticaria, and generalized pruritus	Demonstration of histamine in epidemiologically implicated food OR Clinical syndrome among persons who have eaten type of fish previously associated with histamine fish poisoning (e.g., mahi-mahi or fish of order Scomboidei)
d. Ciguatoxin	1-48 hours, usually 2-8 hrs	Usually gastrointestinal symptoms followed by neurologic symptoms (including parasthesia of lips, tongue, throat, or extremities) and reversal of hot and cold sensation	Demonstration of ciguatoxin in epidemiologically implicated fish OR Clinical syndrome among persons who have eaten a type of fish previously associated with ciguatera fish poisoning (e.g., snapper, grouper, or barracuda)

Etiologic Agent	Incubation period	Clinical syndrome	Confirmation
Chemical (cont'd)			
2. Heavy metals a. Antimony b. Cadmium c. Copper d. Iron e. Tin f. Zinc	5 min-8 hrs, usually <1 hr	Vomiting, often metallic taste	Demonstration of high concentration of metal in epidemiologically implicated food
3. Monosodium glutamate (MSG)	3 mins-2 hrs, usually <1 hr	Burning sensation in chest, neck, abdomen, or extremities; sensation of lightness and pressure over face or heavy feeling in chest	Clinical syndrome among persons who have eaten food containing MSG (i.e., usually ≥1.5 g MSG)
4. Mushroom toxins			
a. Shorter acting toxins: *Muscimol* *Muscarine*	≤2 hrs	Usually vomiting and diarrhea, other symptoms differ with toxin: Confusion, visual disturbance Salivation, diaphoresis Hallucinations	Clinical syndrome among persons who have eaten mushroom identified as toxic type OR Demonstration of toxin in epidemiologically implicated mushroom or mushroom containing food
Psilocybin *Coprinus artre-mentaria* *Ibotenic acid*		Disulfiram like reaction Confusion, visual disturbance	
b. Longer acting toxin (e.g., *Amanita* spp.)	6-24 hrs	Diarrhea and abdominal cramps for 24 hrs followed by hepatic and renal failure	Clinical syndrome among persons who have eaten mushroom identified as toxic type OR Demonstration of toxin in epidemiologically implicated mushroom or mushroom containing food

Etiologic Agent	Incubation period	Clinical syndrome	Confirmation
Parasitic			
1. *Cryptosporidium parvum*	2-28 days, median: 7 days	Diarrhea, nausea, vomiting, fever	Demonstration of organism or antigen in stool or in small bowel biopsy of two or more ill persons OR Demonstration of organism in epidemiologically implicated food
2. *Cyclospora cayetanensus*	1-11 days, median: 7 days	Fatigue, protracted diarrhea, often relapsing	Demonstration of organism in stool of two or more ill persons
3. *Giardia lamblia*	3-25 days, median: 7 days	Diarrhea, gas, cramps, nausea, fatigue	Two or more ill persons and detection of antigen in stool; or demonstration of organism in stool, duodenal contents, or small bowel biopsy specimen
4. *Trichinella* spp.	1-2 days for intestinal phase; 2-4 wks for systemic phase	Fever, myalgia, periorbital edema, high eosinophil count	Two or more ill persons and positive serologic test or demonstration of larvae in muscle biopsy OR Demonstration of larvae in epidemiologically implicated meat

Etiologic Agent	Incubation period	Clinical syndrome	Confirmation
Viral			
1. Hepatitis A	15-50 days, median: 28 days	Jaundice, dark urine, fatigue, anorexia, nausea	Detection of IgM anti-hepatitis A virus in serum from two or more persons who consumed epidemiologically implicated food
2. Norwalk family of viruses, small round structured viruses (SRSV)	15-77 hrs, usually 24-48 hrs	Vomiting, cramps, diarrhea, headache	More than fourfold rise in antibody titer to Norwalk virus or Norwalk like virus in acute and convalescent sera in most serum pairs OR Visualization of small, round-structured viruses that react with patient's convalescent sera but not acute sera - by immune electron microscopy. Assays based on molecular diagnostic (e.g., polymerase chain reaction [PCR], probes, or assays for antigen and antibodies from expressed antigen) are available in reference laboratories.
3. Astrovirus, calicivirus, others	15-77 hrs, usually 24-48 hrs	Vomiting, cramps, diarrhea, headache	Visualization of small, round structured viruses that react with patient's convalescent sera but not acute sera - by immune electron microscopy. Assays based on molecular diagnostics (e.g., PCR, probes, or assays for antigen and antibodies from expressed antigen) are available in reference laboratories.

Figure 1-11. Example of an epidemic histogram of cases by time of symptom onset

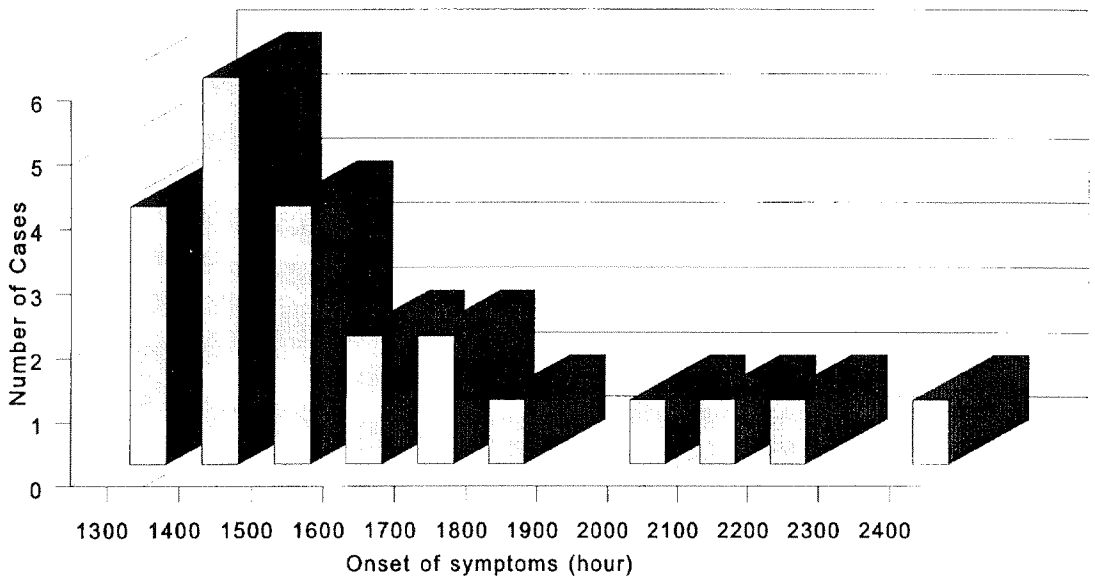

Table 1-12. Example of incubation periods, onset, and meal times by patient for a staphylococcal food poisoning outbreak

Patient (number)	Ate Meal (time)	Became Ill (time)	Incubation Period (hours)
8	1300	1345	0.75
20	1130	1300	1.50
2	1130	1330	2.00
12	1130	1345	2.25
21	1200	1415	2.25
13	1130	1415	2.75
9	1130	1430	3.00
10	1145	1445	3.00
7	1130	1430	3.00
4	1130	1445	3.25
5	1130	1500	3.50
14	1200	1530	3.50 Median
16	1130	1515	3.75
22	1230	1615	3.75
23	1200	1600	4.00
3	1130	1545	4.25
11	1230	1715	4.75
15	1200	1730	5.50
18	1300	1845	5.75
1	1200	2000	8.00
6	1300	2115	8.25
17	1130	2230	11.00
19	1130	0030	13.00
Total (23 Cases)			102.75

Incubation period:
Range: 0.75 hours (shortest)
To 13.00 hours (longest)
Median: 3.5 hours
Mean: 4.5 hours (102.75 ÷ 23)

Table 1-13. Example of incubation periods grouped by two hour intervals for a staphylococcal food poisoning outbreak

Incubation Period	Number of Cases
First 2 Hours	2
2nd-3rd Hours	12
4th-5th Hours	5
6th-7th Hours	0
8th-9th Hours	2
10th-11th Hours	1
12th-13th Hours	1

Table 1-14. Example of food specific attack rates for an outbreak investigation

	Persons Exposed (ate food)				Persons Not Exposed (did not eat food)			
Food Item	Total	# Ill	% Ill		Total	# Ill	% Ill	Difference in % Ill
Potato salad	246	192	78.0		58	4	6.9	71.1
Tomatoes	253	127	50.2		51	19	37.3	12.9
Ice cream	201	98	48.8		103	48	46.6	2.2
Beans	258	129	50.0		46	17	37.0	13.0
Ham	230	108	47.0		74	38	51.4	-4.4
Crab Cakes	235	124	52.8		69	22	31.9	20.9

APPENDIX B. REFERENCES

B-1 FOOD
B-2 FOOD SERVICE EQUIPMENT
B-3 WARE WASHING MACHINES
B-4 MILK
B-5 ICE
B-6 FIELD SANITATION
B-7 CLUBS, MESSES, EXCHANGES, AND COMMISSARIES
B-8 FOOD BORNE ILLNESSESS
B-9 PEST CONTROL

The following is a list of publications referenced and used in the preparation of this chapter:

B-1 FOOD

a. NAVSUP PUB 7, Armed Forces Recipe Service

b. NAVSUP PUB 421, Food Service Operations

c. NAVSUP PUB 486, Food Service Management

d. Marine Corps Order P10110.14 series, Food Service and Subsistence Manual

e. NAVMED P-117, Manual of the Medical Department, chapter 22

f. U. S. Navy Regulations 111, Quality and Quantity of Rations

g. NAVSUPINST 4355.2 series, Inspection of Subsistence Supplies and Services

h. NAVSUPINST 4355.6 series, DoD Veterinary/Medical Laboratory Food Safety and Quality Assurance

i. NAVSUPINST 10110.8 series, DoD Hazardous Food and Non-prescription Recall System

j. FDA Food Code

k. Title 21, Code of Federal Regulations (21 CFR), Food and Drugs

l. Title 7, Code of Federal Regulations (7 CFR), Agriculture

B-2 FOOD SERVICE EQUIPMENT

a. National Sanitation Foundation Standards Nos. 1, Soda Fountain and Luncheonette Equipment; 2, Food Service Equipment; 3, Commercial Spray Type Dishwashing Machines; 4, Commercial Cooking and Hot Food Storage Equipment; 5, Hot Water Generating and Heat Recovery Equipment; 6, Dispensing Freezers; 7, Food Service Refrigerators and Storage Freezers; 8 Commercial Powered Food Preparation Equipment; 12, Automatic Ice Making Equipment; 13, Refuse Compactors and Compactor Systems; 18, Manual Food and Equipment Beverage Dispensing Equipment; 20, Commercial Bulk Milk Dispensing Equipment; 21, Thermoplastic Refuse Containers; 25, Vending Machines for Food and Beverages; 26, Pot, Pan and Utensil Washers; 29, Detergent/Chemical Feeders for Commercial Spray Type Dishwashing Machines; 35, Laminated Plastics for Surfacing Food Service Equipment; 36, Dinnerware; 37, Air Curtains for Entranceways in Food Establishments; 51, Plastic Materials and Components Used in Food Equipment; 52, Supplemental Flooring; 59, Food Carts; C-2 Special Equipment and/or Devices

b. NAVSEA S9AA0-AA-SPN-010/GEN-SPEC, General Specifications for Ships of the United States Navy, Section 651, Food Service Spaces

c. NAVSHIPS 0901-LP-340-0001, Naval Ships Technical Manual, chapter 9340, Commissary Equipment

d. Department of Defense Construction Criteria Manual, 4270.1-M

B-3 WARE WASHING MACHINES

a. MIL-HDBK-740, Military Standardization Handbook Dishwashing Operations

b. NAVSHIPS 0901-LP-340-0001, Naval Ships Technical Manual, Chapter 9340, Commissary Equipment

B-4 MILK

a. MIL-STD-175, Equipment and Methods for Handling of Milk Products in Bulk Milk Dispensing Operations

b. NAVSUPINST 4355.6 series, DoD Veterinary/Medical Laboratory Food Safety and Quality Assurance

c. USPH Publication NQ 229, Grade "A" Pasteurized Milk Ordinance, U. S. Department of Health and Human Services

d. Dairy Plants Surveyed and Approved for USDA Grading Service, (Published Quarterly), USDA Agriculture Marketing Service (AMS), Dairy Division Dairy Grading Section, Washington, DC 20250

e. IMS List-Sanitation Compliance and Enforcement Ratings of Interstate Milk Shippers, (Published Quarterly), Department of Health and Human Services, Public Health Service, Food and Drug Administration, Milk Safety Branch, 200 C Street SW, Washington, DC 20204

f. Standard Methods for the Examination of Dairy Products, American Public Health Association 1010 Fifteenth Street NW, Washington, DC 20005

B-5 ICE

a. Public Health Service Publication No. 1183, A Sanitary Standard for Manufactured Ice

b. Sanitary Standards for Packaged Ice, The Sanitation Committee, Packaged Ice Association, 1100 Raleigh, NC 27601; Title 21, Code of Federal Regulations, parts 103,110, and 129

B-6 FIELD SANITATION

a. NAVMED P-010-9, Preventive Medicine for Ground Forces

b. FM 21-10/AFM 161-10, Joint Army and Air Force Publication, Field Hygiene and Sanitation

c. MIL-HDBK-740, Military Standardization Handbook Dishwashing Operations

B-7 CLUBS, MESSES, EXCHANGES, AND COMMISSARIES

a. BUPERSINST 1710.13A, Operation of Navy Messes Ashore and Package Stores

b. NAVSUP PUB 486, Volume 11 Food Service Management, Officers' Quarters and Messes and Chief Petty Officers' Messes Afloat

c. Marine Corps Order P1700.27, Marine Corps Policy Manual

d. FDA Food Code

e. NAVRES PUB-145 Vol 1-4, Navy Exchange Manual

f. MIL-STD-903, Sanitary Standards for Commissaries

B-8 FOOD BORNE ILLNESSESS

a. BUMEDINST 6220.12A, Medical Event Reports

b. Control of Communicable Diseases Manual, Sixteenth Edition, 1995; American Public Health Association

c. Procedures to Investigate Food Borne Illness, Fourth Edition, International Association of Milk, Food and Environmental Sanitarians, Inc.

B-9 PEST CONTROL

a. NAVMED P-5010, Chapter 8, Navy Entomology and Pest Control

b. OPNAVINST 6250.4A, Pest Management Programs

c. BUMEDINST 6250.14, Procurement of Deratting/Deratting Exemption Certificates

d. NAVSUP PUB-486, VOL I, Food Service Management

e. Navy Shipboard Pest Control Manual

f. Military Standard 904A (MIL-STD-904A), Evaluation and Prevention of Pest Infestation in Subsistence

APPENDIX C. MODEL FORMS

C-1 INTRODUCTION
C-2 FOOD ESTABLISHMENT INSPECTION REPORT
C-3 FOOD ESTABLISHMENT INSPECTION GUIDE
C-4 MEDICAL SCREENING FORM
C-5 REQUEST FORM FOR PERMIT TO OPERATE A TEMPORARY FOOD ESTABLISHMENT
C-6 HAACP INSPECTION DATA FORM

C-1 INTRODUCTION

This section provides the forms necessary to carry out sanitation inspections, medical screening, and temporary food establishment permitting procedures prescribed in this chapter. A model HACCP Inspection Data form has also been included. All forms are intended to be reproduced locally.

C-2 FOOD ESTABLISHMENT INSPECTION REPORT

C-3 FOOD ESTABLISHMENT INSPECTION GUIDE

C-4 MEDICAL SCREENING FORM

C-5 REQUEST FORM FOR PERMIT TO OPERATE A TEMPORARY FOOD ESTABLISHMENT

C-6 HAACP INSPECTION DATA FORM

FOOD ESTABLISHMENT INSPECTION REPORT

Violations cited in this report shall be corrected within the time frames specified below, but within a period not to exceed 10 calendar days for critical items or 90 days for noncritical items.

FOOD ESTABLISHEMENT RISK CATEGORY TYPES (Check one)
WITH MAXIMUM NUMBER OF CRITICAL VIOLATIONS

☐ **Type 1** **Max. Critical:** 2
☐ **Type 2** **Max. Critical:** 4
☐ **Type 3** **Max. Critical:** 7
☐ **Type 4** **Max. Critical:** 7

TOTAL VIOLATIONS: CRITICAL _____ NONCRITICAL_____

ESTABLISHMENT:		**DATE:**	**TIME:**
ADDRESS:	**CITY:**	**STATE:**	**ZIP:**
PERSON IN CHARGE / TITLE:		**TELEPHONE:**	
INSPECTOR / TITLE:			
INSPECTION TYPE: ☐ **ROUTINE** ☐ **FOLLOW-UP** ☐ **COMPLAINT** ☐ **OTHER:**			

Critical (X)	Repeat (X)	Code Reference	Violation Description / Remarks / Corrections

NAVMED 6240/1 (Rev. 12/97)

Food Establishment Inspection Report Page __ of ___

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FOOD ESTABLISHMENT INSPECTION REPORT
(Continuation)

ESTABLISHMENT			DATE: TIME:
		Code Reference	Violation Description / Remarks / Corrections

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Food Establishment Inspection Report Page __ of ____

FOOD SERVICE INSPECTION GUIDE
List of Frequent Discrepancies
(Critical Items marked with *)

MANAGEMENT AND PERSONNEL

2-1.1	Person in Charge designated/on premises.*
2-1.2.1.A	Person in Charge able to demonstrate knowledge.*
2-1.2.2	Food service personnel training current and documented in training records.*
2-2.5.1	Food service personnel physicals current.*
2-2.5.2	Personnel performing food preparation free of communicable disease.*
2-3.1	Hands washed, good hygienic practices (observed).*
2-4.1.1	Proper hygienic practices, eating/drinking/smoking prohibited (evidence).*
5-7.2(B)	Hand washing facilities provided with adequate soap, hot/cold running water, hand drying single use towels/dryer*
2-3.4, 2-4.2	Clean clothes, hair restraints.
2-3.1.4(B)	Hand washing signs posted.
2-3.5	Clothing and other personal items absent from food service areas.

FOOD AND MILK SOURCES

3-1.2.1(B)(1)	Procured from an approved source.*
3-1.2.1(B)(3)	Wholesome and in sound condition.*

TEMPERATURE CONTROL OF POTENTIALLY HAZARDOUS FOODS

3-4.2	Cold food at proper temperatures during storage, display, service, transport, and cold holding.*
3-4.3	Hot foods at proper temperatures.*
3-5.2, 3-5.6	Foods properly cooked and/or reheated.*
3-5.6	Foods properly cooled.*
3-4.2.A(3)	Refrigeration Units maintain proper temperatures.*
3-4.6	Protected from decayed foods, contamination, and spoilage.*
3-5.7, 3-4.2	Frozen foods stored properly 0°F. or below, correctly thawed and not refrozen.*
3-4.2(A)	Thermometers provided and conspicuously placed.

FOOD PROTECTION

3-2	Gross contamination, equipment, personnel, storage*
3-2	Potential for cross contamination; storage practices; damaged foods segregated.*
3-5.6.2	Leftover foods correctly dated, stored, and served; no unauthorized, or frozen leftovers present.*
	Advanced Prepared potentially hazardous foods which are not served immediately:
3-5.3	Held at or above 140°F.*
3-5.3, 3-5.6	Kept at or below 41°F.*
3-5.3, 3-5.6	Not held more than 4 hours between 41°F and 140°F.*
3-5.6(E)	Labeled with date and time of preparation.*
3-5.6, 3-4	Food and corresponding temperatures within standards.*
3-2	Food protection during storage, preparation, display, service, transportation adequate.
3-2.1	Foods handled with minimum manual contact.
3-5.11(E), 4-7.9,3-5.12	In use food dispensing utensils properly stored.

FOOD EQUIPMENT AND UTENSILS

4-4.4	Food contact surfaces properly cleaned and sanitized.*
4-4.4	Ware washing sanitizing temperature ____ °F.*
4-4.1	Ware washing sanitizing concentration ____ ppm.*
4-1	Food and nonfood contact surfaces designed, constructed, maintained, installed and located.
3-4.2(A)	Accurate easily readable thermometers conspicuously located in all refrigerated spaces.
3-4.1(H)	Only food items stored in food storage spaces.
4-1	Food service equipment and utensils meet standards and are properly installed.

FOOD EQUIPMENT AND UTENSILS (Continued)

4-2.1	Equipment and utensils properly air dried, handled and stored after being washed.
4-7, 5-5.4	No unauthorized supplies present or in use such as dishcloths, dish mops, soap, or steel wool.
3-4.2, 4-1	Refrigerated storage spaces are properly constructed, installed, and cleaned.
3-4.2	Refrigerated storage spaces free of excess frost/ice accumulation.
3-4.2	Refrigerated storage spaces maintained within proper temperature range.
4-7	Food service equipment and utensils properly maintained, serviced, cleansed, and sanitized.
4-2.19.1	Manual ware washing accomplished in three compartment sinks, equipped with sanitizing capability.
4-2	Automatic ware washing machines meet NSF standards or equivalent, properly cleaned, maintained, and operated with approved ware washing and sanitizing agents.

FACILITY STRUCTURE AND HOUSEKEEPING

5-10.1	Toxic items properly stored.*
5-10.2	Toxic items labeled and used properly.*
5-3.2	Rooms and equipment vented as required.
5-5.4	Cleaning gear/supplies properly stored.
5-2, 5-5	Floors, walls, ceilings, and attached equipment properly constructed, cleaned, drained, covered.
5-3.1	Lighting provided as required, fixtures shielded

SEWAGE AND PLUMBING

5-6.1	Water source safe, hot and cold under pressure.*
5-6.3, 5-6.4	Sewage and wastewater disposed properly; cross connections, back siphonage, backflow prevented.*
5-7.1, 5-7.2	Toilet, hand washing sinks, and locker rooms located and equipped properly.*
5-6.4	Adequate air gaps provided on required equipment.
5-6.1	Plumbing installed and maintained.

GARBAGE AND SOLID WASTE DISPOSAL

5-8.1	Containers covered, adequate number, insect and rodent proof, emptied at proper intervals, clean.
5-8.2	Outside storage area clean, enclosure properly constructed.

INSECT AND RODENT CONTROL

2-4.3, 5-9.2	Presence of insects/rodents; animals prohibited.*
5-9.2	Outer openings protected from insects, rodent proof.*
5-9.3	Pest control programs being carried out by certified pest control personnel.*

SAFETY

6-5	Facility free of recognized hazards that are causing or likely to cause death, or serious harm to employees and/or patrons.*

MAINTENANCE OF SPACES AND/OR GROUNDS

2-3.5, 5-5	Premises maintained free of litter/unnecessary articles

HEALTH RECORD	MEDICAL SCREENING FORM		
DATE	SYMPTOMS, DIAGNOSIS, TREATMENT, TREATING ORGANIZATION (*Sign each entry*)		
	HEALTH CARD PHYSICAL EXAMINATION (MEDICAL SCREENING)		
	TODAY:		
	1. Are you suffering from any of the following:		
	a) Diarrhea?	YES	NO
	b) Fever?	YES	NO
	c) Vomiting?	YES	NO
	d) Jaundice?	YES	NO
	e) Sore throat with fever?	YES	NO
	2. Lesions containing pus on the hand, wrist or an exposed body part?		
	(such as boils and infected wounds, however small)		
	PAST:		
	1. Have you ever been diagnosed as being ill with typhoid fever (*Salmonella typhi*), shigellosis (*Shigella spp.*),		
	Escherichia coli 0157:H7 infection (*E. coli* 0157:H7), or hepatitis A (hepatitis A virus)?	YES	NO
	If you have, what was the date of the diagnosis?		
	HIGH RISK CONDITIONS:		
	1. Have you been exposed to or suspected of causing a confirmed outbreak of typhoid fever, shigellosis,		
	E. coli 0157:H7 infection, or hepatitis A?	YES	NO
	2. Do you live in the same household as a person diagnosed with typhoid fever, shigellosis, hepatitis A, or		
	illness due to *E. coli* 0157:H7?	YES	NO
	3. Do you have a household member attending or working in a setting where there is a confirmed		
	outbreak of typhoid fever, shigellosis, *E. coli* 0157:H7 infection, or hepatitis A?	YES	NO
	4. Have you traveled outside the United States within the last 50 days?	YES	NO
	EXAM COMMENTS:	☐ **Qualified**	☐ **Not Qualified**
	Patient Signature	Health Care Provider Signature	

PATIENT'S IDENTIFICATION (USE THIS SPACE FOR MECHANICAL IMPRINT)

RECORDS MAINTAINED AT		
PATIENT'S NAME (*Last, First, Middle initial*)		SEX
RELATIONSHIP TO SPONSOR	STATUS	RANK/ GRADE
SPONSOR'S NAME	ORGANIZATION	
DEPART/SERVICE	SSN/IDENTIFICATION NO.	DATE OF BIRTH

CHRONOLOGICAL RECORD OF MEDICAL CARE AUTOMATED STANDARD FORM 600 (Rev: 12/97)

Food Facility
Special Event Application

To Obtain a Permit to Operate a Food Concession or, Operate a Temporary Food Establishment

Complete this application and submit to the Preventive Medicine Authority at least 30 days prior to the start of the event.

1. Event: _____
2. Location: _____
3. Dates: (include set up) event: _____ set up _____
4. Name(s) of Sponsoring Organization and Telephone numbers.

   _____

   _____

5. POC Name: _____ Telephone # _____

   _____ _____

6. List all foods to be served: include where food will be prepared, who will prepare the items:

Food	Prepared by/where temperature holding method/equipment
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

(potentially hazardous food must be kept hot, 140□F or cold, below 41□F.)

7. If potentially hazardous food is transported to the event, what is the length of time in transport? _____ How will the food be transported? _____ How will the food be kept hot or cold? _____

   _____

8. Food Source. _____

   _____

9. Hand washing facilities, including location in relation to food service and preparation: _____

   _____

Section below to be completed by the PMA

☐ Approved ☐ Disapproved Signature: _____ Date: _____

Reason for Disapproval: _____

_____

Special restrictions or requirements: _____

_____

HAACP INSPECTION DATA FORM

EST. NAME: INSPECTOR:

DATE: TIME IN: :AM/PM TIME OUT: :AM/PM

Record all observations below - transfer violations to Inspection Report

FOOD TEMPERATURES/TIMES/OTHER CRITICAL LIMITS
Use Additional Forms If Necessary

FOOD STEP	1.	CRITICAL LIMIT	2.	CRITICAL LIMIT	3.	CRITICAL LIMIT	4.	CRITICAL LIMIT
A. SOURCE								
B. STORAGE								
C. PREP BEFORE COOK								
D. COOK								
E. PREP AFTER COOK								
F. HOT/COLD HOLD								
G. DISPLAY/ SERVICE								
H. COOL								
I. REHEAT								

OTHER FOOD TEMPERATURES OBSERVED Use steps from above for location

FOOD	**TEMP □C/□F**	**STEP**	**FOOD**	**TEMP □C/□F**	**STEP**	**FOOD**	**TEMP □C/□F**	**STEP**

HACCP Inspection Data Page 1 of 2

MANAGEMENT/PERSONNEL OBSERVATIONS	
OTHER FOOD OBSERVATIONS	
EQUIPMENT, UTENSILS, AND LINEN OBSERVATIONS	
WATER, PLUMBING, AND WASTE OBSERVATIONS	
PHYSICAL FACILITIES	
POISONOUS OR TOXIC MATERIALS OBSERVATIONS	