



▶ SAFETY MEASURES FOR YACHTS OPERATING IN POLAR WATERS

SHIPOWNERS

The Maritime Safety Committee (MSC) of the International Maritime Organization (IMO) at its 107th session adopted the resolution MSC.538(107). This resolution amended the [Polar Code](#) to mandate navigation and voyage planning requirements for certain non-SOLAS ships operating in polar waters. The amendments will enter into force on 1 January 2026 and will be applicable to the following types of non-SOLAS ships for voyages within polar water¹.

- (a) fishing vessels of 24 meters in length overall and above;
- (b) pleasure yachts of 300 gross tonnage and upwards not engaged in trade; and
- (c) cargo ships of 300 gross tonnage and upwards but below 500 gross tonnage.

In this advisory, referencing [MSC.1/Circ.1642](#) (Guidelines for Safety Measures for Pleasure Yachts of 300 Gross Tonnage and Above Not Engaged in Trade Operating in Polar Waters), we highlight some of the common risks areas associated with operating in polar regions to assist our Yacht Members with their risk mitigation. To obtain a full view, Members should refer to the full document if they have applicable vessels trading or scheduled to trade in polar waters.

UNIQUE HAZARDS

When operating in Polar regions, vessel may be subjected to unique environmental and operational circumstances. It is imperative that seafarers must undergo specialised training to understand and operate in these unique conditions. Some of these are listed below together with potential aspects that they may affect and measures thereby to be adopted:

1. Ice:

- hull structure (accretion)
- stability characteristics
- machinery systems
- navigation
- outdoor working environment
- maintenance plans / schedules
- emergency preparedness tasks; and
- safety equipment and systems

2. Low temperatures in the working environment:

- human performance
- emergency preparedness
- material properties
- equipment efficiencies
- survival time in the water

¹ Polar waters include both Arctic waters and the Antarctic area; definitions of which is available in MSC.1/Circ.1642

3. Operating in High Latitudes/Remote Locations:

- Communication systems -
 - Performance and availability of standard navigation and communication systems may be affected.
 - Accuracy and availability of weather information.
- Remoteness can impact the promptness of response to incidents. It is important for organisations and authorities operating in remote areas to have contingency plans, robust communication systems, and strategies in place to address these challenges and ensure effective response and safety measures.
- Extended periods of darkness can affect human performance in various ways, resulting in decreased cognitive performance, difficulty in concentrating, and reduced productivity.

4. Lifesaving appliances and arrangements requirements:

- Components of life-saving appliances should be designed to ensure availability and effectiveness under polar conditions.
- It must be ensured that categories of life-saving equipment are appropriate for a voyage where it is anticipated to encounter mean daily temperatures below 0°C.
- Protective clothing made of thermal insulating materials to be provided.
- Insulated immersion suits should be carried.
- Training in the use of all emergency equipment, as appropriate, to be carried out.
- Personal Survival Kits (PSKs) should be stored so that they may be easily retrieved in an emergency and should not be opened for training purposes. The contents of PSKs should be reviewed no less frequently than annually.
- Group Survival Kits (GSKs) should be carried whenever a voyage is anticipated to encounter ice conditions which may prevent the lowering and operation of survival craft.
- GSKs should be stored so that they may be easily retrieved and deployed in an emergency. Containers should be designed to easily moved over the ice and be floatable.
- Sufficient PSKs and GSKs (as applicable) should be carried to cover at least 110% of the persons on board.
- Dedicated training equipment to enhance familiarisation of Personal and Group Survival Kits (PSK/GSK) to avoid compromising the performance of the emergency equipment itself.

5. Fire Safety:

- Maintaining fire-extinguishing systems in low temperatures requires special considerations to ensure their effectiveness. This can be achieved through regular maintenance, checks and inspections to ensure that all components of the fire-extinguishing system are functioning properly and are prepared for low temperature conditions.
- The manufacturer of the fire- system may have specific guidelines or precautions to follow to prevent freezing or seizing of firefighting / extinguishing systems in low temperatures. Following such instructions will help ensure the effectiveness and reliability of the system in cold conditions.
- It is important to store fire extinguishers in a location where they are protected from extreme temperatures to ensure their proper functioning in case of an emergency.
- Regarding the fire pumps and associated equipment, it is recommended to have a fixed or alternative water-based fire-extinguishing system in a separate space from the compartment containing the main fire pumps which utilizes its own independent sea suction.
- Additionally, it is important to ensure that the compartment housing the fire pumps and associated equipment is heated and protected from freezing.
- Isolating valves should be located in a position that is easily accessible for maintenance and operation purposes. However, they should also be protected from freezing spray to prevent

icing, which can hinder their functionality. There should be a fixed/alternative water-based fire-extinguishing system in a space separate from the compartment containing the main fire pumps, which utilizes its own independent sea suction.

- To ensure that hydrants remain operable under all anticipated temperatures, several design and positioning considerations such as Frost-free design, proper drainage, accessibility, protection from extreme temperatures should be considered together with regular maintenance.
- Hydrants should be equipped in a way that ensures their efficient operation in various temperature conditions such as a two-handle valve.
- To allow the effectiveness of portable and semi-portable extinguishers and hydrants, they should be located in positions that are practical and away from freezing temperatures.
- Yachts should contain, firefighters' outfits, including one spare, that should be readily available and stored in warm positions as widely separated as practical.

6. Emergency contingency plans, drills and evacuation:

- Emergency drills should be carried out regularly so that crew are familiar with emergency procedures, duties and to verify that they are capable to carry out duties designated to them.
- Each crew member on board should be given instructions which should include:
 - symptoms of cold shock
 - first-aid treatment of hypothermia
 - first-aid procedures
 - location and use of life-saving appliances in severe weather/conditions on the ice
- Evacuation drill scenarios should include abandoning ship either into the water or onto the ice, or a combination of the two. Each such drill should also include, checking that all persons are suitably dressed, donning of immersion suits or thermal protective clothing, testing of emergency lighting, instructions on the use of vessel's life-saving appliances in varying conditions and rescue boat drills.

7. Factors that may adversely affect machinery:

- Ice accretion and/or snow accumulation, ice/snow ingestion at seawater/ventilation inlets and low sea water temperature may result in the freezing or increased viscosity of liquids and loss of performance of on-board machinery, battery or other stored energy devices.

8. Navigating in Polar Waters:

- To account for the fact that high altitude conditions may affect their performance, the navigational equipment should be designed, constructed and installed to retain their functionality under polar conditions.
- Equipment needed:
 - Two non-magnetic means to determine and display yacht heading
 - A speed and distance measurement system
 - Minimum of two independent echo-sounding devices
 - Minimum of two independent radar systems, one of which should operate in the 3GHz (10cm, S- Band) frequency range.
 - Radar plotting system operating in both the sea and the ground-stabilized modes
 - Electronic position fixing system
 - A global navigation satellite system (GNSS) (GPS or GLONASS or equivalent)
 - Automatic identification system (AIS)

- Rudder angle indicator, for each rudder on yacht
- Minimum two suitable searchlights - The installation of a searchlights is crucial for safe and efficient docking, astern manoeuvres, and emergency towing operations. It provides essential visibility and enhances the overall manoeuvrability of the vessel in challenging conditions. The lights should also be equipped with de-icing systems to prevent the buildup of ice and ensure proper functionality.
- Visual enhancement equipment i.e., windows fitted with efficient means of clearing melted ice, freezing rain, snow, mist and spray.

Reference should also be made to [MSC.1/Circ.1612](#) - Guidance for navigation and communication equipment intended for use on ships operating in polar waters

Members may also refer to the following for more guidance on operations in Polar Waters:

[IMO in the polar environment: the Polar Code explained - YouTube](#)

[IMO in the polar environment: Search and Rescue - YouTube](#)