MARINE SAFETY AGENCY

MARINE GUIDANCE NOTE

MGN 61 (M+F)

Guidelines for Food Hygiene on Merchant Ships and Fishing Vessels

Notice to Shipowners, Builders, Masters, Skippers , Officers and Crew

This Guidance Note supersedes Merchant Shipping Notice Nos. M1373 and M1375

Summary

These Guidelines provide practical advice on the fundamental rules of food hygiene consistent with the catering and meat industry in general.

Key Points:-

- Bacterial contamination is the most serious risk to food safety.
- Food hygiene principles must be adhered to regardless of the age, size and type of vessel.
- Food handlers should receive appropriate education and training in the principles and practice of food hygiene.

INTRODUCTION

1.1 Details of the statutory framework and MSA responsibilities are contained in Annex 2 to this Guidance Note.

1.2 No attempt is made to comment on the quality of food other than to say that it should comply with the requirements of the Food Safety Act and respective regulations or other EU standards and the 1946 ILO Convention No 68. Owners should consider the special needs of mariners whose religion, special dietary requirements, or customary dietary practices necessitate the observance of certain rules or requirements with regard to some foods or with the way the food is prepared.

1.3 Traditionally the basis for food hygiene standards has been the use of clean well maintained catering spaces and the avoidance of unsanitary conditions. Even in clean, well-maintained galleys however, food may be handled carelessly with insufficient regard to the risk of bacterial contamination. Good food hygiene is more than cleanliness; it is also dependent on the following principles:

– personal hygiene,

– segregation of raw and cooked foods, and

– temperature control.

1.4 Ship operators should ensure that all food handlers receive appropriate education and training in the principles and practice of food hygiene and associated health and safety issues and that they maintain acceptable standards to secure the health and well-being of ships' crews by:

– protecting food from risk of contamination, including harmful bacteria, poisons and foreign bodies;

– preventing any bacteria present multiplying to an extent which would cause illness or early spoilage of the food;

– destroying any harmful bacteria in the food by thorough cooking.

1.5 Food hygiene principles must be adhered to regardless of the age, size and type of vessel. Although it is not a requirement, documented systems with records provide written evidence of good practices. Many passenger ships and ships with large crews already use the philosophy of the International Safety Management Code to put the emphasis on quality management to provide a formal systems based approach. It would however be unreasonable to expect small vessels with six crew for example, to keep records to secure the required standard.

BACTERIAL FOOD CONTAMINATION

2.1 Bacterial contamination is the most serious risk to food safety. Contaminated food looks, tastes and smells completely normal and causes the vast majority of food poisoning cases. Contamination usually occurs through ignorance and food handlers taking short cuts.

2.2 Food poisoning bacteria are found everywhere. Sources include people, insects, rodents, refuse and waste food, even dust. Bacteria prefer warm, moist environments and if food is incorrectly stored and insufficient care is taken during its preparation, harmful bacteria will multiply rapidly. Even if food is stored and cooked properly, it can still be cross-contaminated with bacteria from raw food if for instance the same utensils or surfaces are used to prepare both.

2.3 "High risk" foods, those most commonly implicated in food poisoning cases, are cooked foods or products not requiring further processing such as cooked meat and poultry, meat products, gravy and stock, milk, cream, eggs, egg products.

2.4 Although raw meat often carries harmful bacteria and is a source of contamination, a rare steak is safe because bacteria are only present on the surface of meats. On the other hand, hamburgers and other products made from minced meat require thorough cooking as any harmful bacteria that were present on the surface have been distributed throughout the mass of the meat.

2.5 No catering environment can operate without harmful bacteria being present at some time, but small numbers of most types of bacteria do not cause illness. The storage, preparation and serving of food should therefore only be carried out where the conditions are such that bacteria are denied favourable conditions for growth and the food is not exposed to the contamination risk.

2.6 Food should be covered wherever possible to prevent cross-contamination and absorption of odour.

2.7 The 10 main reasons for food poisoning are:

1. Preparation of food too far in advance and stored at room temperature.
2. Cooling food too slowly prior to refrigeration.
3. Not reheating food to high enough temperatures to destroy harmful bacteria.
4. Using contaminated cooked food.
5. Undercooking.
6. Not thawing frozen meat for sufficient time.
7. Cross contamination from raw food to cooked food.
8. Storing hot food below 63°C.
9. Infected food handlers.
10. Improper use of leftovers.

PERSONAL HYGIENE

3.1 Most people carry some type of food poisoning organism at one time or another. Food handlers have a responsibility therefore to observe high standards of personal cleanliness to ensure that they do not contaminate food.

3.2 There must be sufficient wash-hand basins in galley with soap and hand drying facility, depending on the scale and nature of the food preparation. Very small galleys may be exempt so long as a wash-hand basin is situated adjacent to the galley. Disposable towels or a hot air dryer is better than a traditional towel. Food handlers should wash their hands regularly and always on entering the galley or before handling any food or equipment. They should also be washed after visiting the WC, and in between handling raw and cooked food.

3.3 Toilets with wash-hand basins should be situated near to, but separate, from galley. Prominent signs about washing hands should be displayed.

3.4 Food handlers should avoid so far as possible direct contact between hands and food using tongs for example. Protective gloves may be worn but they can give a false sense of security.

3.5 Cuts, spots, sores etc should be completely covered by coloured (blue or green) waterproof dressings.

3.6 Food handlers should be clean and tidy and wear appropriate protective clothing (to protect the individual and the food).

FITNESS TO WORK

4. Food handlers with food poisoning symptoms, eg diarrhoea and vomiting or suspected of carrying food poisoning organisms because of close contact with a confirmed case should be excluded from any job which might expose food to risk of contamination. Such cases and several other conditions including hepatitis "A" and diphtheria require infected persons to be similarly excluded for varying lengths of time according to medical advice. Secondary infections associated with boils and septic cuts, respiratory infections from heavy colds may also require the suspension of food handlers until successfully treated.

SEGREGATION OF RAW AND COOKED FOODS

5.1 Raw food must always be kept apart from cooked food or milk for example that requires no further treatment before consumption. Separate refrigerators are preferred although if in the same unit, the raw food must always be placed at the bottom to avoid drip contaminating ready prepared food. Food should also be covered or wrapped to prevent drying out, cross-contamination and absorption of odour.

5.2 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.

TEMPERATURE CONTROL

6.1 It should be noted that legislation for England & Wales, Food Safety (Temperature Control) Regulations 1995, requires chill holding at a temperature of 8°C or below. It is however generally the case that operators maintain temperatures at 5°C or below which is safer than that prescribed, and this standard is recommended by the MSA.

6.2 Pathogenic bacteria thrive in warm conditions. To prevent their growth it is essential to keep food either very hot (above 63°C) or very cold (below 5°). Food should not be left in the danger zone (5°C - 63°C) for longer than is absolutely necessary.

6.3 A general rule when handling food during and after preparation would be a single period of up to 2 hours at ambient temperatures. In very high ambient temperatures the handling period should be reduced to about 1 ½ hours.

6.4 To cook meat safely, a centre temperature of 74°C is usually required or until the juices run clear. Where possible a probe thermometer should be used to check the temperature. Under no circumstances should meat products or rice be reheated more than once. If reheating is absolutely necessary the food should be covered and cooled rapidly after cooking and stored in a refrigerator until it is ready to be reheated. It should be then reheated rapidly and thoroughly.

6.5 Cooling of food, particularly joints, is likely to be a potential health risk as food should be cooled below 10°C in less than 1 ½ hrs. If the process is necessary then cooling in controlled conditions should be effected, ideally using a blast chiller. Cooked food should not be cooled in the same area used to defrost raw meat.

6.6 The following points should be considered to minimise the risk of contamination during the cooling process.

- Use a safe cooling area such as a larder with a lower room temperature.
- Pour liquids into shallow pans and stir frequently.
- Split food into relatively small pieces or batches.
- Cover food with a tight wrapping.
- Use an iced water bath.

6.7 Rapid thaw cabinets are available to defrost food if this is required on a regular basis. Controlled thawing of raw meat/poultry should take place in a cool area entirely separate from other foods that may be exposed to risk of contamination from thawed liquid. This area must never be used to cool cooked food prior to refrigeration. The food handling room within the cold stores area is acceptable provided the area is clean and the food is covered and stored in a container. Food should be prevented from sitting in the thaw liquid by placing it on grids either above trays on a shelf or in a container. Defrosting large quantities of meat should be carried out in a cool larder at 10°C to 15°C. The large bucket of cold water method, frequently observed, should be discouraged, particularly if the bucket is located in the galley.

6.8 Chill cabinets, cold rooms and refrigerators should not exceed 5°C and deep freeze units should be minus 18°C or below. Some older systems may be unable to reach minus 18°C in which case a few degrees tolerance has to be accepted. As a guide frozen food can be safely stored at minus 12°C for one month only. The presence of ice usually indicates fluctuating temperatures. High humidities and fluctuating temperatures (above minus 10°C) accelerate mould and other spoilage bacterial growth causing souring and rancidity of meat. Food should never be stored in front of cooling unit as this restricts the circulation of air. Regular maintenance of refrigeration equipment, including checks on door seals, defrosting and checks on the correct functioning of thermometers should be carried out as a routine by ship personnel. A suitable thermometer should also be provided to check on all equipment that does not have a built in thermometer. Suitable packaging is essential to avoid loss of moisture from the surface of food (freezer burn). Refrigeration units should not be located, as far as practicable, close to ovens or other large galley cooking units.

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

CLEANING PROCEDURES

7.1 All articles that come into contact with food should be thoroughly washed, rinsed and disinfected before use. Cracked or chipped food containers should be discarded.. Articles include trays, knives, cutting boards, food preparation machinery and work tops. Dishwashers disinfect by virtue of the high rinse temperature achieved. If dishes are washed in a sink they should be rinsed in another sink containing very hot water. Decks, because they are not used for food preparation, do not need to be disinfected although the process is useful as it serves to disinfect the scuppers.

7.2 Mechanical dishwashers should be regularly cleaned. Recommended temperatures should ensure that items come out clean, too hot to handle and air dry in less than half a minute. Clean items should be air-dried away from dirty items. Drying cloths should not be used.

7.3 Food and equipment must not be exposed to contamination during cleaning operations. For example utensils are often stored in the bottom shelf of an open unit, leaving them exposed to contamination from hose water used to clean the deck.

7.4 Ventilation hoods and grease filters should be cleaned regularly. The inside surfaces of ducting should be cleaned at least once every 3 months. Only trained personnel, using a safe means of access should remove grease filters for cleaning and clean grease and oil from hoods and ducts. Galley crew should be aware of the potential for serious fires in ventilation ducting.

PESTS

8.1 Good housekeeping obviously minimises the risk of infestation and it is important to ensure that areas, particularly refuse areas are kept in a clean and tidy condition. Lids should always be kept on waste bins that should be washed after emptying.

8.2 Flies and cockroaches present a serious hazard because of their feeding habits and the sites they visit. Flies defecate and vomit previous meals back on to the food as they feed. Rats and mice commonly excrete organisms such as salmonellae. Contamination of food may also result from droppings, urine, hairs and gnawing. Food suspected of being contaminated by rodents must be destroyed.

8.3 As cockroach and other pest presence on ships is fairly common, it is reasonable to expect a responsible member of crew to carry out routine inspections of food areas, particularly undisturbed areas. If pests are found appropriate action should be taken by the master to eradicate or minimise the problem. According to the scale of the problem there may be some merit in using a pest control book to record actions, as a more methodical way of dealing with the problem.

8.4 Rats can spread a number of diseases and immediate deratting action should be taken in conjunction with local port health authorities, who are responsible for issuing deratting certificates.

8.5 Any treatments used should comply with the "Recommendations on the Safe Use of Pesticides in Ships".

STOCK CONTROL

9.1 Great care should be taken to ensure the use of commodities in strict date rotation and that supplies have the best possible durability date. Perishable provisions should neither be ordered nor accepted in quantities greater than can be consumed before the expiry date, with the exception of frozen foods. Provided these have been maintained in hard frozen condition from production to delivery and

during storage on board ship, they may be accepted for use beyond the date marking. On some ships there may be a local colour coding system or something similar to further assist staff to quickly recognise out of date stock.

9.2 Daily checks should be made on short-life perishable food such as fresh fruit and vegetables. Ships should have adequate storage facilities for all stores including cold stores. If storage areas are inadequate, stock levels should be reduced by taking on stores more frequently or if that is not possible, additional storage should be made available. Food should not be stored on the deck.

VENTILATION IN GALLEYS

10. Mechanical ventilation systems should be used and should be adequate to maintain a reasonable temperature without the need to jam open fire doors or doors to the open deck. Galley staff often close vents to prevent air contamination. This may indicate that filters need to be checked or fitted.

SANITARY FACILITIES

11. Sanitary accommodation should be easily cleaned and impervious to damp and properly drained with sufficient light, heat, ventilation and hot and cold water. WCs should have an ample flush of water, available at all times and independently controlled. Shower heads should be cleaned in a chlorine solution (50ppm) every 3 months.

POTABLE WATER

12.1 Potable water should be bright, clear, virtually colourless and it should bubble when shaken. This does not however guarantee that the water is safe. There is a tendency to assume that little or no action is needed to protect the purity of the water, particularly when using quayside facilities regularly. Although the water may come from the same source as that supplied to the general public in their homes, there is a vast difference to the operation of supplying and storing the water, exposing it to a much higher risk of contamination. It is therefore essential that control measures are taken to minimise the risk of contamination according to that provided in the Ship Captain's Medical Guide.

12.2 A fresh water maintenance log detailing all aspects of treatment and maintenance carried out should be kept and include a record of the following routine treatments as well as replacing filters or other elements of water making plants.

12.3 Dedicated fresh water hoses should be superchlorinated at 100ppm for a contact of one hour at least 6 monthly.

12.4 All fresh water taken from shore should be chlorinated on loading to ensure a residual free chlorine content of 0.2ppm, unless an automatic chlorination unit is used. Concentration levels should be checked.

12.5 Chlorine tests of taps and shower outlets should be carried out at monthly intervals.

12.6 Storage tanks should be opened up, emptied, ventilated and inspected at intervals not exceeding 12 months for inspection and maintenance. Tanks should be thoroughly cleaned, recoated as necessary and flushed out.

12.7 It is also recommended that water be tested for bacterial and chemical contamination every 3 months. The local Port Health Authority can arrange to take samples and have them analysed.

HEALTH AND SAFETY ISSUES

13.1 There are obvious hazards within the galley and store areas, such as wet greasy deck, extreme high temperatures and humidity, congestion, particularly around the hot plate area, cleaning materials, electrical, fumes, knives, equipment such as deep fat fryers, brat pans and tilting kettles.

13.2 Electrical equipment, including wiring in galley and store areas should be regularly inspected by a qualified member of the crew. Mechanical fans and other kitchen equipment exposing blades and other dangerous parts should have suitable protective guards. Extreme care should be exercised at all times.

13.3 Arrangements should be made for the segregation and disposal of garbage, foodwaste and other galley waste to maintain operational health and safety standards.

13.4 Burns and scalds are common injuries in catering environments. A first-aid box should therefore be located either in the galley or a suitable area convenient to the galley. It is further recommended that a notice stating the action to take if someone is burned or scalded should be prominently displayed in the galley.

13.5 Detailed advice specific to galley operations is available in Chapter 14 of the Code of Safe Working Practices for Merchant Seamen.

EDUCATION AND TRAINING FOR FOOD HANDLERS

14. Food hygiene is a an important issue and all practical steps should be taken to avoid poor practices. It is extremely important therefore that any member of crew preparing and cooking food has a level of understanding on the basic principles of food hygiene. Although there is no requirement to do so, it is desirable that they attend a short basic hygiene awareness course unless they hold catering certificates. In-house training may be sufficient to ensure an appropriate level of understanding if a certificated ship's cook is available to give instruction and supervise. Crew who prepare and cook food on an ad hoc basis (for example covering for illness) must be able to demonstrate basic good food hygiene practices. They should also receive such training as is necessary to ensure they have an awareness of health and safety aspects within the catering environment and are capable of using equipment and treating minor injuries such as cuts and scalds.

CREW INFORMATION

15. Information, including simple placards and up-to-date material, relating to national and international regulations on food preparation and storage, and hygiene and food safety should be readily available to members of the crew in an approved language understood by the crew.

ADVICE

16. Anyone requiring additional information or specific advice relating to food hygiene matters should contact the Inspector who is based at Leith Marine Office, 1 John's Place, Leith, Edinburgh, EH6 7EL. Telephone Number 0131 554 5488 or 0802 644434.

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An executive agency of
THE DEPARTMENT OF THE ENVIRONMENT, TRANSPORT AND THE REGIONS

Annex 1

TEN TIPS FOR FOOD SAFETY

STORE CHILLED AND FROZEN FOOD QUICKLY
(Keep delays to an absolute minimum when taking on stores)

KEEP YOUR GALLEY CLEAN
(Disinfect worktops, equipment and utensils between handling food that is to be cooked and food that is not)

WASH HANDS THOROUGHLY
(Particularly after visiting the toilet, before preparing food, in between handling raw and cooked food, and after handling waste food)

PREPARE AND STORE RAW AND COOKED FOOD SEPARATELY
(If separate cabinets are not available then raw meat and fish should be stored at the bottom of the fridge and always keep food covered)

KEEP YOUR FRIDGE BELOW 5°C
(Get a fridge thermometer)

KEEP YOUR FREEZER BELOW -18°C
(Mould growth can occur at temperatures of -10°C)

DEFROST FOOD IN CONTROLLED CONDITIONS
(Not in the galley - use a cool clean area such as the food handling room and keep it covered and separate from cooked foods)

CHECK "USE-BY" DATES
(Use foods within the stated period)

COOK FOOD THOROUGHLY
(If you reheat, do it only once and make sure it's piping hot)

KEEP HOT FOOD HOT AND COLD FOOD COLD
(Do not just leave food standing around)

Annex 2

STATUTORY FRAMEWORK

1. Inspectors are appointed under the provisions of the Merchant Shipping Act 1995 for the purpose of seeing that requirements of the Act and regulations made thereunder are duly complied with. The relevant regulations are the Merchant Shipping (Provisions and Water) Regulations 1989 and certain requirements of the Merchant Shipping (Crew Accommodation) Regulations 1997 and the Merchant Shipping (Crew Accommodation) (Fishing Vessel) Regulations 1978. The Merchant Shipping & Fishing Vessel (Health & Safety at Work) Regulations 1997 also apply.

2. The need for the Provisions and Water Regulations arises from the 1946 ILO Convention No 68 concerning food and catering for crews on board ships. The Regulations require all merchant ships and fishing vessels over 24 metres in length to be supplied with provisions and water which:

a. are suitable in respect of quantity, nutritive value, quality and variety having regard to the size of the crew and the character and nature of the voyage;

b. do not contain anything which is likely to cause sickness or injury to health or which renders any provision or water unpalatable; and

c. are otherwise fit for consumption.

3. The Regulations also require the inspection at sea of the supplies of food and water by the master or his deputy together with a responsible member of the catering department. UK employers, masters and skippers who fail to comply with their obligations under the Regulations are guilty of an offence and are liable on summary conviction to a fine. The ship may also be detained until the health and safety of all employees and other persons aboard is secured. The principles of the Regulations apply to non-United Kingdom ships, other than fishing vessels.

4. Article 8 of the ILO Convention and section 44 of the Merchant Shipping Act 1995 allow for a special inspection of the ship following a complaint from at least 3 of the crew about food and water supplies.

5. The Crew Accommodation Regulations require all galleys and storerooms, sanitary and cabin accommodation to be maintained in a clean and habitable condition and that all equipment and installations to be maintained in good working order.

6. In support of these Regulations, Chapter 14 of the Department's Code of Safe Working Practices for Merchant Seamen gives guidance on the standards expected.

7. The MSA's Food & Hygiene Inspector has overall responsibility for food and hygiene issues affecting crew and regularly visits UK ports to carry out inspection work as well as providing guidance and support for local MSA marine surveyors who check food hygiene standards as part of the overall ship inspection.

8. Environmental or Port Health Officers have certain responsibilities under the Public Health Act 1936 and Food Safety Act 1990 and enforce statutory powers under Public Health (Ships) Regulations and other regulations. In broad terms, Environmental or Port Health Officers are concerned with protecting the UK from any condition that is likely to cause the spread of infectious disease. They issue derat certificates or exemptions as required by the International Health Regulations and apply hygiene standards on passenger vessels providing catering facilities for the public.

9. A close liaison is maintained between local offices of respective agencies to avoid duplication of effort and to ensure that where inspections carried out by members of one organisation reveal a situation that would clearly also be the concern of the other, appropriate action under respective powers can be considered.