Next steps for Vessel Management in the Southern Ocean
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Information Paper Submitted by ASOC¹

Summary

An International Code for Ships Operating in Polar Waters (Polar Code) focused on cruise vessels and cargo vessels of over 500GT is expected to be completed in May 2015, and to enter into force from 1 January 2017. Part 1 of the Code and related amendments to the International Convention for the Safety of Life at Sea (SOLAS) were adopted in November 2014, while Part 2 of the Code, focusing on pollution prevention, is expected to be adopted along with amendments to the International Convention on the Prevention of Pollution from Ships (MARPOL) Convention in May 2015. This paper summarises a few new requirements of the Code and highlights some areas which ASOC believes should receive further consideration during Step 2 of work on the Polar Code. Step 2 of the work is focused on vessels such as fishing vessels, private yachts, and cargo vessels under 500GT, and is due to commence in 2016. Ahead of the work commencing, information is being sought on the number of “non-SOLAS” ships operating in polar waters and reports of accidents and incidents including those requiring search and rescue interventions since 2010. ASOC urges the Antarctic Treaty Parties to formally assist Step 2 of the development of a mandatory Polar Code by contributing to the information gathering exercise through the provision of copies of relevant ATCM papers and reports to the IMO. While Step 2 of work on the Polar Code will focus on the non-SOLAS vessels, such as fishing vessels, vessels under 500GT and private craft, ASOC is hopeful that some existing provisions can also receive further consideration, in particular so-called Category C vessels and damage stability requirements and matters relevant to environmental protection of polar waters. ASOC welcomes the adoption of the first mandatory Polar Code to improve the management of vessels operating in the polar waters, and urges full participation by ATPs in Step 2 of work to complete consideration of the requirements of non-SOLAS vessels.

Polar Code – a quick update

During 2009 work was undertaken at the International Maritime Organization (IMO) to extend the existing IMO Guidelines for Ships Operating in Arctic Ice-covered Waters² to cover both Antarctic and Arctic (or Polar) waters³. The revised and extended Guidelines took effect from 2011, however during the work it had become apparent that there would be value in developing a mandatory and legally binding instrument. Work to develop the International Code for Ships Operating in Polar Waters (Polar Code) commenced at the IMO in February 2010, with Step 1 focused on cruise vessels and cargo vessels of over 500GT expected to be completed in May 2015, and to enter into force from 1 January 2017. Part 1 of the Code and related amendments to the International Convention for the Safety of Life at Sea (SOLAS) were adopted in November 2014. Part 2 of the Code, focusing on pollution prevention, is expected to be adopted along with amendments to the International Convention on the Prevention of Pollution from Ships (MARPOL) Convention in May 2015.

The decision to develop a mandatory Polar Code was spurred on by the publication of the investigation into the sinking of the ice strengthened cruise ship Explorer in November 2007, following a collision with ice⁴. The investigation found that the inexperience of the Master was the primary reason the Explorer suffered the casualty. What was thought to be first year ice was in fact much harder land ice, and the Master was unfamiliar with the type of ice encountered in Antarctic waters. The Master’s decision to abandon the vessel

¹ This paper was written by Sian Prior.
² MSC / Circ. 1056 MEPC / Circ. 399 Guidelines for Ships Operating in Arctic Ice-covered Waters. 23 December 2002.
as a precautionary measure and the Engine Crews efforts to restore and maintain power so that passengers could be successfully transferred into lifeboats in all likelihood saved lives. The fair weather conditions at the time of the accident contributed to the successful rescue of the passengers. Within two hours of the passengers being safely transferred from lifeboats to the Nordnorge, the weather conditions deteriorated to gale force winds. It would be interesting to review the mandatory Polar Code and consider what might have happened differently had the Code been in effect before 2007.

**New developments in the Polar Code**

A new development for ships operating in polar waters will be the requirement for a valid Polar Ship Certificate, which should, where applicable, reference a methodology to assess the operational capabilities and limitations in ice. The Polar Ship Certificate will be issued after an initial survey for new vessels or a renewal survey for existing vessels provided a ship meets the requirements of the Code. Ships will also have to have a Polar Water Operational Manual which should include:

- information on the ship-specific capabilities and limitations in ice,
- procedures to be followed in normal operations,
- procedures to be followed in the event of incidents in polar waters,
- procedures to be followed in the event that conditions are encountered that exceed the ship’s specific capabilities and limitations, and
- procedures to be followed when using icebreaker assistance.

While Part 2 of the Code focuses on provisions to address environmental protection, there are other areas which focus on safety of the ships and safety of people on board but will also be important in terms of reducing the impact of international shipping on polar environments. Voyage planning, a routine part of any shipping operation, is one example. Through improved voyage planning the risks to the marine environment can be further reduced, particularly in polar waters. The Polar Code requires that in addition to standard procedures when planning the route, the Master should also consider the limitations of hydrographic information and aids to navigation. This is welcome as a significant number of incidents in recent years have occurred as a result of groundings and as new areas become accessible as sea ice reduces, there is a greater the chance of entering completely uncharted waters. Other matters to be included in voyage planning include:

- sourcing up to date information on the extent and type of ice (while recognising the limitations in available data) and recent records on ice and temperatures,
- seeking available information on marine mammal populations and migratory routes along with measures to be taken if marine mammals are encountered,
- sourcing information on designated areas along the route, and
- considering operations in in areas remote from search and rescue (SAR) capability.

Part 2 of the Code focuses on pollution prevention and when in effect will introduce more stringent requirements for operational discharges from ships including oil, chemicals and garbage, however the provisions are primarily relevant to Arctic waters as Antarctic waters already received enhanced protection under the MARPOL Convention. With respect to sewage discharges, the provisions have been clarified and disinfected sewage can only be discharged more than 3 nautical miles from land, ice shelves or fast ice, and as far as practicable from areas of ice concentration exceeding 1/10. For untreated sewage the distance is extended to 12 nautical miles. New ships constructed after the entry into force date will not be able to discharge any sewage unless treated.

**Limitations of the Polar Code**

Development of the Polar Code has been a complex process, with a large number of IMO sub-committees invited to consider and contribute to different chapters of the Code. It is unusual amongst IMO instruments because it is geographically focused on a part of the world where there is relatively less history and experience of international shipping, and where there are significant differences between the two regions,
despite both being polar. It is not only cross-cutting across safety matters but also across environmental protection issues.

While the adoption of the first mandatory Polar Code is to be welcomed, ASOC remains concerned that some provisions will not provide the level of protection required for polar waters and that the current Polar Code will lead to different interpretations of ice strengthening standards for so-called Category C vessels. Throughout the development of the Code there has been considerable discussion of the three categories of ships introduced in the Code and which categories will be able to operate in different levels of ice cover. While Category A and B ships will need to be ice-strengthened in accordance with the ice conditions they are allowed to operate in, Category C ships do not need to be ice-strengthened although they will be allowed to operate in some level of ice cover. The situation is further confused in that some Category C ships are likely to be ice strengthened able to operate in up to 95cm first year ice, while some will have no ice class and be allowed to operate in up to 10 - 15cm first year ice. Furthermore, Category A and B ships will be required to have sufficient residual stability to sustain ice-related damage but Category C ships are exempt from damage stability provisions – even if they are ice-strengthened and operating in first year ice up to 95cm thick. ASOC is concerned that different interpretations of the standards for Category C vessels will result, and that appropriate levels of safety or protection for polar waters will not be in place. ASOC believes that the burden of proof should be reversed with all ships operating in polar waters required to meet the damage stability requirements, unless exempted due to the intended area of operation. This is particularly advisable as the polar climate changes, position and thickness of ice can be expected to change, making encounters with ice less predictable.

Early in the process of development the Code, it was envisaged that the Code, unlike the Polar Guidelines, would address both environmental protection and the safety of shipping. A number of submissions to the IMO envisaged that, in considering the potential for impacts from international shipping on polar environments, the Code could cover not only pollution prevention measures but also a broader range of environmental protection matters. Despite a range of environmental protection concerns being raised in the early stages of discussion, ASOC believes that these were reduced to a smaller, albeit important, range of amendments to the MARPOL Convention for the sake of expediency. As a result, ASOC is concerned that despite clear original intentions insufficient attention has been given to environmental protection issues in preparing the Code.

Recognising the wide range of potential impacts in polar regions, and the vulnerability of the environment and wildlife, a comprehensive list of environmental priorities and possible solutions was identified, however not all have been addressed. For example, the threat from a heavy fuel oil (HFO) spill in the Arctic has not been addressed, and ships will still be allowed to discharge raw, untreated sewage into the sea provided they are more than 12nm from land, ice-shelves or fast ice and as far as possible from areas of ice concentration exceeding 1/10. Also, there has been no consideration of the threat posed by discharges of grey water, air emissions, or through the introduction of invasive species via ballast discharges or hull fouling.

**Step 2 (or phase 2) of the development of the Polar Code**

In June 2015, the IMO’s Maritime Safety Committee (MSC) is expected to consider Step 2 of work on the Polar Code as proposed by the Polar Code Working Group at the 54th session of the IMO’s sub-committee on ship design and equipment (DE) (now the sub-committee on ship design and construction, SDC) and subsequently endorsed by DE 54 and the Maritime Safety Committee 88th Session. Prior to work commencing on Step 2, information is being sought on the number of “non-SOLAS” ships operating in polar waters and reports of accidents and incidents including those requiring search and rescue interventions with these ships in polar waters since 2010. ASOC, working with environmental non-governmental organisations with consultative status with the IMO, has provided some basic information on recent accidents and

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5 Category A: ships designed for operation in polar waters at least in medium first-year ice, which may include old ice inclusions; Category B: ships not included in Category A, designed for operation in polar waters in at least thin first-year ice, which may include old ice inclusions; and Category C: ships designed to operate in open water or in ice conditions less severe than those included in Categories A and B.
incidents in polar waters\(^6\) (Antarctic waters relevant information is shown in Table 1 below). ASOC urges the Antarctic Treaty Parties to formally assist Step 2 of the development of a mandatory Polar Code by contributing to the information gathering exercise through the provision of copies of relevant ATCM papers and reports to the IMO.

**Table 1: Examples of recent fishing vessel and other non-SOLAS ship losses and incidents in polar waters**

<table>
<thead>
<tr>
<th>Vessel and flag</th>
<th>Incident, location and date</th>
<th>Further information available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazilian oil barge, Brazil (oil barge)</td>
<td>Capsized and sank with 10,000 litres of diesel on board, South Shetland Islands, Feb. 2012; the barge was later recovered intact.</td>
<td>ATCM XXXV IP65: Comandante Ferraz Station: Oil Barge Incident. Submitted by Brazil.</td>
</tr>
<tr>
<td>Endless Sea, Brazil (motorised yacht)</td>
<td>Beset in ice and sunk at King George Island, South Shetland Islands in April 2012 while carrying around 8,000 litres of fuel; search and rescue involved.</td>
<td>ATCM XXXV IP64: Brazilian Yacht Accident. Submitted by Brazil.</td>
</tr>
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**Step 2 – revisiting provisions of the Polar Code**

While Step 2 of work on the Polar Code will focus on the non-SOLAS vessels, such as fishing vessels, vessels under 500GT and private craft, ASOC is hopeful that some aspects of Step 1 can also receive further consideration. At the last MSC meeting in May 2014, the environmental NGOs submitted a paper expressing the concerns about Category C vessels and damage stability requirements as outlined in Section 3 above\(^7\).

\(^6\) MSC 95/21/11 Request for data on incidents within polar waters. Submitted by Friends of the Earth International (FOEI) and Pacific Environment.

\(^7\) MSC 94/3/17 Category C ships in the draft Polar Code. Submitted by Friends of the Earth International (FOEI), Pacific Environment and the Clean Shipping Coalition (CSC).
and MSC agreed that the paper from the environmental NGOs “should be considered during the second phase of the work (i.e. non-SOLAS ships)” (MSC 94-21, paragraph 3.34).

Furthermore, other threats which have the potential to harm marine wildlife and polar waters and have been identified but not been addressed in the Code require further consideration, for example the introduction of non-native species, considered one of the most significant threats to global marine biodiversity, New Zealand\(^8\) proposed making the existing Guidelines for Ballast Water Exchange in the Antarctic Treaty Area mandatory for vessels entering the region, while Norway proposed that until the Ballast Water Management Convention had been globally implemented, ballast water management should be address with respect to polar regions through the Code\(^9\). In addition, a study by Det Norske Veritas (DNV)\(^10\) emphasizes the need to control the spread of organisms via fouling on ships’ hulls and rudders and notes that this is an issue for which there is no global legal instrument at the current time, only guidance.

With respect to another threat, Norway highlighted the potential threat from grey water\(^11\), noting that at present MARPOL does not control discharges of grey water, and that discharges in polar waters will take place in areas where elevated temperatures may be regarded as an environmental disturbance factor. As grey water will include high concentrations of detergents that could be accessible to the marine environment and wildlife as nutrients, Norway posed a question as to whether grey water should be considered with the context of the Polar Code. DNV\(^12\) also identified the unregulated discharge of grey water from cruise ships as an area of concern that should be subject to further investigation with regard to potential harmful effects in polar waters. The report recognised that the wide variety of sources of grey water on board a vessel could result in the discharge of effluent containing several chemicals for which the effects and decomposition under different conditions are not necessarily known.

ASOC proposes that further consideration of these and other threats, including black carbon discharges, raw sewage discharges, antifouling systems and underwater noise, should be undertaken during Step 2.

**Other shipping matters**

Last year, ASOC submitted a paper to ATCM XXXVII on the management of vessels in the Southern Ocean\(^13\), which proposed a review of shipping management measures to address collisions, groundings and protection of vulnerable areas through the use of existing IMO measures such as areas to be avoided and ship routeing measures. As ASOC indicated, the use of such measures to manage shipping have not been used extensively in Antarctic waters (with the exception of IMO’s Special Area status which addresses discharges of pollutants) and will not be covered by the Polar Code. ASOC continues to believe that a review of the potential opportunities for reducing the risks of collisions and groundings and protecting the most vulnerable areas through the use of existing IMO measures\(^14\) should be further considered.

**Action required**

ASOC welcomes the adoption of the first mandatory Polar Code to improve the management of vessels operating in the polar waters, and urges full participation by ATPs in Step 2 of work to complete consideration of the requirements of non-SOLAS vessels.

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\(^8\) DE 55/12/3 Environmental considerations for the development of the Polar Code. Submitted by New Zealand.


\(^10\) DE 54/INF.5 Environmental aspects of emissions and discharges from shipping during regular operation in polar areas. Submitted by Norway.

\(^11\) DE 54/13/7 Environmental aspects of the Code. Submitted by Norway.

\(^12\) DE 54/INF.5 Environmental aspects of emissions and discharges from shipping during regular operation in polar areas. Submitted by Norway.

\(^13\) ATCM XXXVII IP70 Management of Vessels in the Antarctic Treaty Area. Submitted by ASOC.

\(^14\) ATCM XXXIV IP91 Vessel Protection and Routeing – Options Available to Reduce Risk and Provide Enhanced Environmental Protection. Submitted by ASOC.
ASOC Recommends:

- ATPs agree to participate in Step 2 of work on the development of a Polar Code for vessels operating in polar waters, and
- ATPs agree to formally provide relevant ATCM documentation to the IMO to inform the development of the work to take forward Step 2.