

CHAPTER 3

Implementing the emergency response plan

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CHAPTER 3

Implementing the emergency response plan

3.1 General

Do what is necessary to manage the situation. Activate the most appropriate contingency plans in the SMS. Tailor decision making to the severity of the emergency by prioritising tasks and using resources where they are most effective. Use the ship's own resources where they will be most effective. Be realistic about what can be achieved before help arrives.

The Master will have a key role in any emergency and needs to be mindful of the limitation of resources on board. Any emergency response personnel become an extension of the crew, and they should be used as necessary to mitigate the situation.

3.2 Safety of personnel



The safety of personnel is paramount, even when assessing or responding to an emergency.

As far as practicable, maintain normal safety precautions and be careful not to expose personnel to any extra risks, such as highly flammable or reactive cargoes. Always assume there are further potential hazards, especially if flammable or toxic vapours have been released or the entry into enclosed spaces is necessary. Maintain command and control communications as far as possible. Issue handheld radios to personnel carrying out vital work and ensure

that everyone is communicating in a common language. Keep everyone on board regularly updated as to the ongoing situation; this will reduce uncertainty and undue concern among the crew, which will enable them to better focus on managing the situation on board.

Ship's personnel will be vulnerable because:

- Natural reactions in an emergency will include fear, anxiety and stress.
- The situation may be confused and complex.
- Key personnel and/or the chain of command may have become disabled or unavailable.
- Communication may be disrupted.
- Sense of urgency may override thoughts for personal safety.
- Routine work planning, risk assessment, permits to work, safety precautions and preplanning may be suspended or not considered fully.
- Usual levels of supervision may be reduced.

3.3 Assess the damage

3.3.1 Assess a hull breach

A hull breach caused by a collision or grounding is likely to adversely affect the stability of the ship.

To check the extent of the damage and any flooding, sound all previously empty compartments and take ullages or soundings of all previously full or partially full tanks.

Compare the current and last recorded values to identify water ingress and tank contents for bunker or cargo loss. Estimate the extent by regularly repeating the tank measurements and calculating inflows and outflows. Assess the need to close and secure all isolation valves on tanks and lines.

Monitor any changes in list, trim and calculated draught and check them against the critical conditions given in the ship's loading computer or stability information booklet.

Ships are normally designed to withstand two breached compartments, which typically happens when an area spanning a watertight bulkhead is damaged.

A damaged ship may suffer additional losses of residual stability and buoyancy as the ship moves in bad weather or when stresses cause the initial damage to extend within the hull structure.

Experts ashore may need to undertake complex damage stability calculations to identify the correct actions necessary to keep the ship intact and afloat. Companies often use these services as part of their emergency response plans.

The Master's initial assessment of the hull and internal structures will be vital to these calculations. If the ship is enrolled in a Class ERS, provide all the relevant information to the company or directly to the ERS.

Other information that shore support will need includes:

- Pre-damage cargo/ballast/bunker fuel stowage plan and draughts.
- Location and extent of damage to tanks, pipelines, pumping systems and other structures.
- Revised cargo/ballast/bunker fuel quantity and disposition.
- Revised draughts, heel and over-side soundings if aground.
- Wind, sea state, current and tidal height, rising/falling.

If the company, ERS or other authorities require further information they will request it, but the above should be kept up to date at all times and made available should it be needed in an emergency situation.

3.3.2 Assess a fire

When there is a fire/explosion, the Master should identify the location of the fire, the factors that will help contain it and any hazards close by that may feed the fire or cause it to spread.

Concentrate the initial assessment on:

- The spread of the fire before it was contained and extinguished.
- Areas that need ongoing cooling to prevent re-ignition.
- Services and systems that remain operable and what is needed to keep them functioning.
- Damage to any safety critical equipment/systems.
- Damage to cabling and electrical installations.

3.3.3 Respond to the potential for flammable vapour emissions

Take particular care if the ship is carrying a cargo that emits flammable vapours. If the emergency has caused flammable vapour to escape, the Master must do everything possible to prevent it from reaching any source of ignition on board or from another ship nearby.

This will involve enforcing the same strict safety procedures used to control emissions during cargo handling and tank work. In addition, assess any damage to electrical systems or equipment that could ignite the vapour and ensure any damaged fittings are isolated.

If the ship is manoeuvrable, position it so that the prevailing wind can blow any vapours clear of the deck and accommodation.

3.4 Action to take when the ship is disabled but still afloat



The safety of personnel is paramount. Any action taken to mitigate the situation should not cause it to deteriorate further or put additional personnel at further risk.

3.4.1 Control accidental flooding

Ships are built to withstand damage to the integrity of two watertight compartments. The steps needed to control flooding in bilged compartments, and their urgency, depend on their location and the extent of the damage.

Losing watertight integrity creates two dangers: loss of buoyancy and reduced stability. At worst, the ship could founder or capsize.

Take action to prevent, reduce or mitigate progressive flooding as it could make the initial effects of the damage worse, further reducing buoyancy and stability. Close and secure all watertight doors and get positive confirmation this action has been completed. If possible, undertake temporary repairs to the damaged bulkheads that separate the compartments from adjacent spaces. The repairs are unlikely to be watertight, but they might reduce the flow to a rate that the ship's pumps can manage.

Any damage causing flooding of the machinery spaces must be dealt with urgently. The consequences of flooding in the machinery spaces can be catastrophic, including:

- Loss of buoyancy, compromising the ship's ability to stay afloat in the conditions.
- Loss of propulsion, power generation capacity and other safety critical equipment/systems.
- Reduced capability of the ship to contain the emergency, e.g. loss of bilge pumps and/or firefighting pumps.
- Loss of the ship.

With any flooding, do what is necessary to preserve and improve buoyancy. Ship designs vary considerably, so referring to the ship's stability information helps to identify the compartments to prioritise.

Steps to take to preserve and improve buoyancy include:

- Activation of emergency bilge pumping arrangements in the engine room, pump room and other spaces.