



**REPUBLIC OF
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**OFFICE OF THE
MARITIME ADMINISTRATOR**

Marine Guideline

No. 7-44-1

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**TO: ALL SHIPOWNERS, OPERATORS, MASTERS AND OFFICERS OF
MERCHANT SHIPS, AND RECOGNIZED ORGANIZATIONS**

SUBJECT: Food Handling, Storage and Preparation.

References:

- (a) Maritime Labour Convention, 2006, Title 3.2
- (b) Vessel Sanitation Program Manual, August 2005, U.S Public Health Service, Centers for Disease Control and Prevention, National Center for Environmental Health
- (c) International Health Regulations, Guide to Ship Sanitation, Third Edition, October 2007, World Health Organization
- (d) Safe Food Handling, Basics for Handling Food Safely, Food Safety and Inspection Service, United States Department of Agriculture, www.fsis.usda.gov/factsheets/Basics_for_Handling_Food_Safely

PURPOSE:

This Guideline provides general guidance on food handling, storage and preparation to ensure the health of all persons on board a vessel and addresses the Maritime Labour Convention, 2006 (MLC, 2006) requirements that foods meet minimum standards for quality and be prepared and served in hygienic conditions. This Guideline compliments MN-7-044-1, *Accommodations, Recreational Facilities, Food, Catering and Water*.

It is important to understand that good food hygiene and the prevention of food-borne illness requires more than a well-maintained and clean galley; it requires food to be protected from the risk of harmful contamination by bacteria, chemicals and other foreign bodies from the point of delivery to point of consumption. This concept is embodied in these general guidelines.

APPLICABILITY:

This Guideline applies to all shipowners and operators of Marshall Islands flag vessels, except passenger vessels that comply with the stricter vessel sanitation requirements of the World Health Organization (reference (c) above) and/or United States Centers for Disease Control and Prevention (reference (b) above).

REQUIREMENTS:

1.0 Food Handlers

- 1.1 Seafarers that are required to handle foods (i.e., those in the stewards department) should be free of any communicable disease that can be transmitted by food.
 - .1 Seafarers expected to be handling food diagnosed with, suspected of, or exposed to any communicable disease shall be restricted from working in any food or food-related areas or operations (i.e., working with exposed food, equipment, utensils, table linens, single-service/use articles or warewashing) until they are symptom free for a minimum of 48 hours.
 - .2 Communicable diseases that can be transmitted by food include, but are not limited to: typhoid (*Salmonella typhi* bacteria), shigellosis (*Shigella* spp. bacteria), cholera (*Vibrio* spp. bacteria), intestinal disease (*Escherichia coli* O157:H7 bacteria) and liver disease (hepatitis A virus).
- 1.2 All persons should be restricted, until symptom free for a minimum of 48 hours, from working with exposed food, clean equipment, utensils, table linens, and unwrapped single-service/use articles or warewashing, if they have the following symptoms:
 - .1 boils, open sores, infected wounds, diarrhea, jaundice, fever, vomiting, sore throat with fever or discharges from the ear, eye, nose or mouth. These conditions should be reported to either the vessel's Master or medical staff, as appropriate. No person should be penalized for reporting illness. In addition, any cuts, spots or sores should be completely covered by waterproof dressings.
 - .2 persistent sneezing, coughing, or runny nose that causes discharges from the eyes, nose or mouth.
- 1.3 Food employees must keep their hands, including fingernails, and exposed portions of their arms clean. Hands and exposed portions of arms must be cleaned (soap and water for a minimum of 20 seconds or disinfectant) immediately before engaging in food preparation, including working with exposed food, clean equipment and utensils and unwrapped single-service/use articles; and
 - .1 after touching bare human body parts other than clean hands and clean, exposed portion of arms;
 - .2 after using the toilet room;
 - .3 after coughing, sneezing, using a handkerchief or disposable tissue, using tobacco, eating or drinking;
 - .4 after handling soiled equipment or utensils;

- .5 during food preparation, as often as necessary to remove soil and contamination and to prevent cross-contamination when changing tasks;
 - .6 when switching between working with raw food and working with ready-to-eat food; and
 - .7 after engaging in other activities that could contaminate the hands.
- 1.4 All persons handling food should wear hair restraints (e.g., nets, beard restraints, hats, etc.) to prevent hair from contacting food, equipment and other items in the food service areas.
- 1.5 All persons handling food should be clean and tidy, wearing suitable protective clothing and footwear. The wearing of jewelry should be limited.

2.0 Food Preparation

2.1 Thawing/Defrosting

- 2.1.1 Never defrost raw meat, poultry or seafood at room temperature. They should only be defrosted in a refrigerator. They should be placed on a drip pan so that they are not resting in the thawed liquid and stored in a covered container, separate from and below other foods in the refrigerator that may be exposed to risk of contamination.
- 2.1.2 For faster thawing, place food in a leak-proof plastic bag. Submerge it in cold tap water. Change the water every 30 minutes. Alternatively, microwave thawing may be used.
- 2.1.3 Meat, poultry and seafood should be thoroughly defrosted before cooking; and cooked immediately after thawing.
- 2.1.4 Never refreeze thawed food.

2.2 Contamination

- 2.2.1 Always segregate raw and cooked foods, keeping raw meat, poultry, seafood and their juices away from other foods during preparation and storage. When marinating raw meat, poultry or seafood, do so in a covered dish in the refrigerator.
- 2.2.2 Use separate cutting boards (color-coded boards help to keep them separate) and utensils for raw animal foods (i.e., meat, poultry, seafood, eggs and foods containing them) and produce or other foods. After cutting raw animal foods, wash cutting board, utensils and countertops with hot, soapy water or disinfectant (e.g., one (1) tablespoon of liquid chlorine bleach per one (1) gallon of water).
- 2.2.3 Keep fruits and vegetables separate from ready-to-eat food until they are washed. Raw fruits and vegetables should 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.

- 2.2.4 Protect condiments from contamination by keeping in dispensers designed to provide protection or by using individual packets.
- 2.2.5 Be aware of the dangers (hives, anaphylactic shock, death) associated with food allergies and how cross-contamination of foods may trigger them.
- 2.2.6 Always use clean dishes when serving to prevent the serving utensil from contacting a soiled dish and subsequently contaminating other dishes.
- 2.2.7 Food handlers should avoid direct contact between hands and food by utilizing suitable utensils (e.g., deli tissue, spatulas, tongs and single-use gloves, etc.).
- 2.2.8 Food handlers should be prohibited from using a utensil more than once to taste food that is to be served.
- 2.2.9 Seawater should never be used in or near food or food preparation areas.
- 2.2.10 Any food suspected of being contaminated by flies, cockroaches, rodents or other pests should be destroyed.

2.3 Temperature Control

- 2.3.1 The danger zone for food contamination is between 4° C (40° F) and 62.8° C (145° F). In general, perishable foods should not be left in this temperature range for longer than absolutely necessary, and in no case should foods be left in this temperature range longer than two (2) hours, or where the temperature is above 32° C (90° F), longer than one (1) hour. Additionally, food should be placed in a suitable, covered container when in this temperature range, unless under preparation or being served.
- 2.3.2 In general:
 - Maintain hot food above 62.8° C (145° F);
 - Keep cold food below 4.4° C (40° F);
 - Keep frozen foods below -12° C (10° F); and
 - Reheat leftovers only one (1) time to a core temperature of 75° C (167° F).
- 2.3.3 Cook raw animal foods (i.e., eggs, fish, meat, poultry, and foods containing them) thoroughly to the following minimum internal temperatures to destroy bacteria:
 - Beef, veal and lamb steaks, roasts and chops: 62.8° C (145° F);
 - Ground beef, veal, lamb and all cuts of pork: 71.1° C (160° F);
 - Ground chicken or ground turkey: 74° C (165° F);
 - Poultry: 77° C (170° F) for breasts; 82° C (180° F) for whole poultry and thighs;
 - Seafood (including shellfish): 63° C (145° F); for ground or flaked fish to 68° C (155° F); and 74° C (165° F) for stuffed fish; and

- Eggs: until egg yolk solidifies (about 70° C (158°F)); or to 71° C (160° F), if used in a recipe with other food items.

Use a probe thermometer to determine temperature and check juices to make certain they run clear.

- 2.3.4 To destroy parasites in raw or partially cooked fish, other than shellfish, freeze throughout to a temperature of -20° C (-4° F), or below, for 168 hours (7 days) in a freezer; or -35° C (-31° F), or below, for 15 hours in a blast freezer. Certain fish in the tuna family may be excluded from this freezing procedure as can fish-related foods (e.g., gravlax, sevicehe, fish carpacciao or sashimi) prepared in food processing plants that are certified parasite free.

2.4 Leftovers/Reheating

- 2.4.1 Cooling food too slowly prior to refrigeration is a main factor in food poisoning. While small amounts of food may cool relatively quickly, the process should be speeded up when this is not the case. Once cold, leftovers should be date-marked, suitably stored in the refrigerator and used within two (2) days. If not used cold, which is preferable, food should be rapidly and thoroughly reheated one (1) time only, as provided in section 2.3.2, above.

3.0 Food Supplies and Storage

- 3.1 Always load ships with the safest food available by selecting food suppliers that can demonstrate adequate controls over their foodstuffs and suitable transport to the vessel. Food should be clean, wholesome, free from spoilage and adulteration, and otherwise safe for human consumption.
- 3.2 Food should not be stored on the floor, including the kitchen, cooling and freezing room floors. Storage of food at least 15 cm (six (6) inches) above deck is recommended.
- 3.3 Maintain refrigerator temperature at 4.4° C (40° F) or below, and freezer temperature at -17.7° C (0° F) or below.
- 3.4 Always stack cooked food and ready to eat food above raw food in order to avoid any liquids from raw foods draining into other foods.
- 3.5 Raw meat, poultry and seafood should be kept in a covered container with a drip pan when refrigerated to avoid cross-contamination caused by liquid draining.
- 3.6 Cut and sliced fruits should be stored in sealed containers and placed in the refrigerator, unless used for immediate consumption. Cut, raw vegetables (e.g., celery or carrot sticks, cut potatoes and tofu) may be immersed in ice or water from potable water sources, but should be stored in the refrigerator until consumption.
- 3.7 Inspect fresh provisions daily. Ripe fruits and vegetables should be used as soon as possible. Milk, cheese and other perishables should be date-checked. Discolored, molded or spoiled products, or those of questionable quality, including those with foul odors, should be disposed of immediately.

- 3.8 Store canned products in a cool, clean and dry place (where possible around 10° C (50° F). Inspect canned products monthly. If they are past the expiration date, dispose of them. Also dispose of any dented, leaking, bulging or rusted cans.
- 3.9 Unused portions of canned goods should never be stored in their original cans. They should be placed in a suitable, closed container and stored in the freezer or refrigerator, as appropriate.

4.0 Cleaning

- 4.1 MI-108 § 7.41.14 requires documented inspections of all spaces and equipment used for food preparation, handling, storage and service. To ensure that all parts of the food handling establishment are appropriately hygienic, a written cleaning and disinfection program is recommended. Daily, weekly and monthly inspections as well as daily temperature readings of cold storage units should be included in this program.
- 4.2 To protect food safety and provide for the proper cleaning of food, utensils and equipment, the food handling area should have an adequate supply of hot and cold potable water at all times.
- 4.3 Disinfection may be necessary after cleaning. Chemicals used for disinfection (the minimum amounts of which are prescribed in MN 7-042-1, *Medical Care On Board Ship and Ashore: Medical Chest Recordkeeping and Responsibilities and Training for Medical Care*), should be stored in clearly identified containers away from the food handling areas, unless otherwise specified by the manufacturer.

5.0 Disposal of Refuse

- 5.1 Provision should be made for the sanitary storage and disposal of refuse to avoid disease-causing organisms and pests in food handling operations. See MN 7-042-1 for additional guidance on pest control.
- 5.2 Disposal of garbage should be performed where permitted in accordance with MARPOL Annex V, *Regulations for the Prevention of Pollution by Garbage from Ships*, as amended, and Guidelines, as provided by the International Maritime Organization.