Management of Vessels in the Antarctic Treaty Area
Vessel Management in the Antarctic Treaty Area

Information Paper Submitted by ASOC

Summary

In this paper, ASOC reflects on three recent vessel incidents in the Southern Ocean and the relevance of these incidents to ASOC’s previous recommendations on the importance of comprehensive reporting on vessel incidents to inform the development of new policy and regulation, such as the soon to be adopted International Code for Ships Operating in Polar Waters (“Polar Code”). The paper also highlights the importance of extending hydrographic surveys in the region, and protecting areas with limited survey data until such time as up to date hydrographic data is available. The paper goes on to consider aspects that ASOC believes should be encompassed within a Polar Code and which ASOC believes require further attention and strengthening before the Code is adopted later in 2014, including the application of the Code, ice strengthening and damage stability requirements for vessels, training requirements, voyage planning, vessel position reporting, and finally environmental protection. ASOC seeks the support of Antarctic Treaty Parties for a number of recommendations aimed at strengthening the draft Polar Code. Finally the paper includes recommendations in relation to investigating options for ships’ routing (which is not to be encompassed by the Polar Code) and a short update on a loophole in the MARPOL regulation of the carriage and use of heavy fuel oil in the Antarctic.

Another summer season, further vessel incidents

On 7th January 2014, it was reported that finally the Russian-flagged Akademik Shokalskiy was moving again after being trapped in ice in Australia’s rescue coordination zone in East Antarctica since 25th December 2013. Three icebreaker/ice strengthened vessels responded to the incident but were unable to reach the Akademik Shokalskiy, with the Chinese-flagged Xue Long, also getting stuck in the ice for a few days. A fourth, more powerful vessel was on route to help the trapped ships, when the news came that the winds had changed, moving the ice and freeing them. Then in February this year, the Japanese flagged ice breaker Shirase grounded off Molodezhnaya Station in East Antarctica and a krill fishing vessel, the Korean flagged Kwang Ja Ho was reported aground 450m off the Antarctic coast. It seems from the brief information provided that the Shirase’s double-hull helped to ensure that the vessel remained viable and that there was no leak of oil, while the Kwang Ja Ho sustained damage to a freshwater tank and was able to refloat.

While the details of what caused the Akademik Shokalskiy to become trapped initially and the international response are still being debated, ASOC believes that these recent incidents nevertheless highlight the importance of comprehensive investigation of all vessel incidents, action with respect to routeing vessels away from areas lacking adequate hydrographic data, and the need for a robust and fit-for-purpose International Code for Ships Operating in Polar Waters (“Polar Code”).

In the past two years, ASOC has submitted two papers on reporting on vessel incidents. Initially we encouraged comprehensive reporting on incidents in the hope that reports would help to inform the development of the Polar Code. The adoption of a mandatory Polar Code is now due this year, but there is

---

1 Lead author Dr. Sian Prior, with comments from Jill Barrett, Dr. Ricardo Roura, and Barry Weeber.
5 IP 53 ATCM XXXV, Follow-up to Vessel Incidents in Antarctic Waters, presented by ASOC. Hobart 2012. IP 59 ATCM XXXVI Update to Vessel Incidents in Antarctic Waters, presented by ASOC. Brussels 2013.
still value in comprehensive reporting into the causes and consequences of incidents – to ensure that the Code is robust and “fit for purpose” and, if necessary, to refine the Code.

The coastline and coastal waters of Antarctica are not extensively surveyed and there have been a number of groundings in recent years, including groundings by the following vessels: *M/V Lyubov Orlova* (2006), *M/V Nordkapp* (2007), *M/V Ushuaia* (2008), *M/V Ocean Nova* (2009), *Clelia II* (2009), *M/V Polar Star* (2011), *Shirase* (2014), *Kwang Ja Ho* (2014). The lack of hydrographic information and therefore an increased risk of grounding, has been previously recognised at ATCM and the need to extend and improve hydrographic data is regularly discussed by ATCM. Until the time that hydrographic data is widely available, ASOC believes that the Antarctic Treaty Parties should consider setting aside areas where survey data is absent or significantly out of date and routeing vessels clear of these areas.

Furthermore, it is imperative that all vessels operating in the Southern Ocean are able to withstand the consequences of grounding. Currently the Safety of Life At Sea Convention (SOLAS) requires that a double bottom be fitted extending from the collision bulkhead to the afterpeak bulkhead. However there is a “get-out” clause with the words “as far as this is practicable and compatible…”. While the “get-out” clause might be appropriate in some regions of the world, ASOC believes that the remote circumstances of the Antarctic coupled with the lack of adequate hydrographic survey coverage of Antarctic waters means that double bottoms from the collision bulkhead to the afterpeak bulkhead should be a mandatory requirement for ships operating in the Antarctic region.

**ASOC recommendations:**

- ASOC calls on Antarctic Treaty Parties to adopt a Resolution addressing the importance of reporting on causes and consequences of incidents, including environmental response and monitoring and comprehensive investigation into incidents, in order for the full impacts to be assessed and for lessons to be learnt and applied, and to require the preparation of follow-up reports which review the progress on delivery and implementation of recommendations arising from incident reporting.
- ASOC calls on Antarctic Treaty Parties to make every effort to improve the collection of hydrographic data in areas likely to be frequented by shipping and to highlight areas where hydrographic data is not available by identifying them as “areas to be avoided”.
- ASOC calls on Antarctic Treaty Parties to support the need for all ships operating in the Southern Ocean to be required to have a double bottom extending from the collision bulkhead to the afterpeak bulkhead in order to sustain grounding.

**A mandatory code for shipping in polar waters**

The International Code for Ships Operating in Polar Waters (“Polar Code”) is due to be adopted in 2014, but there is still much to be resolved before it is finally approved and adopted. Further developments will have taken place between preparing this paper and the XXXVII ATCM as the International Maritime Organization’s (IMO) Marine Environment Protection Committee (MEPC) is due to approve Part II of the Polar Code which will address pollution prevention and/or environmental protection in early April. The IMO’s Maritime Safety Committee (MSC) will meet soon after the ATCM and approve the detail of Part I of the Polar Code, which covers safety measures. The final Code is then to be adopted later in the year by the two Committees.

*Applicability of Part I on Safety Measures and Part II on Pollution Prevention / Environmental Protection*

---

6 IP 53 ATCM XXXV, Follow-up to Vessel Incidents in Antarctic Waters, presented by ASOC. Hobart 2012.
7 See Resolution 5 (2008) ATCM XXXI Hydrographic surveying and charting which notes the increased marine traffic in the Antarctic region and is concerned at the increased risk of harm to ships, persons and the environment in inadequately charted waters in the region. Also Resolution 2 (2010) ATCM XXXIII The contribution to hydrographic knowledge of waters of the Antarctic Treaty area which recommends the collection of hydrographic and bathymetric data by National Antarctic Programmes’ ships and cooperation with hydrographic offices to improve nautical charts and improve safety of navigation in the Antarctic Treaty Area.
8 IP 91 ATCM XXXIV Vessel Protection and Routeing – Options Available to Reduce Risk and Provide Enhanced Environmental Protection. Presented by ASOC.
ASOC believes that a number of critical aspects of the Polar Code remain unresolved including its application. It would appear that there is general agreement that the Code be applied to both new and existing ships with a small number of exceptions to specific provisions for structural arrangements that cannot be addressed retrospectively. However, the date of entry into force has yet to be finalised. ASOC submits that it is important that the Code be applied to all ships, both new and existing, from the date of entry into force, with the number of exemptions to specific clauses minimised, and with a transition period identified beyond which vessels with exemptions will no longer be certified to operate in polar regions.

**Category C vessels**
The Polar Code introduces three Categories of ships, which will be able to operate in different levels of ice cover\(^9\). ASOC is concerned that the third category, Category C ships, could be exempt from a number of the ice strengthening and stability provisions of the Polar Code, although these ships could be operating in waters with no ice through to waters with first year ice up to 30 cm thick. As each ship operating in polar waters will be required to have a Polar Certificate and Polar Waters Operating Manual under the Code, it has been proposed to address the requirements of individual vessels in relation to the waters in which it is expected to operate through the Certificate and Manual. However there is concern that this approach may not offer appropriate levels of protection and could be interpreted differently by different bodies. ASOC believes that ships intending to operate in any ice or in the vicinity of ice should be required to meet the ice strengthening and double-bottom, sub-division requirements. ASOC also believes that the burden of proof should be reversed, so instead of exempting all Category C vessels from ice strengthening and damage stability requirements, all ships should be required to meet the provisions on ice strengthening and damage stability unless exempted due to the intended area of operation.

**Training requirements**
Following the report of the investigation by the Republic of Liberia\(^10\), which identified that the lack of experience in Antarctic ice conditions was a factor in the sinking of the tourist cruise ship *MV Explorer* in Antarctica in late 2007, ASOC has considered that the training of Masters and crews must be considered an important element to be addressed in the Polar Code. An IMO sub-committee has been instructed to develop training requirements for ships operating in polar waters and the requirements of the Polar Code on training will be considered again by the Maritime Safety Committee in May. ASOC supports proposals for the inclusion in the Polar Code of a requirement for a two-tier system of training with basic training required for both deck and engine department officers and ratings to widen the base of knowledge of personnel operating vessels in polar waters, and advanced training for any person able to assume responsibility for the conduct/navigation of a vessel. Furthermore, ASOC supports proposals for a requirement for all vessels to carry an experienced ice navigator – this may be a regular crew member or someone who would join a vessel for a part of a journey through polar waters.

**Voyage Planning**
One aspect of the Polar Code will address voyage planning, and currently the draft Code is undecided whether voyage planning should include the identification of known areas with densities of cetaceans or if it is should be broadened to cover other wildlife too. ASOC believes that voyage planning should be undertaken to ensure due consideration of safety of the ship and persons on board and of environmental protection, and that this should include identification of known areas with densities of cetaceans or other vulnerable wildlife. Further guidance could be included in the recommendatory section of the Code along with possible sources of wildlife information.

**Vessel position reporting**
There is an opportunity for the Polar Code to address the need for ships to report to recognised position reporting systems accessible to search and rescue authorities to facilitate Search & Rescue response. ASOC

---

\(^9\) Category A: ships designed for operation in polar waters at least in medium first-year ice, which may include old ice inclusions; Category B: a ship 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: a ship designed to operate in open water or in ice conditions less severe than those included in Categories A and B.

has previously prepared submissions to ATCM on vessel traffic monitoring and information systems\textsuperscript{11}, and believes that the proposal for vessels to report their position on a regular basis to an appropriate position reporting system will be invaluable both for ease of Search & Rescue response and to address an environmental response if required.

\textit{Part II – Pollution Prevention and/or Environmental Protection}

Part II of the Polar Code addresses pollution prevention or environmental protection (the final title is still to be resolved). However it is likely that a number of the outstanding aspects of this section will have been addressed by the MEPC meeting, which will conclude ahead of ATCM XXXVII.

With the exception of sewage discharges, it is likely that there will be little new in this section of the Code that will have consequences for shipping in the Southern Ocean since more stringent shipping environmental protection provisions already apply for the Antarctic area compared to the Arctic. As well as the inadequately regulated (in ASOC’s view) discharge of untreated sewage, two further gaps in environmental protection regulation in Antarctic waters concern ASOC - the discharge of grey water and emissions of black carbon. It can be expected that the Polar Code will provide for new restrictions on sewage discharge from new vessels but regulations for existing vessels could remain largely as they are currently with untreated sewage discharge being allowed provided the vessel is over 12nm from the nearest land, or additionally over 12nm from the nearest ice shelf or land-fast ice and as far as practicable from areas of ice concentration exceeding 1/10 cover. ASOC has previously submitted proposals with respect to discharges of black (sewage) and grey water from shipping in Antarctic waters\textsuperscript{12}, including a proposal for a prohibition on the discharge of untreated sewage or grey water into Antarctic Treaty waters and the application of Special Area Status for the Antarctic Treaty Area under MARPOL Annex IV (in line with status already conferred with respect to MARPOL Annex I, II and V).

With respect to black carbon from shipping, ASOC has previously submitted that emission reductions from local and southern hemispheric sources of black carbon and other short-lived climate pollutants could provide the possibility of slowing warming in the near-term if combined with longer-lived greenhouse gas mitigation actions\textsuperscript{13}; and proposed further exploration of the extent of these emissions and impacts on Antarctica, including the construction of an emission inventory of black carbon from local sources such as tourism and fishing vessels\textsuperscript{14}.

\textit{Phase 2 addressing fishing and other vessels}

It has long been the intention for a second phase of work to be undertaken to address those vessels not encompassed by the initial Polar Code, i.e. fishing vessels, motorised yachts, commercial vessels under 500GT and others. Some States have been pushing hard to ensure that this work, which is particularly important for the Southern Ocean, is not overlooked. A major difficulty is likely to be deciding on the route of application of measures for these vessels. With respect to fishing vessels, options such as the Cape Town Agreement of 2012\textsuperscript{15} might be useful, but it has not been ratified by many States as yet.

\textbf{ASOC Recommendations:}

ASOC calls on Antarctic Treaty Parties to cooperate within the IMO framework to ensure that a robust and fit for purpose Polar Code is adopted in 2014, by supporting:

- application to both new and existing vessels from the date of entry into force of the Polar Code,

\textsuperscript{11} IP 63 ATCM XXXVI SAR-WG: An Antarctic Vessel Traffic Monitoring and Information System. Presented by ASOC.
\textsuperscript{12} IP66 ATCM XXXVI Discharge of sewage and grey water from vessels in Antarctic Treaty waters. Presented by ASOC.
\textsuperscript{13} IP 65 ATCM XXXVI Black Carbon and other Short-lived Climate Pollutants: Impacts on Antarctica. Presented by ASOC.
\textsuperscript{14} See IP 72 ATCM XXXVII Near-term Antarctica Impacts of Black Carbon and Short-lived Climate Pollutant Mitigation submitted by ASOC.
- requirements for all Category C vessels to meet minimum provisions on ice strengthening and damage stability, including a double bottom extending from the collision bulkhead to the aftpeak bulkhead unless exempted due to their intended area of operation,
- proposals for a two-tier system of polar waters training with basic training required for both deck and engine department officers and ratings and advanced training for any person able to assume responsibility for the conduct / navigation of a vessel, and for ice advisers (ice navigators / ice pilots) to be present on vessels operating in polar waters,
- voyage planning addressing safety of the ship and persons on board and environmental protection, including the identification of known areas with densities of cetaceans or other vulnerable wildlife,
- a requirement for vessels to report their position on a regular basis to an appropriate position reporting system,
- proposed restrictions on the discharge of untreated sewage in Antarctic waters from new vessels, and extending this to a prohibition on discharge of all untreated sewage, and
- the inclusion of a “place-holder” to consider further the need to address discharges or emissions of grey water and black carbon in Part II B of the Code.

ASOC also calls on Antarctic Treaty Parties to support the need for phase 2 of work on the Polar Code to commence immediately following its adoption, and to work with CCAMLR and other bodies to identify priority measures and appropriate mechanisms to apply relevant provisions of the Polar Code to fishing vessels, motorised yachts, and other vessels not initially encompassed by the Code.

**Other Vessel Issues**

*Ships’ Routeing*

ASOC has previously submitted information on ships’ routeing measures and shipping environmental protection measures developed with the express purpose of reducing risk and preventing pollution of the marine environment. With the exception of IMO’s Special Area status, such measures have not been used extensively in Antarctic waters and are not to be encompassed by the Polar Code, yet they would be complementary to the Polar Code to manage safe access to the Antarctic continent, islands and surrounding waters and for environmental protection. ASOC believes 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 such as areas to be avoided and ships’ routeing measures should be fully considered.

**ASOC Recommendations:**

ASOC recommends that ATCM adopt a Resolution on the need for a review of shipping management measures to address collisions, groundings and protection of vulnerable areas.

*Heavy Fuel Oil (HFO) update*

Following a request from Antarctic Treaty Parties, at its sixtieth session in 2010 the Marine Environment Protection Committee (MEPC) adopted an amendment to MARPOL Annex I, which took effect from 1 August 2011, prohibiting the use or carriage as fuel or cargo of heavy fuel oils as defined in the regulation. The intent was to prohibit the possibility of heavy fuel oils being spilt in the sensitive and vulnerable waters of the Antarctic Area (south of 60° South).

Following an incident in April 2013, when a Chinese-flagged vessel fishing for krill caught fire and sank in the Bransfield Strait off the Antarctic Peninsula, it came to light that the vessel had been carrying heavy fuel oil as ballast while inside the Antarctic Area. Fortunately, the 97 crew were rescued and there was no loss of life, and it seems likely that the heavy fuel or “ballast” oil burnt as no signs of a slick were reported. It seems that the carrying of heavy fuel oil in ballast tanks for use outside of the Antarctic Area, while probably not a widespread practice, may be considered by some Parties to be acceptable under the current regulation.

---

16 IP 91 ATCM XXXIV Vessel Protection and Routeing – Options Available to Reduce Risk and Provide Enhanced Environmental Protection. Presented by ASOC.
As a result, an amendment to MARPOL Annex I Regulation 43 has been proposed\(^\text{17}\) that would eliminate the loophole in the regulation. The amendment will be considered at the next Marine Environment Protection Committee, which will have taken place between the preparation of this paper and ATCM XXXVII. ASOC fervently hopes that the proposed amendment to MARPOL Annex I Regulation 43 is supported, and this loophole is closed.

\[^{17}\text{MEPC 66/7/3 Use and carriage of Heavy Grade Oil (HGOs) in the Antarctic area. Submitted by the United Kingdom and the United States.}\]