



**ACCESS**  
Arctic Climate Change  
Economy and Society



**Project no. 265863**

# **ACCESS**

## **Arctic Climate Change, Economy and Society**

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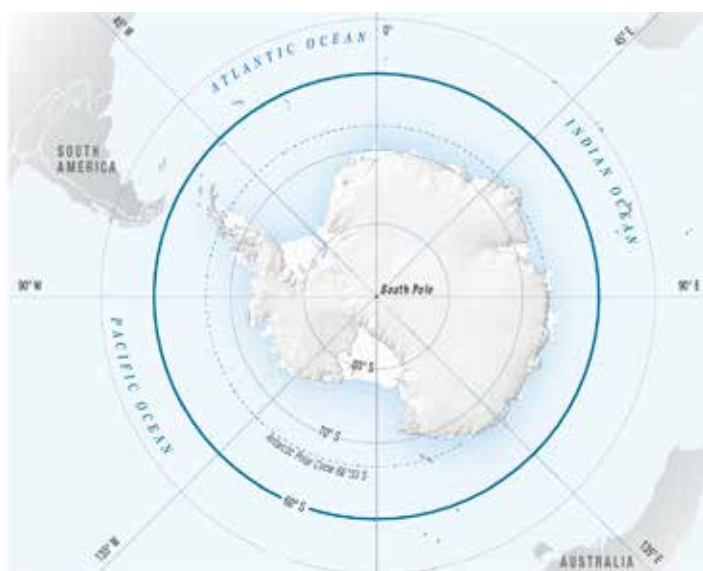
## IMO Polar Code for Ships Operating in Polar Waters

A historic milestone for marine safety and the protection of Arctic people and the marine environment in polar waters will be reached when the International Maritime Organization (IMO) initiates the implementation phase for the Polar Code in May 2015. The Polar Code establishes binding or mandatory international standards for new and existing commercial carriers and passenger ships operating in Arctic and Antarctic waters. The Code covers ship structural standards; required marine safety equipment; training and experience standards for the ship officers and crew; and environmental rules regarding oil, noxious liquids, sewage and garbage. All maritime states will have the challenge of implementing the Polar Code in their national legal systems by 1 January 2017. The Arctic states share the challenge and responsibility of showing strong leadership during the Code's implementation phase and articulating to a global community the importance and immediacy of international safety and environmental rules for polar ships.

### Introduction

Most professionals in the polar and maritime communities are well aware that the International Maritime Organization (IMO) is developing a mandatory Polar Code for ships operating in polar waters. However, the broader global community, including parliamentarians and national maritime administrators, should also have an understanding of the importance and policy implications of this historic new regime for the Arctic and Antarctic marine environments. The Polar Code at its core addresses marine safety and environmental challenges for ships operating in remote, sometimes extreme, conditions where marine infrastructure is limited or non-existent. The Polar Code is also directly

related to the future protection of Arctic people, especially those in Arctic coastal communities and their traditional lifestyles. The IMO is seeking to create a uniform, nondiscriminatory set of rules and regulations that will result in a level playing field for all marine operators. Importantly, the Polar Code is a set of amendments to two existing IMO safety and environmental protection instruments - the International Convention for the Safety of Life at Sea (SOLAS) and the International Convention for the Prevention of Pollution from Ships (MARPOL) - to adapt and enhance ship systems for operations in both Arctic and Antarctic waters. A third key element being addressed is the experience and training of ship's officers and crew, especially the ice navigators in the pilothouse on voyages in ice-covered polar waters.



*Figure 1 - Polar Code areas in the Antarctic.*  
Source: International Maritime Organization.



*Figure 2 - Polar Code areas in the Arctic.*  
Source: International Maritime Organization.





## IMO Polar Code for Ships Operating in Polar Waters

### Boundaries and Polar Ship Types

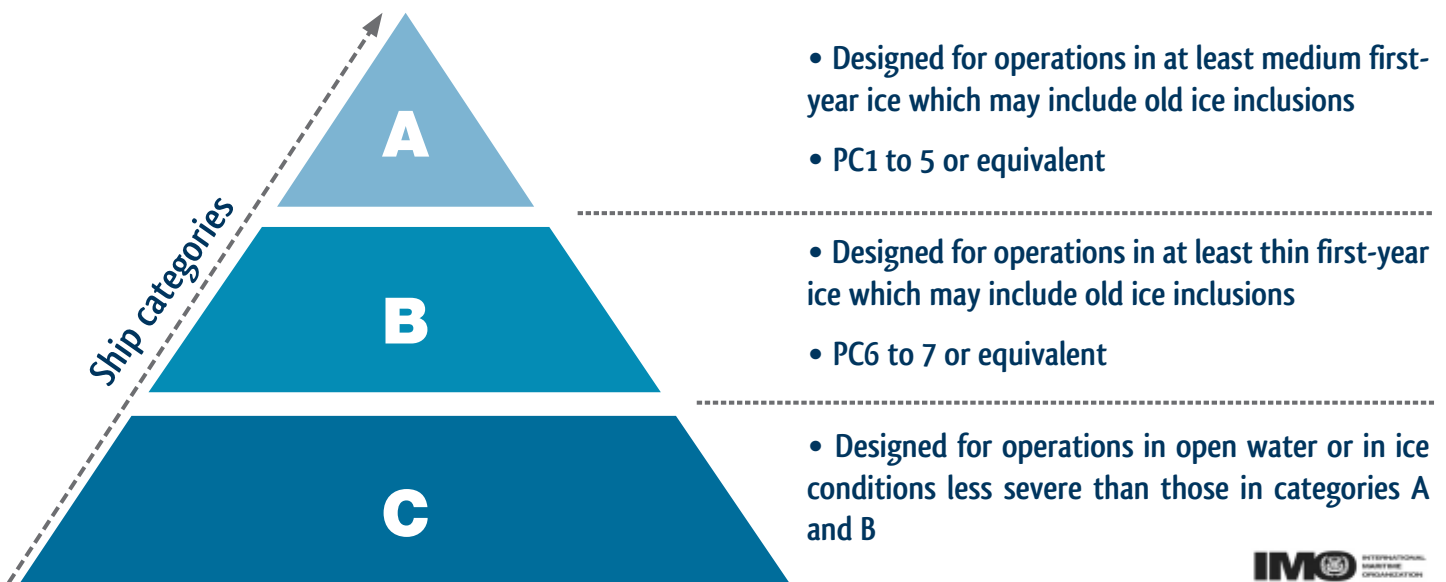
The Polar Code will be mandatory for all commercial carriers and passenger ships of 500 tons or more. It will be applicable in all Antarctic waters south of 60 degrees south. This boundary around the Antarctic continent corresponds to the northern boundary of the Antarctic Treaty (Figure 1).

The boundary in the Arctic for application of the Polar Code includes adjustments due to the nature of the warmer waters in the North Atlantic (Figure 2). In the Bering Sea, the Polar Code boundary will be 60 degrees north; the boundary moves slightly south to include all of Greenland and then runs northeast along the east Greenland coast and north of Iceland until it intersects with the Russian Arctic coast in the Barents Sea. All of Iceland, Norway and the Kola Peninsula in northwest Russia are not considered within the Polar Code area since they are ice-free year-round.

The carriers and passenger vessels to be certified will be required to obtain a Polar Ship Certificate from the flag state and will also be

required to carry a Polar Water Operational Manual that is unique to a given polar ship. The Polar Ship Certificate would classify a ship for operation in polar waters as one of three ship types (Figure 3).

These categories provide a key flexibility since not all ships are intended for operation in the same ice conditions and importantly, the same polar navigation season. For example, a non-ice strengthened passenger vessel (which normally operates in open water) on a voyage in polar waters during summer would be classified as a Category C ship. The Polar Ship Certificate would be approved by the flag state and would include information on polar ship category and ice class; operational limitations; and required additional safety, communications and navigation equipment. The Polar Water Operational Manual, which will include ship specific information including operational capabilities and limitations, is a practical requirement to assist the owners and operators of ships voyaging in polar waters.



*Figure 3 - Categories of Ships Operating in Polar Waters.*  
Note: PC = International Association of Classification Societies polar ship category.  
Source: International Maritime Organization.





## IMO Polar Code for Ships Operating in Polar Waters

### History of the Polar Code Development

The development of a polar code extends back to the end of the Soviet Union and initiatives by several nations including Germany and Canada. An IMO Outside Working Group (OWG) was established in 1993 and this experts group, led by Canada, drafted the framework for an initial Polar Code five years later. Key strategies of the OWG included: building on existing IMO ship rules and standards for safety, environmental protection, and training; focusing equally on the safety of human life and protection of the marine environment; and, using the United Nations Convention of the Law of the Sea (UNCLOS) as the legal framework for the polar oceans. Considered also in the OWG's work was the extensive knowledge and experience of the ice navigation regulatory regimes in the Russian Arctic, Canadian Arctic and the Baltic Sea (Swedish-Finnish shipping rules for seasonal ice operations). Early in the OWG process, the IMO endorsed a set of Polar Code harmonization principles that included:

- Ships are to have suitable ice strengthening for their intended voyages.
- No oil shall be carried against the outer hull.
- All crew members must be properly trained in the operation of polar vessels.
- Appropriate navigational equipment shall be carried by all polar vessels.
- Suitable survival equipment shall be carried for each person.
- There will be a set of unified classes for polar ships operating in ice.
- Consideration must be given to vessel installed power and endurance.

The IMO accepted the draft Polar Code from the OWG, but decided as an alternative strategy to develop a set of guidelines titled *IMO Guidelines for Ships Operating in Arctic Ice-Covered Waters*. Approved in 2002, these Guidelines were voluntary and focused solely on Arctic waters. During 2004-2009, the Arctic Council conducted the Arctic Marine Shipping Assessment (AMSA), which in a key recommendation called for the mandatory application of relevant parts of the Guidelines and augmentation of global IMO ship safety and pollution prevention conventions. Having reached consensus with the AMSA recommendations, the eight Arctic states voiced their strong view that mandatory or binding IMO rules and regulations for Arctic marine operations were essential and required as soon as practical. Overlapping the work of the AMSA team, during 2006-2008 the International Association of Classification Societies (IASC) developed and adopted a set of unified requirements for Polar Class ships (Table 1).

Polar Class	General Description
PC1	Year-round operation in all ice-covered waters
PC2	Year-round operation in moderate multi-year ice conditions
PC3	Year-round operation in second-year ice which may include multi-year ice inclusions
PC4	Year-round operation in thick first-year ice which may include old ice inclusions
PC5	Year-round operation in medium first-year ice which may include old ice inclusions
PC6	Summer/autumn operation in medium first-year ice which may include old ice inclusions
PC7	Summer/autumn operation in thin first-year ice which may include old ice inclusions

*Table 1 - IASC Polar Class Ship Categories*

Note: Ice descriptions follow the World Meteorological Organization sea-ice nomenclature.

### Ongoing IMO Work on a Mandatory Polar Code

Since 2010, the IMO Marine Safety Committee has been considering safety amendments to SOLAS. The IMO's Sub-Committee on Ship Design and Construction has discussed a broad range of themes including polar ship design and construction, and required marine safety and lifesaving equipment. The proposed amendments to MARPOL have been considered by the IMO's Marine Environmental Protection Committee which has reached consensus on the mandatory application of the Polar Code for select MARPOL Annexes: Annex I (prevention of pollution by oil); Annex II (prevention of pollution by noxious liquids); Annex IV (prevention of pollution by sewage); and Annex V (prevention of pollution by garbage). The IMO's Sub-Committee on Human Element Training and Watchkeeping recently reviewed the critical training and manning requirements for polar operators.

All of the elements of the Polar Code should be adopted by the IMO committees by April 2015 and by the IMO as a whole in May 2015. It is important to note that the Polar Code will have both mandatory and recommendatory provisions for safety and pollution prevention. The implementation phase for the Polar Code will commence in May 2015. It is anticipated that the Polar Code will come into force on 1 January 2017. During this implementation phase (2015-17) the United States, as chair of the Arctic Council, will lead the Arctic states in advocacy for the Polar Code within the global maritime community and communicate its importance to a global audience.



## IMO Polar Code for Ships Operating in Polar Waters

### Policy Implications and Challenges of the IMO Polar Code

The mandatory IMO polar Code is a historic new regime for the polar oceans that will establish binding and enhanced international standards for new and existing commercial ships operating in Arctic and Antarctic waters. Ratification of these measures will herald a new era of protecting Arctic people and the Arctic marine environment. A number of policy and practical challenges await the full implementation of the IMO Polar Code:

- Beginning in May 2015, all maritime states will have the challenge of implementing the Polar Code in their national legal systems by 1 January 2017.
- The Arctic states, having forcefully called for a mandatory Polar Code within the work of the Arctic Council, share the challenge and responsibility of showing leadership in the Code's implementation phase and articulating to a global community the importance and immediacy of international safety and environmental rules for polar ships.
- Denmark, Finland, and Sweden, as Arctic states and members of the European Union (EU), have the task of communicating with all maritime states within the EU a sense of urgency in the implementation of the IMO Polar Code by 1 January 2017.
- The process for gaining a Polar Ship Certificate should be developed by the national maritime authorities of the flag states and the ship classification societies so that it is operational by 1 January 2017.
- The global maritime community will be challenged to develop the appropriate Polar Water Operational Manual for every ship that might voyage in polar waters at the time of the Polar Code's coming into force.
- There are few qualified polar mariners in today's global maritime workforce. It will take some time for many of the flag states to use existing ice navigation training facilities and develop their own training options in the decades ahead.
- It remains unclear how large passenger ships will meet the many standards of marine safety equipment, ships training and mariner competency standards required by Category C ships under the Polar Code.
- The ship classification societies and marine insurance industry are key players in evaluating the future risks of ships operating in polar waters. The new Polar Code provides both industries

with a set of uniform, international rules and regulations and a policy framework for enhanced marine safety and environmental protection in the maritime community.

- Enforcement of the IMO Polar Code will be the responsibility of the flag states and also the port states in certain circumstances. The ship classification societies will certify that polar class ships meet the new rules, and the marine insurance industry will have a role in insuring only ships that meet these new standards. IMO will have no direct enforcement role, but the Arctic states as both flag and port states will be influential in making sure all ships operating in Arctic waters adhere to the Polar Code rules and regulations.
- Commercial ships voyaging and operating in remote polar waters place a premium on ship monitoring and tracking. Sharing Arctic marine traffic data among the flag and port states may require a new binding agreement among the Arctic states. This information could provide new data on the effectiveness of the IMO Polar Code and how the marine industry is adjusting to these new rules and regulations.

### Outlook

More than two decades have passed since an IMO Outside Working Group began a serious attempt and process to develop unified polar ship rules. The IMO Polar Code that will come into force on 1 January 2017 will be a key framework agreement and a beginning of a long process to further protect polar waters in an era of increasing marine operations. The new Polar Code is not comprehensive and will not address such issues (and impacts) as black carbon from ship emissions, heavy fuel oil use in the Arctic and ballast water discharge. Future designation of the Arctic Ocean as an IMO emission control area will surely need to be addressed. The issue of fishing vessels and other types of ships in polar waters (not dealt with by the new Code) must also be considered by IMO. These and other challenges will be addressed by additional amendments to SOLAS and MARPOL, and refinements to the requirements for polar mariner training and experience. Further initiatives will be developed following the recognition by the international maritime community by 2017 of the Polar Code as the new IMO ship standards for marine safety and environmental protection in all polar waters.

### 27 participants and 10 European countries involved in ACCESS project



ACCESS is a 4 year European program (2011-2015) supported within the Oceans of Tomorrow call of the European Commission Seventh Framework Programme.

For further information about ACCESS please visit our website at [www.access-eu-org](http://www.access-eu-org)

