



Ship Sanitation Inspection and Issuance of Ship Sanitation Certificate

Food Safety

Learning Content

- Main hazards and risk factors in relation to food
- Standards and main problems in storage areas
- Standards for galley area
- Hygiene standards for food handlers
- Inspection of food areas



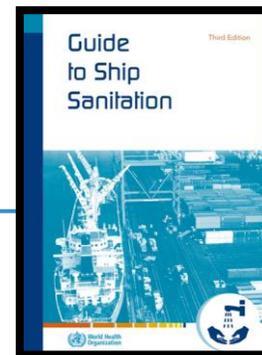
Main Hazards

1. **Biological hazards (bacteria, viruses, fungi and parasites):** Commonly associated with humans and with raw products.
2. **Chemical hazards (e.g. cleaning agents):** Chemical contamination of food may occur “naturally” before loading (aflatoxin, shellfish toxins etc.) or during food processing (e.g. by the misuse of cleaning chemicals or pesticides).
3. **Surfaces, equipment and utensils:** Use of unsuitable surfaces, equipment and utensils (not durable, have toxic effects, not easy to clean etc.)

Table 3-1 Agents associated with foodborne disease outbreaks within ships, 1 January 1970 – 30 June 2003

Pathogen/toxin	Number of outbreaks	Number of passengers and crew members affected
Enterotoxigenic <i>Escherichia coli</i>	8	2670
Invasive <i>Escherichia coli</i>	1	153
Norovirus	4	866
<i>Vibrio</i> spp.	6	1259
<i>Salmonella</i> spp. (non-typhi)	15	1849
<i>Shigella</i> spp.	8	2076
<i>Staphylococcus aureus</i>	2	380
<i>Clostridium perfringens</i>	1	18
<i>Cyclospora</i> spp.	1	220
<i>Trichinella spiralis</i>	1	13
Unknown agent	3	360

Source: Rooney et al. (2004).



<https://www.who.int/publications/i/item/9789241546690>

Area 1 Store - Food Supply

Healthy and clean foods should be supplied to ships from safe sources



Stores – Sanitation Standarts

- Adequate and separate storage facilities (dry, cold)
- Easy-to-clean surfaces and materials
- Free from vectors
- Hand-washing facilities (including liquid soap, paper towels, etc.)
- Adequate ventilation and lighting
- Sufficient drainage system
- Adequate cleaning and maintenance
- Proper packaging
- ‘First in first out’ rule



Stores – Main Problems

- Improper materials and fixtures
- **Food placed on the deck**
- Improper temperatures in cold stores
- **Vectors in stores**
- Improper storage of chemicals
- **Cross-contamination** (eggs, fish, meat and poultry not separated from ready-to-eat foods)



Areas 2 Galley - Main Risks Factors

- **Inadequate temperature control**
- **Infected food handlers**
- **Cross-contamination**
- **Heat treatment of perishable food**
- **Contaminated raw ingredients**
- **Useing non-potable water in the galley**



Galley - Equipment

Equipment must be:

- Durable
- Liquid proof
- Easy to clean
- Smooth
- Stainless
- Non-toxic
- Free from holes
- Prevents dirt accumulation



Equipments:

- Refrigerators
- Freezers
- Blast chillers
- Ice cube machines
- Ovens
- Mixers, slicers
- Washing machines
- Juice/coffee machines
- Others

Galley - Equipment

Food contact surfaces, utensils and equipment

- **At least one dedicated hand-washing station** (preferably in the galley area, with soap, disposable paper towels, waste towel receptacle)
- **At least one dedicated sink for food preparation** (different sinks if necessary and feasible for meat, fish, vegetable)
- **Adequate waste containers** (rodent proof, watertight, non-absorbent, easy to clean).



Galley – Facilities

- **Potable water use in galley**
- **Sink drain with an indirect connection to wastewater system (i.e. an air break) to prevent wastewater backup**
- **Toilet facilities for food-handling crew with hand-washing, handdrying and soap**
- **Adequate ventilation and sufficient lighting**
- **Adequate and effective dishwashing facilities**
- **Readily accessible first-aid box**
- **At least one air temperature thermometer in cold-holding unit, one food probe thermometer in the galley**



Galley - Toilets

- **Enough and clean toilets**
- **Proper ventilation**
- **Washing sink with soap, paper towel, closed trash can**
- **Should not be open directly into food area**



Galley - Ventilation and Lighting

- **Adequate ventilation, no excessive condensation**
- **Sufficient lighting and protected lamps over food areas**



Galley – Food Processing

- **Hand washing regularly**, between different tasks
- Preventing cross-contamination between cooked and raw food
- Discarding expired, spoiled and thawed foods
- **Monitoring temperature** on a regular basis.
- **Cleaning** food contact surfaces and utensils after each use. Careful storage of cleaning chemicals
- Applying **disinfection and vector control** measures
- Implementing waste management



Galley - Cross Contamination

Unintentional transfer of pathogens from one substance to another

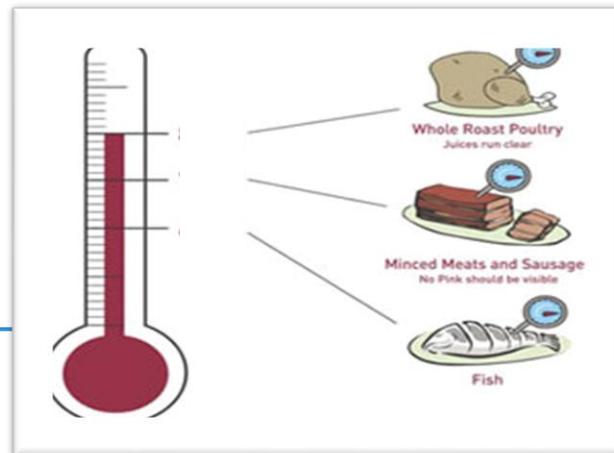
To prevent cross contamination:

- Adequate and separate storage facilities
- Separation of raw and cooked foods
- Clean and disinfect food contact surfaces,
- **Use separate utensils and cutting boards for preparation of raw and ready-to-eat foods.**



Galley - Temperature Control

- The temperature of heating/cooling systems should be monitored and recorded
- **Do not keep food between the dangerous temperature range of 10-60 °C**
- High risk foods should be stored at <math><5^{\circ}\text{C}</math> (41°F)
- Frozen food should be kept at -18°C (-0.4°F) or below
- **Hot foods should be kept for a maximum of 4 hours before being consumed**



Galley - Waste Management

Waste food attracts vectors

- Adequate waste container in food areas
- Waste containers in food-handling spaces closed as much as possible
- **Use containers that are rodent proof, watertight, non-absorbent and easy to clean.**



Galley – Food Handlers

Knowledge

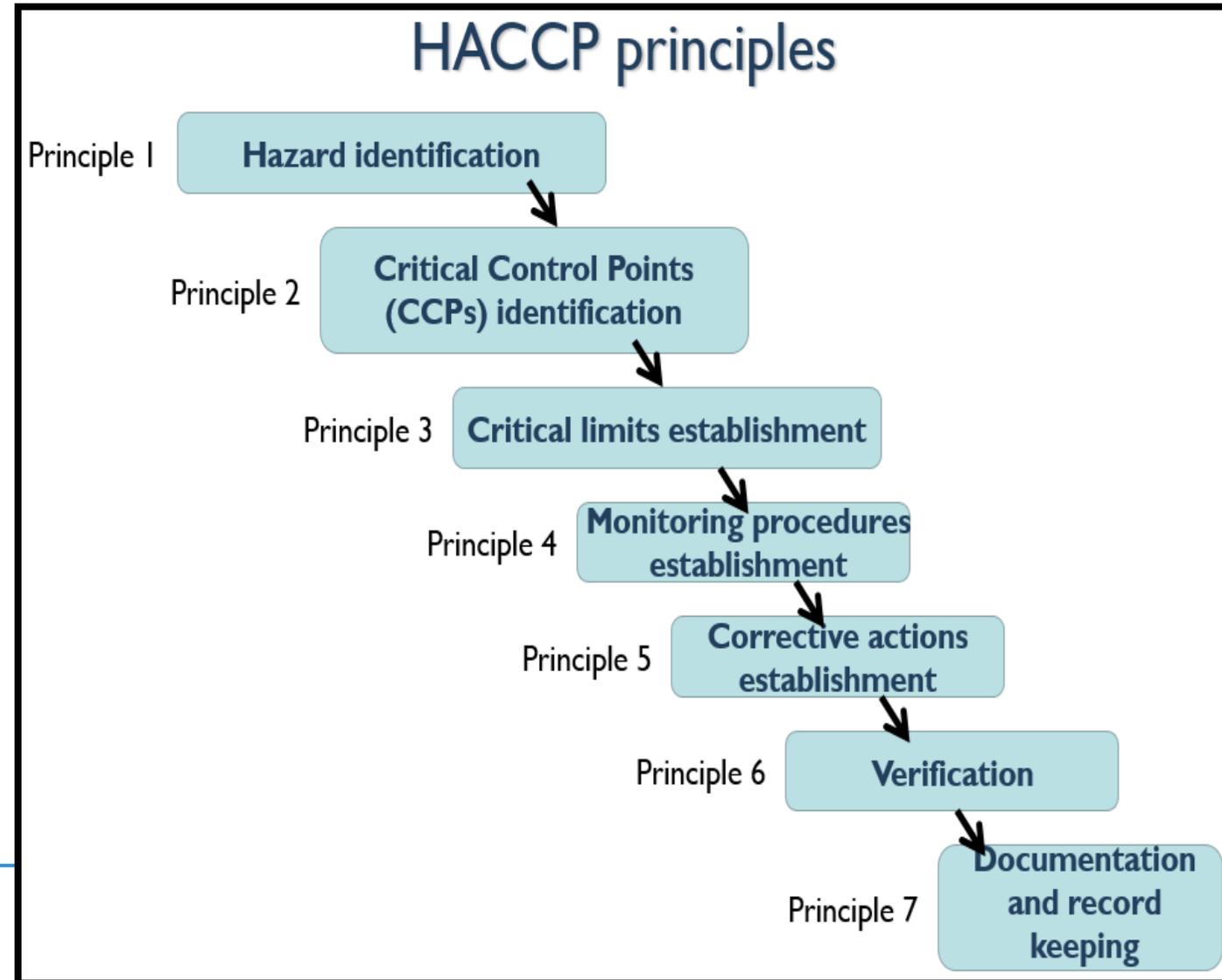
- Food hygiene
- Types and sources of public health risks
- Personal hygiene
- Disease reporting (refrain minimum 48 hours)
- Training on food hygiene

Personal Hygiene

- Clean clothes/aprons
- Cover hair
- Clean and short nails
- Hand washing
- Use of gloves appropriately
- Not smoking in food process

HACCP - Hazard Analysis and Critical Control Points

- A preventive system to identify and **monitor the critical control points** in the food manufacturing and distribution chain.
- A tool for identifying possible hazards at each point of a process
- A systematic preventive approach



Inspection

Inspectors must wash their hands before starting the inspection

Checking:

- Construction, equipment, utensils
- Ventilation and lighting
- Food handlers' personal hygiene
- Cleaning
- Toilet facility
- Waste management
- Pest management
- Storage of hazardous chemicals

Document Review:

- Cleaning schedule and logs
- Purchase and food sources records
- Food storage in and out records
- Temperature records
- Food handlers' training records
- Food handlers' medical permissions
- Pest logbooks
- Food Safety Management Plan
- HACCP records



Stores: Handbook Technical Requirements

3.1 Construction

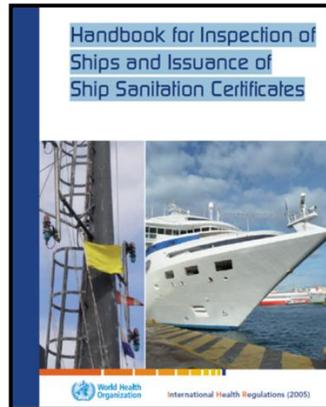
3.2 Cleaning and maintenance

3.3 Food sources

3.4 Storage

3.5 Hazardous material

3.6 Training



2.1 Document and management practices review

2.2 Equipment, utensils and materials

2.3 Facilities

2.4 Food processing

2.5 Hygiene control system

2.6 Personal hygiene

2.7 Cleaning and maintenance

2.8 Food hygiene training

THANK YOU