



S C H E D U L E O F R E Q U I R E M E N T S
S H I P S A N I T A T I O N

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LCHV, National Centre for Hygiene and Safety
Postbus 2200
1000 CE Amsterdam
The Netherlands
Tel: +31 (0)20 555 54 15
Fax: +31(0)20 555 56 71
E-mail: : info@lchv.nl
Website: www.lchv.nl

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1 INTRODUCTION

This document contains the WHO¹ standards that a ship is required to meet in order to be issued a Ship Sanitation Certificate.

Compliance requirements are detailed for each of the WHO standards as a series of recommendations to be implemented on board a ship. All these recommendations form the basis of the inspection leading up to the issuance of a Ship Sanitation Certificate.

WHO standards include additional requirements for 'large ships', a term used by the WHO to refer to *passenger ships*. The definition of a passenger ship is **a ship equipped and designed to carry more than 12 persons on board excluding crew members**. These additional passenger ship standards can be readily identified within this *Schedule of Requirements* by a frame surrounding the text in question.

A so-called *grandfather exemption* has been agreed in the case of a number of standards. This means that these standards only apply to new ships built after a yet to be determined date. Such exemptions only apply to standards relating to structural requirements.

¹ WHO *Interim Technical Advice for Inspection and Issuance of Ship Sanitation Certificates*, August 2007 (<http://www.who.int/csr/ihr/travel/TechnAdvSSC.pdf>)

2 GALLEY

2.1 Hygiene and Food Safety Knowledge

WHO Standard 1.2

Does the crew assigned to galley duties understand cleaning procedures, as well as safe food holding and preparation methods, for example minimum/maximum temperature requirements depending of the type of food stuff and avoidance of cross-contamination procedures?

WHO Standard 1.3

Do galley staff display good personal hygiene and demonstrate knowledge of when and how to wash hands.

Check List

- ☞ Demonstrate that galley staff are familiar with agreements/procedures concerning issues such as personal hygiene, cleaning, hygienic preparation methods, temperature and storage standards.
- ☞ As a minimum requirement, ensure that galley staff wash their hands with water and liquid soap in the event of any of the following:
 - when starting work and after each break
 - when changing working activity
 - after working with raw food products
 - after going to the toilet, blowing their nose or sneezing
 - before creating portions or serving food

Additional Requirements for Large Ships

WHO Standard 1.3.2

Staff assigned to galleys should have competency qualifications obtained by completing a training course in food handling and preparation. This training should be up-to-date and records of training should be kept.

Check List

- ☞ Demonstrate that a training and refresher course plan is in place for galley staff.
- ☞ Record training, instruction and refresher courses completed by each staff member relating to food safety.

2.2 Receipt of Food Stuffs

Additional Requirements for Large Ships

WHO Standard 1.1

All food should typically be obtained from shore sources approved or considered satisfactory by the relevant health administration. Food needs to be clean, wholesome, free from spoilage and adulteration, and otherwise safe for human consumption. Raw materials and ingredients should ideally not be accepted by the ship if they are known to contain parasites, undesirable microorganisms, pesticides, veterinary drugs or toxins, decomposed or extraneous substances which would not be reduced to an acceptable level by normal sorting and/or processing. Where appropriate, specifications for raw materials can be defined and applied. Stocks of raw materials and ingredients would typically be subject to effective stock rotation.

Check List

- ☞ Record which requirements must be met when taking receipt of a food product.
- ☞ Check that products are clean, undamaged, unperished and at a temperature compliant with WHO Standard 2.3.3 when delivered to the ship. Check the best-before date or the use-by date. Record findings in a logbook.
- ☞ Do not accept any products that do not meet standards.
- ☞ Adopt the FIFO principle (*First In, First Out*) for product storage.
- ☞ Check incoming food deliveries for signs of vermin. Record findings in a logbook.

2.3 Storage and Preparation

Additional Requirements for Large Ships

WHO Standard 1.3.3

Logs of food holding temperatures should be kept.

WHO Standard 1.3.5

Foods should be purchased from safe sources and be properly stored, prepared and served.

Check List

- ☞ Check refrigerated and deepfreeze storage temperatures once per week. Record findings in a logbook.
- ☞ Cover food and label products with a best-before date.
- ☞ Ensure that food preparation surfaces are clean.
- ☞ Only use materials that are smooth and washable.
- ☞ Keep refrigerated and deepfreeze products out of the fridge or freezer for as short a period as possible (max. 30 minutes).
- ☞ Heat raw products to above 75°C (167°F) at their centre or until cooked. Exceptions to this rule include products not subject to internal contamination such as steak. These products should be heated to above 45°C (113°F).
- ☞ Cool down products to below 7°C (44°F) within five hours.

2.4 Service

Additional Requirements for Large Ships

WHO Standard 1.4.1

Food openly on display at buffet counters -- whether packaged, on the counter, in a service-line, or under salad bar food guards --, should be protected by appropriate display cases or by other effective ways to prevent crew or guest contamination.

WHO Standard 1.4.2

Self-service buffet or salad bar operations with unpackaged ready-to-eat foods, should be provided with serving utensils and dispensing methods that prevent food/drink contamination.

WHO Standard 1.4.3

Foods should be protected from contamination in storage or transport from sources such as seawater, bilge water, wastewater, hydraulic or fuel lines.

WHO Standard 1.4.4

Hot foods should be kept hot and cold foods should be kept cold on display and service areas and buffets.

Check List

- ☞ Ensure that the buffet, serving areas and/or salad bars are fitted with sneeze screens.
- ☞ Cover products wherever possible.
- ☞ Place tongs, forks or other serving utensils next to the dish so that products can be taken or served.
- ☞ Store products in closed compartments to protect them from external contamination.
- ☞ Keep and serve hot dishes above 60°C (140°F).
- ☞ Keep and serve cold dishes below 7°C (44°F).

2.5 Hand-Washing Facilities

WHO Standard 1.4

Is there at least one dedicated handwashing station accessible to the galley staff and is it properly equipped (paper towels/blow dryers, soap and waste receptacle)?

Check List

- ☞ Equip the galley/kitchen with hand-washing facilities. This means a place where staff can wash their hands.
- ☞ Equip the hand-washing facility with a soap dispenser, disposable hand towels and wastepaper bin, or a hand dryer.

Additional Requirements for Large Ships**WHO Standard 1.3.6**

All galleys and food preparation or handling areas shall have conveniently located and ready access to dedicated hand wash stations, and the stations should be supplied with soap, a disposable paper towel, and a waste receptacle.

WHO Standard 1.3.7

The hand wash station should be for this use only and remain accessible at all times.

Check List

- ☞ Equip the galley/kitchen and other food preparation and processing areas with a hand-washing facilities and ensure their constant availability.
- ☞ Ensure that the hand-washing facility is equipped with a soap dispenser, disposable hand towels and wastepaper bin, or a hand dryer.
- ☞ Indicate that the hand-washing facility is intended for the sole purpose of washing hands.
- ☞ Place the hand-washing facility in a conveniently accessible location.

2.6 Cleaning, Maintenance and Waste**WHO Standard 1.1**

Is there a schedule for cleaning and maintenance on a routine basis, for and including fixtures, fittings and equipment used during production and food handling?

WHO Standard 1.5

Are utensils, pots/pans and food contact portions of equipment adequately cleaned and sanitized/disinfected?

WHO Standard 1.6

Is there a build-up of food matter attractive to rodents or insects?

Check List

- ☞ Implement and work according to cleaning procedures and corresponding cleaning schedules.
- ☞ Clean the galley/kitchen after finishing work and ensure that no food remains are left out.
- ☞ Implement a checklist and tick off when scheduled cleaning of listed items has been performed.
- ☞ Implement and follow a galley/kitchen maintenance plan.
- ☞ Ensure that materials are kept clean.
- ☞ Cover and seal products so that they do not attract vermin.
- ☞ Implement and work according to a predetermined waste storage and processing procedure.
- ☞ Empty waste containers in a timely fashion to prevent them from overflowing.

Additional Requirements for Large Ships

WHO Standard 1.3.1

Written cleaning and maintenance policies and procedures should be in place for each critical area in the galley that can contribute to infection or contamination of food on board.

Check List

- ☞ Indicate for each area how frequently items should be cleaned and disinfected, as well as the methods to be used. Record this in a cleaning schedule.
- ☞ Indicate for each area how frequently items should be replaced and/or maintained. Record this in a maintenance schedule.

2.7 Construction and Layout**WHO Standard 1.7**

Is there any galley area that could provide harborage for rodent or insect disease vectors/hosts?

WHO Standard 1.13

Are all food handling areas constructed of impervious material with a smooth surface to facilitate cleaning, and not conducive to creating harborage for rodent or insect vectors/hosts?

Check List

- ☞ Ensure that the galley/kitchen layout and equipment placement is such that cleaning can be easily performed and vermin cannot take refuge.
- ☞ Ensure that the galley/kitchen floor is impermeable, easy to clean and non-absorbent.

Additional Requirements for Large Ships**WHO Standard 1.3.4**

All surfaces, equipment and fixtures should be appropriate for their assigned use – e.g. nonabsorbent, easily cleaned, properly sealed or protected from the entry of insects or rodents.

Check List

- ☞ Ensure that surfaces and materials are in good condition, smooth and washable. Food contact surfaces must be seamless and non-toxic².
- ☞ Construct and seal the galley so that access for vermin is obstructed.

2.8 Personal Hygiene**WHO Standard 1.8**

Are food-handling areas restricted for this purpose only?

² Toxic food contact areas include surfaces or materials with chemical coatings such as paint.

Check List

- ☞ Only perform food preparation-related tasks in the galley/kitchen.
- ☞ Only grant access to food preparation areas to authorized staff members.

2.9 Drinking WaterWHO Standard 1.9

Is there an adequate supply of safe hot and cold water? Is there hot and cold water provided at all times of food preparation and service?

Check List

- ☞ Equip the galley/kitchen with a hot and cold drinking water supply.
- ☞ Only use drinking water for food preparation and processing.

2.10 Ventilation and Extraction SystemsWHO Standard 1.11

Is exhaust ventilation provided and is it adequate for the equipment and galley staff?

Check List

- ☞ Ensure that ventilation and extraction systems function correctly, are used and are maintained properly.
- ☞ Prevent visible condensation accumulation.

2.11 LightingWHO Standard 1.12

Is adequate lighting provided?

Check List

- ☞ Ensure that galley/kitchen lighting is adequate for the purpose of visually inspecting both products and surroundings for signs of dirt or contamination in food.

3 PANTRY AND STORES

3.1 Structural Condition

WHO Standard 2.1

Are all food storage areas constructed of impervious material with a smooth surface to facilitate cleaning, and not conducive to creating harboring for rodent or insect vectors/hosts?

Check List

- ☞ Ensure that the room is visually clean and structurally sound.
- ☞ Ensure that rooms and materials are finished in smooth and impermeable materials.

3.2 Food Storage

WHO Standard 2.2

Food should be kept in a safe distance (approximately 6" or 15cm) off the deck and protected from the entry of water and other potential contamination.

WHO Standard 2.4

Is the food safe, without adulteration (chemical or other substances), and obtained from sources that comply with applicable local, regional, or country of origin laws and regulations?

WHO Standard 2.5

Storage systems should prevent contamination of food by foreign bodies, dust, harmful fumes, unwanted chemicals and cross contamination between foods.

Check List

- ☞ Store food a minimum of 15cm (6 in) above floor level.
- ☞ Ensure that best-before dates do not expire for products in storage (refrigeration, deepfreeze and dry groceries).
- ☞ Ensure that products/packaging remain undamaged and free from contamination.
- ☞ Ensure that no water can enter the storage area and that no contamination can arise.
- ☞ Cover and seal products such that no contamination with foreign substances, dust, hazardous vapours or undesirable chemicals can occur.
- ☞ Clearly segregate storage for raw and prepared products.

Additional Requirements for Large Ships

WHO Standard 1.2.1

Refrigerated compartments should maintain chilled foods and frozen foods at appropriate temperatures and records should be kept.

WHO Standard 1.2.2

Chemicals or toxic items should be stored in separate and secure facilities and never with or above foodstuffs.

WHO Standard 1.2.3

Food shall be stored in a designated secured space, protected from contamination and infestation.

WHO Standard 1.2.4

Food shall be stored in a clean, dry location, not exposed to splashes, dust or other contamination, and approximately 15 cm/6" in above the deck.

Check List

- ☞ Ensure that cold storage areas (refrigerators, freezers, etc.) are fitted with a thermometer.
- ☞ Ensure that at least one thermometer is present with which to check product temperatures.
- ☞ Store cooled products at or below 4°C (40°F).
- ☞ Store deepfreeze products below –12°C (10°F).
- ☞ Check and record the storage area temperature weekly.
- ☞ Record any discrepancies in the logbook along with the corresponding measures taken and check whether these prove to be effective.
- ☞ Do not store any cleaning materials or similar products in food storage areas.
- ☞ Store products in clean, dry areas.
- ☞ Label products with best-before dates to monitor their shelf life and to prevent them from perishing and contaminating other products.

3.3 Temperature

WHO Standard 2.3

Food should not be exposed to out-of-temperature conditions for any extended period. Examples of typical recommended temperatures for perishable food storage include the following:

WHO Standard 2.3.1

Food to be held hot would typically be placed in a hot-holding apparatus already at a temperature of at least 62.8°C (145°F) and maintained at that temperature until required.

WHO Standard 2.3.2

All perishable food or drink would typically be kept at or below 4°C (40°F) except during preparation or when held for immediate serving after preparation. When such foods are to be stored for extended periods, a temperature of 4°C (40°F) is recommended. Fruits and vegetables would typically be stored in cool rooms. Ideally, meat and fish would typically be maintained at 0 to 3°C (32 to 37°F), milk and milk products at 4°C

(40°F) and fruit and vegetables at 7-10°C (45 to 50°F). For more practical purposes, if there are limited refrigerated spaces, meat and meat products, fish and fish products, milk and milk products and eggs and egg products can be stored at < 5°C (41°F) whilst fruit and vegetables can be stored at < 10°C (50°F).

WHO Standard 2.3.3

Frozen foods would typically be kept below -12°C (10°F).

Check List

- ☞ Keep hot dishes above 60°C (140°F).
- ☞ Store meat, fish, eggs, dairy, meat and fish products, and egg and dairy products below 4°C (40°F).

Store fruit and vegetables (unprocessed) in a cool room between 7°C (44°F) and 10°C (50°F).

- ☞ Store deepfreeze products below -12°C (10°F).
- ☞ Do not keep cooled products above 7°C (44°F) for any longer than 30 minutes.

4 HOLDS

4.1 Holds

WHO Standard 3.1

All holds, particularly those carrying consumable products, should be protected from the entry of water or insect or rodent vectors and any other contamination or infection. Cargo should be observed for evidence of contamination, or spoilage, in the case of consumable products.

Check List

- ☞ Protect holds from weather conditions, water and infestation by vermin and pests. Cargo should be shielded from these factors even in open holds.
- ☞ Check regularly and take adequate measures if signs of perishing, contamination or infestation are detected.

4.2 During Inspection

WHO Standard 3.2

Holds should normally be empty for inspection or when the presence of ballast water or other materials, is of such nature or so disposed as to make a thorough inspection of holds possible.

Check List

- ☞ Ensure that the hold is as empty as possible during an inspection.
- ☞ Store materials in the hold such that they do not hinder a thorough inspection.
- ☞ Ensure that any ballast water present is at such a level that it does not hinder a thorough inspection.

5 QUARTERS, CREW MEMBERS AND OFFICERS

5.1 Layout Requirements for Crew Accommodation

WHO Standard 4.1

Crew member quarters should comply with existing conventions on crew member accommodation contained in ILO conventions related to crew members' accommodation and food and catering. Crew members' quarters should not provide harborage for insects or rodents (Screening of outside cabins should be considered if local infestation of vectors and reservoirs exists), and should be clean and welllit.

Check List

- ☞ Crew accommodation should be implemented in compliance with current ILO C133 conventions³ (1970).
- ☞ Ensure that accommodation areas are kept clean and well maintained.
- ☞ Check regularly and take adequate measures if signs of infestation are detected.
- ☞ Ensure that crew accommodation lighting is adequate for the purpose of visually inspecting surroundings for the presence of dirt or vermin.

³ C133 *Accommodation of Crews Convention ILO, 1970*
<http://www.ilo.org/ilolex/cgi-lex/convde.pl?C133>

6 POTABLE WATER

6.1 Construction and Materials

WHO Standard 5.1

All tanks, hoses, valves and equipment for handling potable water should be exclusively for this purpose and clearly labeled “for potable water only”. Colour coding on piping may also be used.

Check List

- ☞ Use only special-purpose tanks, hoses, valves and equipment that are solely and specifically intended for drinking water purposes.
- ☞ Label drinking water pipes with clearly identifiable markings. This can either be in the ship's working language (e.g. "Drinking Water") and/or by means of colour coding.

6.2 Drinking Water Tanks

WHO Standard 5.2

Potable water tanks should not share a common wall with the hull of the vessel or with tanks or piping containing non-potable water or other liquids or materials.

WHO Standard 5.3

Potable water tanks should be constructed of materials that do not contribute to contaminate the water stored within.

WHO Standard 5.4

Potable water tanks should be located in areas of the vessel where they will not be affected by dirt, insects, rodents or other contamination or excessive heat.

WHO Standard 5.5

Potable water tanks should have an inspection cover for easy inspection and access for cleaning or maintenance, and should be fitted with an independent drainage system.

Check List

- ☞ Ensure that drinking water tanks do not share common walls with other tanks and/or with pipes used for purposes other than drinking water.
- ☞ Prevent cross-contamination of drinking water supplies as a result of tank contamination.
- ☞ Use tank materials that prevent material contamination of potable water, such as stainless steel.
- ☞ Ensure that the drinking water tank's surroundings are kept clean and free from infestation.
- ☞ Position tanks so that contamination from work activities or other environmental factors is not possible. Pipes other than drinking water pipes may not be routed through the tank.
- ☞ Position tanks within rooms such that their temperature remains below 20°C (68°F).
- ☞ Ensure that there is an inspection hatch for inspection, maintenance

- and cleaning purposes.
- ☞ Check for the presence of rust, dirt or contaminants and remove these if found.
- ☞ Fit the tank with a draw-off valve for taking water samples.

Additional Requirements for Large Ships

WHO Standard 2.2.1

Potable water needs to be stored in tanks that are constructed, located and protected as to be safe against any contamination from outside the tank.

WHO Standard 2.2.2

Treatment used should be suitable for the water to be purified from water tank filling by shore or on board production plant and capable of ensuring efficient operation with the production of potable water that conforms to the Guidelines for drinking-water quality 2004 (WHO 2004)⁴ or any relevant competent authority's requirements. If chlorination is being used, it should have effective contact time and provide a measurable free chlorine residual in the tanks being filled.

WHO Standard 2.2.3

If potable water from tanks is piped to technical system endpoints, approved backflow prevention devices should be installed to protect the potable water system.

WHO Standard 2.2.4

Potable water tanks should not share a common wall with the hull or other non-potable water tanks.

WHO Standard 2.2.5

Piping systems carrying non-potable liquids should not pass inside potable water tanks.

Check List

- ☞ Demonstrate that drinking water is pure and uncontaminated.
- ☞ Demonstrate that drinking water inspection results have been recorded in a special-purpose logbook.
- ☞ Check and record the amount of free chlorine in the drinking water after taken on board. Take corrective measures if discrepancies are detected and verify that measures taken prove to be effective.
- ☞ Record the date, time and location that drinking water is taken on board in a logbook.
- ☞ Demonstrate by means of a system diagram that water cannot flow back from other technical systems into the drinking water supply. This can be implemented by means of non-return valves positioned at relevant locations or equivalent systems that prevent return flows.
- ☞ Check that non-return valves are functioning correctly every six months. Record these tests in writing.

⁴ Guidelines for drinking-water quality 2004 (WHO 2004)
http://www.who.int/water_sanitation_health/dwg/gdwg3rev/en/

6.3 Drinking Water Systems

WHO Standard 5.6

Potable water systems should incorporate a halogenation/chlorination system or other means to adequately remove or kill microbes and to remove other contamination.

WHO Standard 5.7

When bunkering water, water quality test reports from the port supply should be requested, and shipboard water quality should be verified regularly. On board test kits are acceptable if they meet Standard Methods for the Examination of Water, when a port water quality report cannot be obtained.

WHO Standard 5.8

Potable water systems should have “backflow” prevention installed.

Check List

- ☞ Ensure that a system has been fitted that is capable of purifying drinking water and removing microbial contamination.
- ☞ Demonstrate by means of quality control reports that drinking water taken on board for storage is of sufficient quality.
- ☞ Record procedures for conducting on board water testing in compliance with established methods for monitoring drinking-water quality⁵.
- ☞ Record water testing results in a logbook.
- ☞ Check visually whether the water is contaminated and take measures if contamination is present. Verify that measures taken prove to be effective.
- ☞ Prevent return flows from other technical systems into the drinking water supply by placing non-return valves or equivalent systems.

6.4 Drinking Water Quality

Additional Requirements for Large Ships

WHO Standard 2.1.1

The quality of drinking water taken from a shore supply should be assessed before being taken on board. Port and local competent authorities should investigate the level of water safety. This investigation should be a routine part of the on board water management procedures. Water quality should be verified at minimum by water quality reports from the port from which the water is taken, or by on board water quality kits which meet Standard Methods for the Examination of Water.

WHO Standard 2.1.2

For ships that produce water with on board evaporators or reverse osmosis systems, these systems should not be operated in polluted areas, harbors, or at anchor.

⁵ *Guidelines for Drinking-Water Quality, Volume 3 – Surveillance and Control of Community Supplies*

http://www.who.int/water_sanitation_health/dwg/gdwg2v1/en/index2.html

WHO Standard 2.1.3

Ships should not take water from suspect shore supplies such as multi-use tank trucks or multi-use barges, but should ensure the trucks and barges are approved or considered satisfactory by the relevant health administration and used for potable water only. The ship water management procedures should ensure that the reception, handling, storage and delivery to ship water systems be carried out under completely sanitary conditions to protect water safety.

WHO Standard 2.1.4

Potable water filling hoses should be constructed and used for this purpose only.

Check List

- ☞ Record procedures for safeguarding the quality of water taken on board the ship.
- ☞ Record water testing results in a logbook. Demonstrate that corrective measures were taken in the event that water did not meet standards.
- ☞ Demonstrate that water taken on board for purification took place in *clean regions*⁶ and not in harbours or when at anchor.
- ☞ Demonstrate how drinking water quality is safeguarded.
- ☞ Ensure that filler hose connectors can only be connected to drinking water hoses. It should not be possible to connect them to any other type of hose.
- ☞ Mark drinking water filler hoses accordingly.

⁶ Clean regions refer to areas at least 12 nautical miles offshore. In practice, account should also be taken of water depth. Water should only be taken on board where the sea bottom is at least 200 m (656 ft) below sea level.

7 SEWAGE

7.1 Sewage System

WHO Standard 6.1

Sewage systems should be secure, leak-proof and isolated from other systems to prevent crosscontamination. Tanks should be of sufficient capacity, without risk of overflow. Sewage treatment plants should be inspected regularly. There should be no discharge in restricted areas (ports) and no discharge to bilge.

Check List

- ☞ Ensure that sewage systems are well constructed and maintained, solid, leak-proof and isolated from other systems.
- ☞ Ensure that the sewage holding capacity is adequate.
- ☞ Prevent leakage and storage overflow.
- ☞ Record regions where sewage may be discharged.
- ☞ Check that the wastewater treatment system functions properly according to the manufacturer's instructions.

8 BALLAST TANKS

Ships carry millions of tons of ballast water all over the world each year. Ballast water is required on unladen ships to ensure that the propeller remains underwater and to provide adequate stability and thus safety. Taking ballast water on board, its transportation and subsequent discharge leads to a mixing of waters from different areas of the world. This can have undesirable consequences. Although ballast water helps ensure a ship's safety at sea, discharging it at locations other than its point of origin can cause environmental and economic problems.

Ballast water contains micro-organisms and pathogens (germs) that can cause considerable damage to other eco-systems if discharged in a habitat different to that in which it originated. Infectious diseases can be spread by pathogenic micro-organisms in ballast water.

8.1 Ballast Water Valves

WHO Standard 7.1

Ballast tanks should have valves set in “off” position and not pose an accidental discharge risk, unless risk assessment had been made and discharge authorized previously by competent port and health authorities, according to the provisions of IHR and the international Convention on Control and Management of Ships Ballast Water and Sediments⁷.

Check List

- ☞ Ballast water valves should be in their CLOSED position.
- ☞ Prevent accidental or unauthorized ballast water discharge.
- ☞ Only discharge ballast water with permission from the local port authority.
- ☞ Proceed in compliance with requirements stipulated by the IHR and the *International Convention on Control and Management of Ship Ballast Water and Sediments* (not yet in force).
- ☞ Show form IMO 868-20⁸ and applicable ship registration.

⁷ *International Convention on Control and Management of Ship Ballast Water and Sediments*

(http://www.imo.org/Conventions/mainframe.asp?topic_id=867)

⁸ The convention concerning ballast water has not yet taken effect. Hence, it is not yet possible to provide this form.

9 SOLID AND MEDICAL WASTE

9.1 Waste Storage

WHO Standard 8.1

Storage areas should be protected against vermin (food waste and dry refuse).

Check List

- ☞ Ensure that waste storage rooms and containers are adequately protected against vermin.

9.2 Medical Waste

WHO Standard 8.2

There should be protected storage of infectious medical waste.

Check List

- ☞ Store medical waste in a separate sealed waste container.
- ☞ Ensure that it is not possible for cross-infection to occur.

Additional Requirements for Large Ships

WHO Standard 3.1

All solid food and medical waste material should be held in a clearly marked space that is identified for this purpose only.

Check List

- ☞ Store waste in special-purpose containers and in areas designated for this sole purpose.
- ☞ Ensure that these waste storage areas and facilities are sealed and protected against infestation by vermin.
- ☞ Mark waste storage areas and facilities using lettering or colours such that it is clear to everyone that a specific area has been designated as such.
- ☞ Ensure that general waste and medical waste is properly segregated. Indicate clearly which area has been designated for which type of waste.

9.3 Waste Disposal

WHO Standard 8.3

Discharge of solid waste, food and medical waste should be undertaken in compliance with international and local regulations and ordinances for discharge.

Check List

- ☞ Medical waste disposal must be performed in compliance with applicable national legislation and regulations⁹.
- ☞ Demonstrate by means of registration and contracts with waste processing companies that waste has been disposed of safely and legally.

9.4 Waste Disposal Plan

Additional Requirements for Large Ships

WHO Standard 3.2

All holding and discharge of waste should be included in written company policies and procedures in a waste management plan. This plan should take into account the local regulations or protocols in place for waste management at the ports visited.

WHO Standard 3.3

Wastes should be discharged under contract to approved waste management firms or agencies.

Check List

- ☞ Demonstrate that a waste management plan is in place.
- ☞ Record in the waste management plan how waste should be stored and disposed of in compliance with this plan.
- ☞ Ensure that the waste management plan is accessible at all times.

⁹ National legislation and regulations concerning waste management include:

- *Besluit voorkoming verontreiniging schepen* [Prevention of Contamination from Ships Decree], (<http://www.milieuom.nl/beslinwerkingringtreding.pdf>)
- Marpol 73/78 (http://www.imo.org/Conventions/contents.asp?doc_id=678&topic_id=258)
- *Wet Milieubeheer – Landelijk Afvalbeheers Plan (LAP)* [Environmental Management Act – National Waste Management Plan] (<http://wetten.overheid.nl/cgi-bin/deeplink/law1/title=WET%20MILIEUBEHEER>)
- *WIP Richtlijnen Infectieus Afval* [Guidelines for Infectious Waste] (<http://www.wip.nl>)

10 STANDING WATER

10.1 Standing Water Locations

WHO Standard 9.1

Standing water can hold insect larvae and should not be present. Areas like lifeboat covers, bilges, scuppers, awnings, gutters, air treatment plants should be inspected when not in use.

Check List

- ☞ Regularly check areas near and around lifeboats, wash ports, drains, gangplanks and air purification systems for standing water.
- ☞ Clear standing water if present.

11 ENGINE ROOMS

11.1 Engine Room

WHO Standard 10.1

Engine rooms should be free of rodents or insects. Engine casings and insulation should be inspected for insect and rodent infestation.

Check List

- ☞ Regularly check the engine room, engine covers and visible insulation material and take corrective measures if there are signs of infestation.

12 MEDICAL FACILITIES

12.1 Medical Rooms and Facilities

WHO Standard 11.1

Areas designated for the examination and treatment of ill crew members should be separate from other crew member activities, well-lit, clean and private. Examination/treatment facilities must be clean and properly maintained, with potable water and hand washing areas. A treatment log should be maintained, as well as accommodation for adequate disposal of sharps and bio-medical waste.

Operational manuals should be in place, according to the complexity of the facility and if qualified medically trained crew members are not present on board, procedures should be in place to contact external support for emergency medical advice services, in case of a health emergency event and/or an outbreak on board.

Check List

- ☞ Ensure that there is a separate room available in which sick crew members can be examined and treated. This may be a provisional area.
- ☞ Fit the room with adequate lighting.
- ☞ Ensure that the room is clean.
- ☞ Ensure adequate privacy.
- ☞ Maintain equipment and working materials so that surfaces remain smooth and washable. This ensures that they can be cleaned properly.
- ☞ Regularly maintain the armamentarium and record this in the logbook. Clean and, if necessary, disinfect the armamentarium after use.
- ☞ Ensure that hand-washing facilities are available with liquid soap, disposable towels and a drinking water supply.
- ☞ Record all medical treatments performed.
- ☞ Ensure that medical equipment instruction manuals are available.
- ☞ Ensure that procedures are in place stating how external medical advice can be sought.
- ☞ Store medical sharps in a certified needle container (e.g. UN certified)
- ☞ Store medical waste in a separate sealed waste container.

Additional Requirements for Large Ships

WHO Standard 5.1.2

Adequate medical equipment and devices should be in good operational and hygiene conditions, operated and maintained according to manufacturer's recommendations.

WHO Standard 5.2.4

There should be adequate hand washing facilities within the examination/treatment areas.

Check List

- ☞ Ensure that equipment is clean, defect and rust-free, and undamaged.

- ☞ Demonstrate that a maintenance plan is in place for medical equipment and systems.
- ☞ Clean and disinfect equipment in compliance with manufacturer's instructions.
- ☞ Equip the medical area with adequate hand-washing facilities including a soap dispenser, disposable hand towels and wastepaper bin, or a hand dryer.

12.2 Performing Medical Procedures

Additional Requirements for Large Ships

WHO Standard 5.2.1

Credentialed medical staff (physician/nurse) or other crew members designated to work in these facilities should be trained for his/her duty in basic medical first aid.

Check List

- ☞ Demonstrate that medical staff are trained in providing first aid.

12.3 Medication

Additional Requirements for Large Ships

WHO Standard 5.3.1

Medications should only be dispensed to passengers or crew by trained and authorized personnel; and adequate records of consumption must be kept.

Check List

- ☞ Medication should only be dispensed by qualified and competent staff members.
- ☞ Record all medication dispensed on an inventory list.
- ☞ Ensure that medication shelf life is not exceeded.
- ☞ Store medication in compliance with pharmaceutical company instructions.

12.4 Illness Registration

WHO Standard 4.2

Crew member illness should be reported in the medical log.

Check List

- ☞ Register all crew member illnesses.

Additional Requirements for Large Ships

WHO Standard 5.2.2

A well organized, legible and up to date medical log should be in place in these facilities. The log should list cases of illness, passengers/crew concerned and any medication dispensed. Log entries should list: 1) first date of clinic visit, name, age, and gender of patient; 2) passenger or crew member designation; 3) crew member position or job; 4) cabin number; 6) date/time of illness onset; 7) illness symptoms; and 8) note regarding specimen collection or other action taken, if applicable.

WHO Standard 5.2.3

The medical log should be available during inspections.

Check List

- ☞ Ensure that medical staff are fully aware of the medical logbook and have access to this log.
- ☞ Record in the logbook which illnesses contracted by which people have been treated, and which medication has been prescribed.
- ☞ Ensure that the logbook is available at all times during an inspection.
- ☞ Use a language in the logbook that is comprehensible for everyone. This must be an internationally spoken language.
- ☞ Keep the logbook up-to-date.
- ☞ Minimum requirements for logbook entries include:
 - 1) Date of patient's first visit to the medical unit including his/her name, age, gender
 - 2) Passenger or crew member
 - 3) Crew member's position
 - 4) Cabin number
 - 5) Start date and time of illness
 - 6) Illness symptoms
 - 7) Notes about any samples or any other relevant actions taken

12.5 Infectious Diseases

WHO Standard 1.10

Do any of the crew members assigned to galley duty exhibit any communicable disease symptoms, like jaundice, diarrhea, vomiting, fever, visibly infected skin lesions or boils or discharge from the nose, eyes or ears?

Check List

- ☞ Record how to respond in the event that a galley staff member exhibits symptoms of an infectious disease or another acute medical problem.
- ☞ Demonstrate that staff are familiar with such agreements.
- ☞ Ensure that staff with symptoms of jaundice, vomiting, diarrhoea, nausea, fever, visible skin infections or sores, or discharge from ears, eyes or nose are prevented from working in the galley/kitchen.

12.6 Patient Confidentiality

Additional Requirements for Large Ships

WHO Standard 5.4.1

Personal medical and other health information concerning passengers, crew or others, maintained in the above records or otherwise, must be processed and maintained confidentially in accordance with applicable laws and regulations.

Check List

- ☞ Treat personal medical information with total confidentiality.
- ☞ Demonstrate that agreements are in place concerning patient confidentiality.
- ☞ Ensure that medical unit staff are fully aware of agreements concerning patient confidentiality.

13 SWIMMING POOLS AND SPAS ON PASSENGER SHIPS

13.1 Technical Requirements

WHO Standard 4.1

Swimming pools and whirlpools should meet the WHO Guidelines for Safe Recreational Water Environments, Vol. 2 Swimming pools, Spas and Similar Recreational Water Environments - 2004¹⁰.

Check List

- ☞ Ensure compliance with requirements as stipulated by WHO *Guidelines for Safe Recreational Water Environments, Volume 2 – Swimming Pools, Spas and Similar Recreational Water Environments, 2004.*
- ☞ Compile a risk analysis including the following:
 - type of swimming pool
 - surrounding area
 - guest behaviour
 - personal responsibilities
 - water clarity
 - potential microbiological or biological hazards
 - potential chemical hazards
 - possible physical and bodily hazards
- ☞ Based on the risk analysis, draft a plan detailing how to manage any potential risks. Minimum requirements for such a plan include:
 - periodic water quality testing
 - cleaning and disinfection
 - maintenance
 - safety

13.2 Water Supplies

WHO Standard 4.2

Swimming pools and whirlpool spas must be supplied with seawater or a potable water supply that passes through an air gap or approved backflow prevention device.

WHO Standard 4.3

No bather should be allowed to use a pool before it goes through a disinfection process where pathogenic microorganisms are removed or inactivated by chemical (e.g. chlorination) or physical (e.g. filtration, UV radiation) means, unless pool is in flow-through, seawater mode, such that they represent no significant risk of infection.

¹⁰ WHO *Safe Recreational Water Environments, Volume 2 – Swimming Pools, Spas and Similar Recreational Water Environments, 2004*
(http://www.who.int/water_sanitation_health/bathing/bathing2/en/)

WHO Standard 4.4

Written or electronic records of operations, disinfection processes and maintenance should be maintained in accordance with manufacturer's recommendations.

Check List

- ☞ Position a non-return valve in swimming pool or spa inlets. This can be implemented by means of an air lock, non-return valve or equivalent system.
- ☞ Disinfect seawater before using this for swimming pools. This can be performed chemically, e.g. using chlorine, or physically, e.g. UV treatment or filtration. Disinfection is not required if the swimming pool or whirlpool has a high-flow pump system that works so well that daily tests show there to be no signs of contamination.
- ☞ Test the water daily for contamination (microbiological, physical and chemical). Record findings in a logbook. Take corrective measures if discrepancies are detected and verify that measures taken prove to be effective.
- ☞ Maintain the swimming pool in compliance with the manufacturer's instructions. Record maintenance activities in a logbook.

14 OTHER AREAS

14.1 Transportation of Animals and Pets

Additional Requirements for Large Ships

WHO Standard 6.1

Sanitary control measures should be in place for all animals and their waste products.

Check List

- ☞ Set clear basic and hygiene-related rules concerning the presence of animals on board. Inform animal owners about the basic and hygiene-related rules in force on board concerning animals.
- ☞ Provide staff members with written instructions about which areas of the ship are off limits to pets and animals.
- ☞ Ensure that animals do not disembark without permission from the destination country's authorities. Animal owners are responsible for all locally required documents.

14.2 Faecal Contamination Incidents

Additional Requirements for Large Ships

WHO Standard 6.2

Faecal accident procedures should be considered for passenger vessels.

Check List

- ☞ If required, draft procedures stating how to respond in the event of a faecal contamination incident.
- ☞ Ensure that all crew members are familiar with these procedures.

14.3 Infestation Control

Additional Requirements for Large Ships

WHO Standard 6.3

Passengers' quarters: all practicable measures should be in place, consistent with the IHR (2005), to permanently keep all passenger accommodation free of sources of infection or contamination, including vectors and reservoirs (i.e. insects or rodent vectors).

Check List

- ☞ Ensure that an Integrated Pest Management (IPM) plan is in place stating how to combat and/or prevent the occurrence of vermin, which locations (potential breeding places and refuge) should be inspected for their presence, and how often this should be carried out.

15 TERMS AND DEFINITIONS

Air Lock

A double airtight lock. An air lock functions in the same way as a canal chamber lock.

Authorized Personnel

Staff members with permission to perform a certain task or access a specific area. For example, galley staff are authorized to enter the galley/kitchen during the preparation of food.

Ballast Water

Ballast water is taken on board to trim the ship and for added stability, thus providing improved safety at sea. It is often turbid water containing all sorts of micro-organisms and it should be assumed that pathogens are also present.

Bilge Water

Water that accumulates from boilers or as a result of leakage.

Cargo Vessel

Freighters or cargo vessels are ships specifically intended for shipping bulk cargo. Cargo vessels can be further subdivided into vessels intended for use on rivers and inland waterways and those for use at sea.

Crew Member

A person working on board a ship.

Food Contact Areas

Surfaces and places in the kitchen that are exposed to food. Examples include work counters and kitchen utensils.

Galley

A ship's onboard cooking area.

GT

Gross Tonnage. The ship's cargo weight expressed in tons.

HACCP

Hazard Analysis Critical Control Points. HACCP is a system for food safety, which ensures that the risk of food infection is reduced to an absolute minimum by means of standards and inspections.

ILO

International Labour Organization.

IPM

Integrated Pest Management. IPM is a set of internationally recognized principles. Its purpose is continuous eradication of vermin from production process, kitchen, catering and other areas where food is consumed. IPM consists of thorough environmental inspections, implementation of an integrated set of measures to eradicate vermin and, if required, the use of alternative methods of combating vermin. Chemical pesticides are only used as a last resort and then only very sparingly.

Maintenance Plan

A plan detailing which parts of a galley/kitchen require maintenance and/or replacement, and how regularly.

Medical Waste

Medical waste can be split into two categories, *hazardous* and *non-hazardous*. Examples of *hazardous* waste include items containing blood, sharps (needles, knives, etc.) and anatomical waste. It is a mandatory requirement that this category of waste be disposed of by certified specialist companies. Examples of *non-hazardous* medical waste include bandages (even if slightly tainted with blood), disposables, pads, syringes without needles and catheters. This waste may be collected and disposed of with normal household waste in regular bin liners.

Passenger Ship

A ship equipped and designed to carry more than 12 persons on board excluding crew members.

Persons On Board

All persons present on board a ship.

Vectors

Vectors are animals that are not necessarily vermin themselves, but may carry or transmit other vermin or pathogenic micro-organisms.

Vermin

Animals that cause a nuisance such as insects or rodents. The most common vermin include rats, mice, cockroaches, pigeons, bed bugs, gnats, mosquitoes and other stinging insects.

WHO

World Health Organization. The WHO is a specialized United Nations organization located in Geneva that aims to monitor healthcare issues worldwide, coordinate healthcare-related activities and promote the health of the world's population in general.