

Establishing a Polar network or polar fraternity

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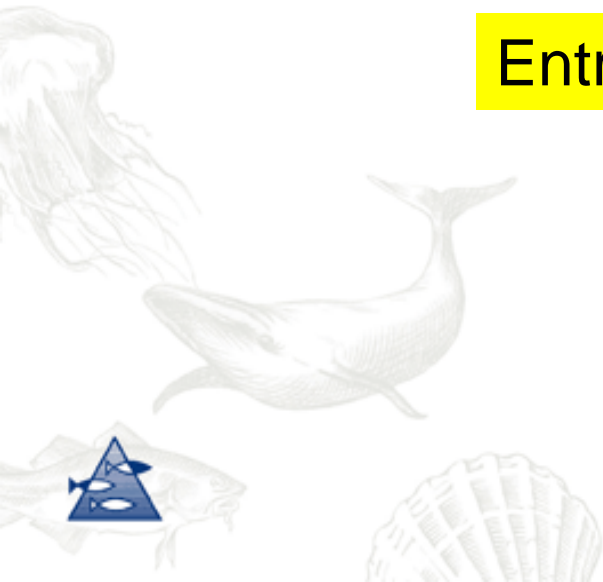
MSC 94/21/Add.1
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ANNEX 6

RESOLUTION MSC.385(94)
(adopted on 21 November 2014)

INTERNATIONAL CODE FOR SHIPS OPERATING IN POLAR WATERS (POLAR CODE)

Entry in to force on 1 January 2017



Introduction, Section 3 -Sources of hazards

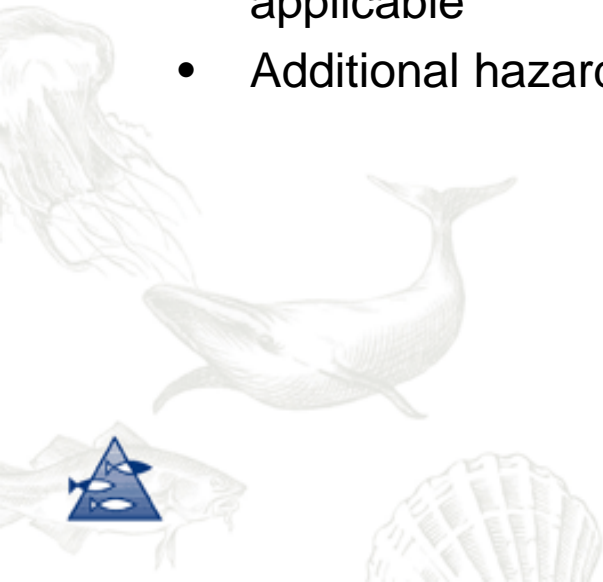
1. **Ice**, as it may affect hull structure, stability characteristics, machinery systems, navigation, the outdoor working environment, maintenance and emergency preparedness tasks and malfunction of safety equipment and systems.
2. **Topside icing**, with potential reduction of stability and equipment functioning.
3. **Low temperature**, as it affects the working environment and emergency preparedness tasks, material properties and equipment efficiency, survival time and performance of safety equipment and systems.
4. **Extended periods of darkness or daylight** as it may affect navigation and human performance.
5. **High latitude**, as it affects navigation systems, communication systems and the quality of ice imagery information.
6. **Remoteness** and possible lack of accurate and complete hydrographic data and information, reduced availability of navigational aids and seamarks with increased potential for groundings compounded by remoteness, limited readily deployable SAR facilities, delays in emergency response and limited communications capability, with potential to affect incident response.
7. **Potential lack of ship crew experience in polar operations**, with potential for human error.
8. **Potential lack of suitable emergency response equipment**, with the potential for limiting the effectiveness of mitigation measures.
9. **Rapidly changing and severe weather conditions**, with the potential for escalation of incidents.
10. **The environment with respect to sensitivity** to harmful substances and other environmental impacts and its need for longer restoration.

The risk level within polar waters may differ depending on the geographical location, time of year with respect to daylight, ice-coverage etc. Thus the mitigation measures required to address the above specific hazards may vary within polar waters and may be different in Arctic and Antarctic waters.



1.5 Operational assessment

- In order to establish procedures or operational limitations, an assessment of the ship and its equipment shall be carried out, taking into account the following:
- The anticipated range of operating and environmental conditions, such as:
 - Operation in low temperature
 - Operation in ice
 - Operation in high latitude
 - Potential for abandonment on ice or land
- Sources of Hazards as listed in Section 3 of the Introduction, as applicable
- Additional hazards, if identified (Polar bears?)



Chapter 2 – Polar Water Operational Manual (PWOM)

2.3.3 The Manual shall include risk-based procedures for the following:

- Voyage planning to avoid ice and/or temperatures that exceed the ship's design capabilities or limitations.
- Arrangements for receiving forecasts of the environmental conditions.
- Means of addressing any limitations of the hydrographic, meteorological and navigational information available.
- Operation of equipment required under other chapters of the Polar Code.
- Implementation of special measures to maintain equipment and system functionality under low temperatures, topside icing and presence of sea ice, as applicable.

2.3.4 The Manual shall include risk-based procedures to be followed for:

- Contacting emergency response providers for salvage, search and rescue (SAR), spill response etc, as applicable.
- In the case of ships ice strengthened, procedures for maintaining life support and ship integrity in the event of prolonged entrapment by ice.

2.3.5 The Manual shall include risk-based procedures to be followed for measures to be taken in the event of encountering ice and/or temperatures which exceed the ships's design capabilities or limitations.

2.3.6 The Manual shall include risk-based procedures for monitoring and maintaining safety during operations in ice, as applicable, including any requirements for escort operations or icebreaker assistance. Different operational limitations may apply depending on whether the ship is operation independently or with icebreaker escort. Where appropriate, the PWOM should specify both options.



Chapter 8 – Life saving appliances and arrangements

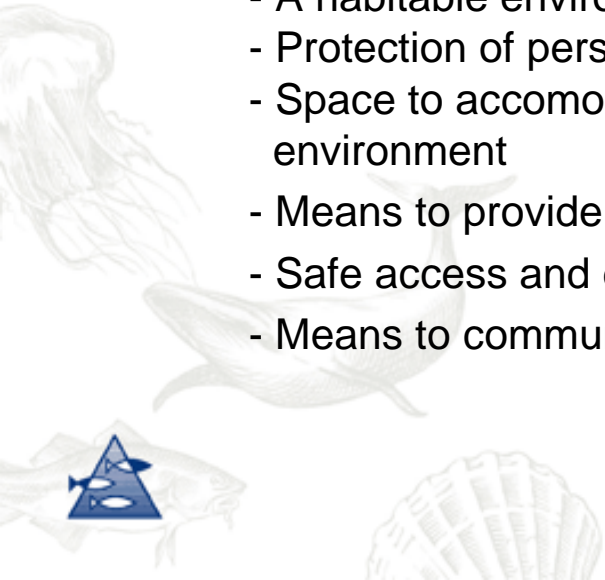
8.2.3.1 Adequate thermal protection shall be provided for all persons on board, taking into account the intended voyage, the anticipated weather conditions (cold and wind), and the potential for immersion in polar water, where applicable.

8.2.3.2 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.

8.2.3.3 Taking into account the presence of any hazards, 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:

- A habitable environment
- Protection of persons from the effects of cold, wind and sun
- Space to accommodate persons equipped with thermal protection adequate for the environment
- Means to provide sustenance
- Safe access and exit points
- Means to communicate with rescue assets



Suggested survival equipment

Personal survival kit

Suggested Equipment
Protective clothing (hat, gloves, socks, face and neck protection, etc.)
Skin protection cream
Thermal protective aid
Sunglasses
Whistle
Drinking mug
Penknife
Polar survival guidance
Emergency food
Carrying bag

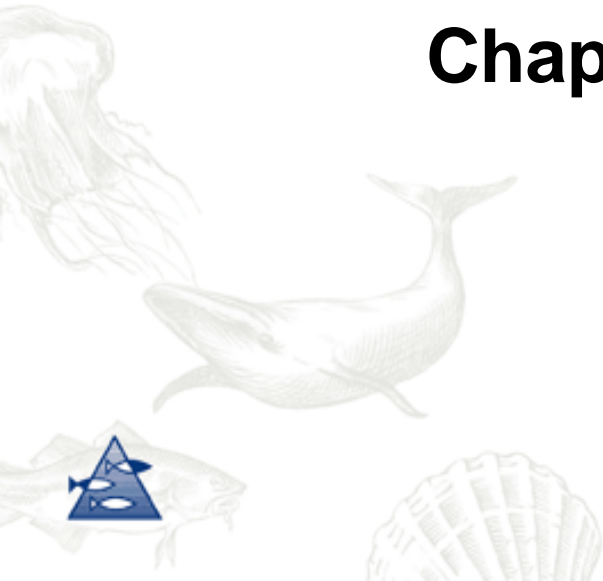
Group survival container(s)

Suggested Equipment
Shelter – tents or storm shelters or equivalent – sufficient for maximum number of persons
Thermal protective aids or similar – sufficient for maximum number of persons
Sleeping bags – sufficient for at least one between two persons
Foam sleeping mats or similar – sufficient for at least one between two persons
Shovels – at least 2
Sanitation (e.g. toilet paper)
Stove and fuel – sufficient for maximum number of persons ashore and maximum anticipated time of rescue
Emergency food – sufficient for maximum number of persons ashore and maximum anticipated time of rescue
Flashlights – one per shelter
Waterproof and windproof matches – two boxes per shelter
Whistle
Signal mirror
Water containers & water purification tablets
Spare set of personal survival equipment
Group survival equipment container (waterproof and floatable)

Chapter 9 – Safe navigation

Chapter 10 - Communication

Chapter 11 – Voyage planning



Chapter 12 – Manning and training

- 12.2 Companies shall ensure that masters, chief mates and officers in charge of a navigational watch on board ship operating in polar waters shall have completed training to attain the abilities that are appropriate to the capacity to be filled and duties and responsibilities to be taken up, taking into account the provisions of the STCW convention and the STCW Code, as amended.
- 12.3.4 Every crew member shall be made familiar with the procedures and equipment contained or referenced in the PWOM relevant to assigned duties.



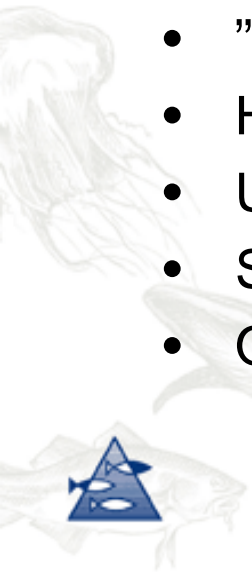
Potential areas of common interest/ potential for collaboration

Operational issues

- Polar Water Operation Manual (PWOM)
- Crew training and education, formal and informal (on the job training)
- Barter and charter – Common standards and requirements
- Logistics planning – Best practice and lessons learned
- Medical requirements

Technical issues

- "Winterization" of scientific equipment exposed to icing
- Hull covers for moon pools, drop keels etc
- Use of ice windows on hullmounted antennas
- Sea water intakes and distribution for lab use (slush avoidance)
- Other?



Meet somewhere, sometime?

- If there is an interest to form an IRSO Polar Code working group, an IRSO Polar subgroup or an independent Polar RV committee, IMR is happy to host the kick off meeting in early 2016, either in Norway or at the shipyard in Italy building the "Kronprins Haakon".

