



Guidelines for Food Safety on Merchant Ships and Fishing Vessels

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Introduction

Food Safety is a basic requirement in the prevention of food related problems on board ships. The sourcing of wholesome, safe food and water is essential.

Although clean and well maintained catering spaces give a good impression, food safety is more than cleanliness. It requires good working practices in accordance with basic principles of personal hygiene and food hygiene, covering the separation of raw and cooked foods and temperature control for example.

All vessels should apply food safety principles. Even if not required by international regulations, documented systems with records enable a quality management approach to be taken, along the lines of the International Safety Management Code. As well as helping to focus minds on food safety, the system also provides evidence of good practices. On a small coaster vessels and other vessels where the number of crew reflects an average family, a less formal system may function.

Control and inspection of all elements in the food chain by the master or his deputy are a requirement in many countries. Although the catering department of a ship is responsible, everybody participates in the food safety culture on board. Therefore everybody needs information and training on aspects of food safety. These Guidelines are a good basis for training courses on health care and hygiene in all maritime training settings.

Receiving Provisions

It is important to use reputable suppliers but basic control measures should be taken before storing supplies to check if the food is fit for consumption, with a suitable shelf life compatible with the vessel's trading pattern. Since stores are often delivered "Free Alongside Ship", this control has to take place before storing them on board.

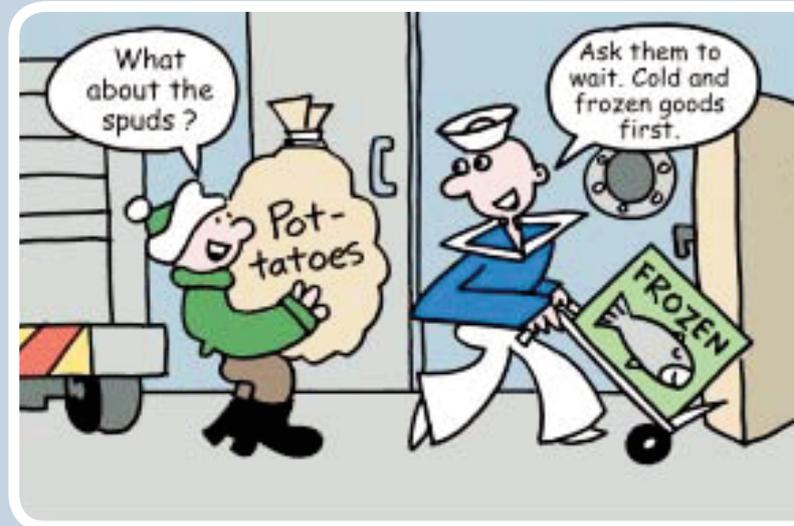
A simple check list should be used covering expiry dates, condition of the packages, and temperatures of chilled and frozen goods.

Do not accept damaged packages or rusted tins. Chilled goods with a temperature above 7°C have to be refused. Some goods like egg products (4°C), minced meat (2°C), and fresh fish (0-2 ° c) have to be delivered at a specific temperature that should be checked. The temperature of frozen goods should be -18°C or less. Ice crystals on frozen packages suggest improper storing arrangements prior to delivery.

Stock Control

Ships should have adequate storerooms including dry and cold storerooms and freezers. If storing capacity is limited, stock should be reduced and stores taken more frequently. Food should not be stored on deck.

Store in a way that commodities are used in strict date rotation (First in = First out). Especially perishable food should not be ordered nor accepted in quantities that cannot be consumed before the expiry date. Frozen foods maintained in hard frozen condition may be consumed beyond the date marking.



Deep Freezers

Temperature in freezers should be maintained at -18°C at least, but some tolerance levels should be allowed to take account of equipment. It is unlikely that short periods of -15°C will affect the quality and safety of frozen food.

Regular maintenance has to include checks on door seals, isolation of the doors, defrosting and checks on the correct functioning of thermometers.

Every time you enter the freezer room, the holding temperature is affected. Organise requirements to ensure access is kept to a minimum. Always close the door immediately on exit.

Do not put food on the deck, use grids. Never put food in the direct line of the cooling unit fan as this restricts air circulation and can lead to freezer burn.

Safety in Storerooms

- Avoid the use of meat hooks
- Wear gloves, safety shoes and warm clothes in the deep freezer
- Defrost the deep freezer before cleaning it

Cold Stores

Keep temperatures constant so far as possible to avoid humidity: 5°C is recommended, although a tolerance of up to 8°C is acceptable.

A separate fridge should be used if possible for raw food. All items should be individually wrapped or covered. If raw and cooked foods are contained in the same cabinet, then raw food should be stored at the bottom to avoid contaminating the cooked food.

Although fruit and vegetables have different temperature requirements it is generally accepted that “cool” rooms or cabinets up to 10°C provide a satisfactory alternative.



Proper Storage Techniques for Fresh Produce

Promptly put away fresh fruits and vegetables that need refrigeration.

The following are the different condition requirements for keeping fresh fruits and vegetables at their optimum freshness :

- Only in the Refrigerator, Never at Room Temperature to Avoid Spoilage: apples, artichokes, asparagus, beans, beets, blueberries, broccoli, brussel sprouts, cabbage, Belgian endive, carrots, cauliflower, celery, cherries, sweet corn, cranberries, cucumbers, eggplant, ginger root, grapes, fresh herbs, leeks, lettuce and other greens, mushrooms, green onions, parsnips, peas, peppers, pineapple, new potatoes, radishes, raspberries, rhubarb, strawberries, squash, citrus fruit, turnips.
- At Room Temperature until Ripe and then in the Refrigerator: apricots, avocados, kiwifruit, mangoes, melons, nectarines, papaya, peaches, pears, plums, tomatoes.
- Only at Room Temperature and preferably not in the Refrigerator: bananas, garlic, globe onions, mature potatoes, pumpkins, rutabagas, sweet potatoes.

Keep fruit and vegetables well ventilated and stored in suitable boxes or containers. Plastic bags should be discarded as this material does not generally allow for proper ventilation, causing sweating to occur. Inspect every day and remove spoiled items, leaves etc.

Dry Stores

Use a register to keep track of dry stores. Check for the presence of pests or vermin. Check flour and rice for the presence of insects. Remove blown tins.

Dry stores should be cool, around 10°C, dry, well lit and ventilated.

Do not put stores directly on the deck and not against the walls. Clean the dry store regularly and remove waste immediately.

Bacterial Contamination

Food poisoning bacteria are found on people, insects, rodents, refuse and waste food, even dust ; but thorough cooking will destroy most harmful bacteria.

Harmful bacteria will multiply rapidly if food is incorrectly prepared and stored. Even if it is correctly prepared or stored it can be cross-contaminated from raw food by using the same utensils for instance.

High risk products, frequently associated with food poisoning should be carefully stored and protected from contamination. These products are generally high protein, ready to eat foods including cooked meats, poultry and raw or cooked fish, gravy and stock, milk, cream and eggs and any associated by-product.

Food should be covered to prevent cross-contamination.

Main reasons for food poisoning are :

- 1 Undercooking - Ensure that food is thoroughly cooked ! - e.g. juices from poultry and joints of meat should run clear !
- 2 Unsafe temperatures to keep prepared food.
- 3 Preparation of food too far in advance and stored at room temperature.
- 4 Cooling food too slowly before refrigeration.
- 5 Unsafe temperature in refrigerator and freezer.
- 6 Bad way to keep food in the refrigerator : uncovered raw food, raw food together with or above prepared dishes.
- 7 Unsafe temperature to keep hot food (below 63°Celsius).
- 8 Bad personal hygiene.
- 9 Dirty counters, cutting boards, knives and small appliances.
- 10 Dirty dishes and utensils.
- 11 Infected food handlers with infectious diseases, wounds, ulcers or diarrhoea.
- 12 Defrost at room temperature or in warm water.
- 13 Bad control and hygiene on pests and vermin.
- 14 Bad disposal of waste.
- 15 Cleaning products, detergents and other chemicals stored near food.

Personal Hygiene

At one time or another, most people carry some type of food poisoning organisms. Catering crew must therefore take extreme care with personal cleanliness to avoid contaminating food.

Hands must be kept clean and washed, especially

- After using the toilet
- After handling raw meat
- Before handling prepared food

There must be sufficient wash-hand basins with soap and hand drying facility. Disposable towels or a hot air dryer is better than a traditional towel. If protective gloves are used, they should be replaced in much the same order as the hand washing routine.

- Keep hair covered
- Keep finger nails short
- Wear clean clothes and apron



Fitness to work

Persons suspected of, diagnosed with, or exposed to any that can be transmitted by food, shall be excluded from the galley and other associated catering areas or food related areas or operations, including working with exposed food, warewashing, equipment, utensils, table linens, singleservice and single-use articles.

Persons who have conditions or symptoms of boils, open sores, infected wounds, diarrhoea, jaundice, fever, vomiting, sore throat with fever, or discharges from the nose or mouth shall report these conditions or symptoms and shall be restricted from working with exposed food, warewashing, clean equipment, utensils, table linens, and unwrapped single-service and single-use articles.

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

The restricted individuals shall not be allowed to return to the above duties until they are symptom free for a minimum of 48 hours.

Separate raw and cooked food !

Raw food can cross-contaminate cooked food or food that does not require further treatment before consumption, and cause foodborne illness. Keep raw and cooked food separate and covered.

Separate work surfaces, chopping boards and utensils should be set aside for the preparation of raw meat and must not be used for the preparation of foods that will be eaten without further cooking. Using the same work surface must be discouraged but in the unlikely event that the same work surface has to be used, great care must be taken to ensure it is cleaned and disinfected between handling raw and cooked meats or other ready to eat products.

Have clean plates and cooking utensils ready.
Never use the same plate, tray or utensils for raw and cooked food. Raw meat juices can spread bacteria to your safely cooked food and cause foodborne illness !



Use of eggs

If raw eggs are used take the following precautions :

- The eggs have to be as fresh as possible : check the dates on the package.
- After the expiry date the eggs have to be destroyed.
- After breaking the eggs the shells have to be removed immediately, the surface cleaned and disinfected.
- After handling eggs and egg shells hands have to be washed.
- Broken eggs that are not used immediately have to be placed in the refrigerator, covered and must be used within 48 hours.
- Preparations with raw egg like mayonnaise, chocolate mousse and tiramisù must be cooled immediately after preparation.

Cleaning and Disinfection

Clean the pantry regularly, with hot water and soap, keeping food off the deck. Store food in sealed containers. Thoroughly clean and disinfect containers and utensils that were in contact with raw food before you reuse them.

Especially articles that come into direct contact with food have to be washed, rinsed with hot water and disinfected before use. Articles include: trays, knives, cutting boards, food preparation machinery and work tops. A cleaning procedure is useful as it clarifies who cleans what, when, with which cleaning products and how. Take small appliances apart (food processors, meat grinders and blenders) right after you use them, and clean and disinfect them thoroughly. Only use accepted detergents.

Ventilation hoods and grease filters should be cleaned regularly. Refrigerators, deep freezers, deck heads and neon covers should not be forgotten.

Bleach sanitizer

- Combine 5 ml (1 tsp) of bleach with 750 ml (3 cups) of water in a labelled spray bottle.
- After cleaning, spray sanitizer on the surface/utensil and let stand briefly.
- Rinse with lots of clean water, and air dry (or use clean towels).

Cleaning and disinfecting products have to be kept in a separate well maintained place.

Good housekeeping should help to discourage pest and vermin. Routine inspections should be carried out.

If problems arise, actions should be carried out according to a logical plan with pest control and monitoring procedures. Chemical pesticides have to be kept separately and well-locked.

Places where wastewater is collected have to be cleaned and disinfected regularly.

Air dry dishes and utensils if you can, or dry them with clean kitchen towels.

Deep frying pan

The temperature of oil or fat in the deep frying pans has to be controlled. A thermostat on the pan is a necessity. The thermostat has to indicate the desired temperature and regularly this temperature has to be checked with a portable thermometer.

The temperature of oil or fat may never go above 180°C and oil or fat have to be replaced regularly.



Buffets

At room temperature harmful bacteria will grow quite quickly. Food normally associated with buffets, apart from low risk food such as bread rolls for example, should not therefore be exposed to temperatures in the "Danger Zone"

Units and equipment must be able to maintain safe temperatures.

- hot food 63°C or above;
- cold food 5°C or less

Containers should not be "topped up", replacement containers with a batch of fresh food should be provided.

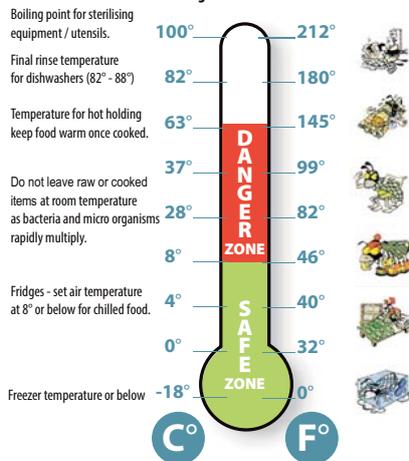
Leftovers

Proper portion management should reduce the amount of "leftover" food. However in the event of having leftovers certain standards must be applied.

- Hot cooked meats should be cooled as quickly as possible in a clean controlled environment then refrigerated.
- Dividing a large portion helps the cooling process.
- Warm food must not be refrigerated as it will increase the fridge temperature.
- Once chilled, leftovers should be served cold the following day.

Beware the « danger zone ... »

« Keep prepared and perishable food no longer than 2 hours between 5°C and 63°C »



Food Safety

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Important

It is not good practice to reheat dishes or freeze leftovers because the additional heating and defrosting process is likely to encourage bacterial growth.

When in doubt, throw it out !!