

SUB-COMMITTEE ON SHIP SYSTEMS AND  
EQUIPMENT  
1st session  
Agenda item 20

SSE 1/INF.8  
10 February 2014  
ENGLISH ONLY

## ANY OTHER BUSINESS

### Development of a Mandatory Code for Ships operating in Polar Waters – chapters 8 and 9

#### Note by the Secretariat

#### SUMMARY

*Executive summary:* This document provides the finalized draft texts of chapters 8 (Fire safety/protection) and 9 (Life-saving appliances and arrangements) of the draft Mandatory Code for Ships Operating in Polar Waters

*Strategic direction:* 5.2

*High-level action:* 5.2.1

*Planned output:* 5.2.1.15

*Action to be taken:* Paragraph 2

*Related documents:* SSE 1/2/2 and SDC 1/26, paragraph 3.57 and annex 3

#### Background

1 The Sub-Committee on Ship Design and Construction (SDC), at its first session, agreed to forward chapter 8 (Fire safety/protection) and paragraphs 9.3.3.3.4.4, 9.3.3.3.4.5 and 9.3.3.4 of chapter 9 (Life-saving appliances and arrangements) of the draft Mandatory Code for Ships Operating in Polar Waters to SSE 1, for consideration of the need for the development of new performance or test standards. The Committee was invited to forward its views directly to MSC 93.

#### Action requested of the Sub-Committee

2 The Sub-Committee is invited to consider the information provided and take action as appropriate.

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## ANNEX

### CHAPTERS 8 AND 9 OF THE DRAFT MANDATORY CODE FOR SHIPS OPERATING IN POLAR WATERS

#### "CHAPTER 8 – FIRE SAFETY/PROTECTION

##### 8.1 Goal

The goal of this chapter is to ensure that fire safety systems and appliances are effective and operable, and that means of escape remain available so that persons on board can safely and swiftly escape to the lifeboat and liferaft embarkation deck under the expected environmental conditions.

##### 8.2 Functional requirements

8.2.1 In order to achieve the goal set out in paragraph 8.1 above, the following functional requirements are embodied in the regulations of this chapter as appropriate:

- .1 all components of fire safety systems and appliances if installed in exposed positions shall be protected from ice accretion and snow accumulation;
- .2 local equipment and machinery controls shall be arranged so as to avoid freezing, snow accumulation and ice accretion and their location to remain accessible at all time;
- .3 the design of fire safety systems and appliances shall take into consideration the need for persons to wear bulky and cumbersome cold weather gear, where appropriate;
- .4 means shall be provided to remove or prevent ice and snow accretion from accesses; and
- .5 extinguishing media shall be suitable for intended operation.

8.2.2 For ships intended to operate in low air temperature, the following apply:

- .1 all components of fire safety systems and appliances shall be designed to ensure availability and effectiveness under the polar service temperature;
- .2 materials used in exposed fire safety systems shall be suitable for the polar service temperature and service; and
- .3 all two way portable radio communication equipment shall be operable at the polar service temperature.

##### 8.3 Regulations

8.3.1 In order to comply with the requirement of paragraph 8.2.1.1, isolating and pressure/vacuum valves in exposed locations are to be protected from ice accretion and remain accessible at all time.

8.3.2 In order to comply with the requirement of paragraph 8.2.1.2 the following apply:

- .1 fire pumps including emergency fire pumps, water mist and water spray pumps shall be located in compartments maintained above freezing;
- .2 the fire main is to be arranged so that exposed sections can be isolated and means of draining of exposed sections shall be provided. Fire hoses and nozzles need not be connected to the fire main at all times, and may be stored in protected locations near the hydrants;
- .3 firefighter's outfits shall be stored in warm locations on the ship; and
- .4 where fixed water-based firefighting systems are located in a space separate from the main fire pumps and use their own independent sea suction, this sea suction is to be also capable of being cleared of ice accumulation.

8.3.3 In order to comply with the requirement of paragraph 8.2.2.1, portable and semi-portable extinguishers shall be located in positions protected from freezing temperatures, as practicable. Locations subject to freezing are to be provided with extinguishers capable of operation under the polar service temperature.

8.3.4 In order to comply with the requirement of paragraph 8.2.2.2, materials used in exposed fire safety systems shall be suitable for the polar service temperature and service.

## **CHAPTER 9 – LIFE-SAVING APPLIANCES AND ARRANGEMENTS**

### **9.1 Goal**

The goal of this chapter is to provide for safe escape, evacuation and survival.

### **9.2 Functional Requirements**

In order to achieve the goal set out in paragraph 9.1 above, the following functional requirements are embodied in the regulations of this chapter, as appropriate:

#### **9.2.1 *Escape***

9.2.1.1 Exposed escape routes shall remain accessible and safe, taking into consideration the potential icing of structures and snow accumulation.

9.2.1.2 Survival craft and muster and embarkation arrangements shall provide safe abandonment of ship, taking into consideration the possible adverse environmental conditions during an emergency.

#### **9.2.2 *Evacuation***

9.2.2.1 All life-saving appliances and associated equipment shall be functional under [the polar service temperature] and under the possible adverse environmental conditions during the maximum expected time of rescue.

9.2.2.2 Ships shall have means to ensure safe evacuation of persons, including safe deployment of survival equipment, when operating in ice covered waters, or directly onto the ice, as applicable.

### **9.2.3 Survival**

9.2.3.1 Adequate thermal protection shall be provided for all persons on board, taking into account the intended voyage, the anticipated weather conditions (cold and wind), and the potential for immersion in ice covered water, where applicable.

9.2.3.2 Life-saving appliances and associated equipment shall take account of the potential of operation in long periods of darkness, taking into consideration the intended voyage.

9.2.3.3 Taking into account the presence of any hazards, as identified in section 1 (Introduction), resources shall be provided to support survival following abandoning ship, whether to the water, to ice or to land, for the maximum expected time of rescue. These resources shall provide:

- .1 a habitable environment;
- .2 protection of persons from the effects of cold, wind and sun;
- .3 space to accommodate persons equipped with thermal protection adequate for the environment;
- .4 means to provide sustenance;
- .5 safe access and exit points; and
- .6 means to communicate with rescue assets.

## **9.3 Requirements**

### **9.3.1 Escape**

In order to comply with the functional requirements of paragraph 9.2.1.1 above, the following apply:

- .1 for ships exposed to ice accretion, means shall be provided to remove or prevent ice and snow accretion from escape routes, muster stations, embarkation areas, survival craft, its launching appliances and access to survival craft;
- .2 exposed escape routes shall be arranged so as not to hinder passage by persons wearing suitable polar clothing; and
- .3 For ships intended to operate in low air temperatures, adequacy of embarkation arrangements shall be assessed, having full regard to any effect of persons wearing additional polar clothing.

### **9.3.2 Evacuation**

In order to comply with the functional requirements of paragraph 9.2.2.1 above, the following apply:

- .1 where the functional requirements of this chapter are achieved by means of adding devices requiring a source of power, this source shall be able to operate independently of the ship's main source of power.

### **9.3.3 Survival**

9.3.3.1 In order to comply with the functional requirements of paragraph 9.2.3.1 above, the following apply:

- .1 for passenger ships, a proper sized immersion suit or a thermal protective aid shall be provided for each person on board; and
- .2 where immersion suits are required, they shall be of the insulate type.

9.3.3.2 In order to comply with the functional requirements of paragraph 9.2.3.2 above, ships intended to operate in extended periods of darkness, searchlights suitable for continuous use to facilitate operation in ice shall be provided for each lifeboat.

9.3.3.3 In order to comply with the functional requirements of paragraph 9.2.3.3 above, the following apply:

- .1 no lifeboat shall be of any type other than partially or totally enclosed type; and
- .2 an assessment shall consider the need for ships to be provided with survival resources for use following abandonment, onto ice or land to maximize the probability of survival for the expected time of rescue.
- .3 Taking into account the assessment referred to in paragraph .2 above, appropriate survival resources, which address both individual (personal survival equipment) and shared (group survival equipment) needs, shall be provided, as follows:
  - .1 life-saving appliances and group survival equipment that provide effective protection against direct wind chill for all persons on board;
  - .2 personal survival equipment in combination with life-saving appliances or group survival equipment that provide sufficient thermal insulation to maintain the core temperature of persons subject to the minimum temperatures anticipated for the voyage; and
  - .3 personal survival equipment that provide sufficient protection to prevent frostbite of all extremities under the minimum temperatures anticipated for the voyage.
- .4 Whenever the assessment referred to in paragraph 9.3.3.3.1 identifies a potential of abandonment onto ice or land, the following apply:
  - .1 group survival equipment shall be carried, unless an equivalent level of functionality for survival is provided by the ship's normal life-saving appliances;

- .2 when required, personal and group survival equipment sufficient for 110% of the persons on board shall be stowed in easily accessible locations, as close as practical to the muster or embarkation stations;
- .3 containers for group survival equipment shall be designed to be easily movable over the ice and be floatable;
- .4 Whenever the assessment identifies the need to carry personal and group survival equipment, means shall be identified of ensuring that this equipment is accessible following abandonment;
- .5 If carried in addition to persons, in the survival craft, the survival craft and launching appliances shall have sufficient capacity to accommodate the additional equipment;
- .6 Passengers and the special personnel, if any, shall be instructed in the use of the personal survival equipment and the action to take in an emergency; and
- .7 The crew shall be trained in the use of the personal survival equipment and group survival equipment.

9.3.3.4 In order to comply with the functional requirements of paragraph 9.2.3.3.4 above, adequate emergency rations shall be provided."

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