

SUB-COMMITTEE ON SHIP DESIGN AND
EQUIPMENT
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**DEVELOPMENT OF A MANDATORY CODE FOR SHIPS OPERATING IN
POLAR WATERS**

Life-saving appliances on ships operating in polar waters

Submitted by Iceland

SUMMARY

Executive summary: This document comments on the present draft provisions of chapter 8 of the Polar Code. The present provisions may not be effective enough to mitigate the specific hazards which may be encountered when operating in polar waters and which have previously been identified. The functional requirements listed in the present draft document are difficult to incorporate to and align with the very specific provisions of the SOLAS Convention and the LSA Code. The provisions of the Polar Code with respect to requirements to life-saving arrangements should not be subject to wide scope of interpretations. The provisions should provide the required level of safety for survivors both during evacuation and after evacuation and ship abandonment in polar climate.

Strategic direction: 5.2

High-level action: 5.2.1

Planned output: 5.2.1.19

Action to be taken: Paragraph 18

Related documents: Resolution A.1024(26) and DE 57/11/6

General

1 The DE Sub-Committee has been assigned the task of developing a mandatory Polar Code covering the specific safety and environmental aspects of maritime operations in polar waters. This task involves the development of functional and technical requirements to life-saving appliances and arrangements, taking into consideration the particular hazards which have been identified and which may be expected when operating in polar waters.

2 The safety provisions of the Polar Code, which are presently under development, are envisaged as "add-on" requirements to existing SOLAS and MARPOL requirements in the first phase of the development of a regulatory regime for maritime operation in polar waters.

3 The requirements for life-saving appliances and arrangements when operating in polar waters is covered in chapter 8 of the present draft code, in terms of functional requirements.

4 The functional requirements for the carriage of life-saving appliances and arrangements in the present provisional draft to a Polar Code are contradictory to the very deterministic and specific life-saving requirements of the SOLAS Convention. Due to the vague expressions of the functional requirements in the present draft, there is wide room for interpretations, even interpretations which may not be consistent with the overall goal of the Polar Code.

Specific safety hazards related to maritime operation in polar waters

5 The specific safety hazards related to maritime operation in polar waters have been identified. The cold climate, darkness and remoteness are identified as some of the main hazards that need to be addressed when defining the functional requirements, on which the new provisions should be based.

6 Although the climate conditions within the high polar waters are of such nature that icing and strong winds are not frequent, the waters that encircle the polar waters are of such character. Thus, in addition to the hazards listed in paragraph 5 above, due consideration should be given to hazards like strong winds, icing and sea-spray together with low air and sea temperature when addressing requirements to life-saving appliances and arrangements intended for operation in polar waters.

7 Survivors in lifeboats and liferafts, after a casualty in polar waters, should be expected to spend longer time on board such survival craft than is considered normal for survivors in most other parts of the world. Additionally, they will be exposed to climate conditions that are much more demanding and which require specific mitigating measures such as proper clothing, immersion suits or heating appliances in order to prevent hypothermia. Thus, the provisions of the Polar Code with respect to life-saving appliances should include specific requirements that effectively meet these specific conditions.

Requirements for life-saving appliances and arrangements on ships operating in polar waters

8 Problems may arise when adding pure functional requirements of the Polar Code to the well-established deterministic and in some aspects quite specific requirements of SOLAS and the LSA Code on life-saving appliances and arrangements. Thus, great caution should be taken when drafting functional requirements for life-saving appliances and arrangements as part of the Polar Code. The provisions of the Polar Code must be specific enough to provide the required level of safety.

9 The requirements of SOLAS and the LSA Code should be defined as the basic minimum requirements applicable to all SOLAS ships operating in polar waters.

10 In the present draft Polar Code the provisional functional requirements for life-saving appliances and arrangements have been set out in chapter 8. The present provisional functional requirements, as drafted, do not sufficiently address the hazards identified and listed above. The requirements for life-saving appliances and arrangements of the Polar Code should, in order to address the above-mentioned hazards, be addressed more precisely. They should depend on the type of vessels concerned, (i.e. cargo vessel/passenger ship), vessel category, (A, B or C) and the vessel's operational permit as defined in the ship's PWOM, such as the minimum ambient temperature in which the vessel is permitted to operate.

11 The table in the annex to this document outlines a proposal for requirements for life-saving appliances and arrangements for different ship types, ship categories and the maximum permitted operational ambient temperature defined in the ship's PWOM.

12 SOLAS requirements for life-saving appliances should in general apply for ships of category C operating in polar waters if and when they are operating in an ice-free area and at ambient temperatures exceeding or above 0°C. However, taking into consideration a simultaneous effect of rain and wind and the risk of a lengthy stay in a survival craft before recovery, survival crafts of passenger ships should be of totally closed type, unless the requirements of paragraph 16 below are met.

13 For ships of category C, permitted by their PWOM to operate at ambient temperature below 0°C, their primary life-saving equipment should comprise a sufficient number of totally enclosed lifeboats on each side, of such aggregate capacity as will accommodate not less than 50 per cent of the total number of persons on board. Additionally, and as a secondary means of life-saving appliance, such ships should be required to carry inflatable liferafts of sufficient aggregate capacity and of a type specially designed for Polar conditions, i.e. meeting the same principal requirements as the life inflatable liferafts approved by the Icelandic Maritime Administration for installation on board Icelandic fishing vessels (see document DE 57/INF.9 on inflatable liferafts designed for polar conditions/operation). Inflatable liferafts intended for use at climate temperatures below 0°C should as a minimum have insulated bottom and canopy construction.

14 Ships of category A and B should meet the requirements of ships of category C operating at an ambient temperature below 0°C. Additionally, such ships should be required to carry davit launched lifeboats of such construction that they can be lowered into the water or onto ice fully loaded. Furthermore, inflatable liferafts should be required to be of the davit-launched type in accordance with SOLAS regulations in order to allow soft lowering onto ice.

15 Equipment required to be carried on board inflatable liferafts should also be subject to consideration with respect to the parameters given above, reflecting the specific hazards.

16 Lifeboats and liferafts on ships permitted to operate at temperatures below 0°C should be required to carry additional heat insulation and means for heating of air inside the lifeboat and the liferaft of such capacity as to maintain inside air temperature of at least 0°C at ambient temperature of -30°C, unless protective insulated immersion suits or similar clothing are provided for every person on board.

17 Measures should be provided and implemented to prevent life-saving equipment to be clogged with ice so that the equipment is always ready for operation in emergency, and which avoids damages caused from actions connected to the removal of ice.

Action requested of the Sub-Committee

18 The Sub-Committee is invited to note the information provided and the proposal to review the provisional requirements of chapter 8 of the present draft Code in order to provide the required level of safety.

ANNEX

**REQUIREMENTS FOR LIFE-SAVING EQUIPMENT AND ARRANGEMENTS
ON SHIPS OPERATING IN POLAR WATERS**

Category	The ambient temperature permitted acc to PWOM	Cargo ships	Passenger ships	Comments
C	> 0°C	SOLAS requirements and the requirements of the LSA Code; i.e. lifeboats and liferafts as required in SOLAS	SOLAS requirements and the requirements of the LSA Code; i.e. lifeboats and liferafts as required in SOLAS, except that Lifeboats shall be of totally closed type.	Category C ships permitted only to operate at ambient temperatures of 0°C or above.
C	0 - (-30)°C	<p>1. The primary survival craft should be totally enclosed lifeboats;</p> <p>2. The secondary survival craft shall be Inflatable liferafts of similar construction as the Icelandic type.</p>	<p>1. The primary survival craft shall be totally enclosed lifeboats;</p> <p>2. The secondary survival craft shall be Inflatable liferafts of similar construction as the Icelandic type.</p>	Category C ships permitted to operate at ambient temperatures below 0°C. The survival crafts and the equipment to be carried onboard survival crafts shall be certified and fully operational at -30°C. Thermal heating or protective clothing.
A, B and (C< -30°C)		<p>1. Davit launched totally closed and insulated lifeboats, designed to remain in upright position when lowered onto ice covered surface. Mechanical means for heating regardless of the boat being waterborne or not.</p> <p>2. Davit-launched inflatable liferafts of Polar type, i.e. type-approved for operation at temperatures below -30°C.</p>	<p>1. Davit launched totally closed and insulated lifeboats, designed to remain in upright position when lowered onto ice covered surface. Mechanical means for heating regardless of the boat being waterborne or not.</p> <p>2. Davit-launched inflatable liferafts of Polar type. i.e. type-approved for operation at temperatures below -30°C.</p>	This applies to Category A and B ships and for ships of category C permitted to operate at temperatures below -30°C. The survival crafts and the equipment to be carried onboard survival crafts shall be certified and fully operational at the minimum operational temperature defined in PWOM. Thermal heating and protective clothing.