Vessel Protection and Routeing – Options Available to Reduce Risk and Provide Enhanced Environmental Protection
Summary

Currently, ships’ routeing measures and environmental protection measures (with the exception of Special Area status) developed with the express purpose of reducing risk and preventing pollution of the marine environment have not been used extensively in Antarctic waters. In this paper ASOC provides summary information on the range of IMO measures available, and submits that as the management of access to the Antarctic continent and its surrounding waters is developed further by ATCM, a review of the potential opportunities for reducing the risks of collision and groundings and protecting the most vulnerable areas through the use of IMO measures is considered fully.

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

1. Introduction

ASOC has been concerned at the potential and actual impacts of increased vessel activity in Antarctic waters for some time and has advocated improved, legally-binding regulation of vessel activities to minimize impacts on the Antarctic environment and wildlife. ASOC is also concerned that despite an increase in the numbers of vessels operating in Antarctic waters in recent years and a number of serious incidents, greater use is not being made of existing international regulations that could, if appropriately applied, reduce the risks. The development of a mandatory Polar Code\(^1\) is a significant step forward, however it is unlikely that it will be able to address localised routeing and protection measures that could enhance safety and protection of the environment and wildlife in Antarctic waters.

Over many years, the International Maritime Organization (IMO) has developed a range of shipping measures that can be utilised to manage vessels for the purpose safety of navigation or for preventing or reducing the risk of pollution or other damage to the marine environment. With the exception of Special Area status under the MARPOL Convention,\(^2\) which places more stringent controls on discharges from vessels than are required outside of the Special Area, the use of ship routeing measures and protection measures in Antarctic waters is currently limited. This Information Paper outlines some of the ship routeing and protection measures available to help manage vessels in hazardous and / or sensitive environments such as the waters of Antarctica.

2. Ships’ routeing measures

IMO ship routeing measures are generally used to improve safety by minimising the risk of collisions and groundings. Such measures can also be beneficial for environmental protection, and some may be introduced for environmental purposes. Routeing measures can be used specifically to address:

- navigation in converging areas
- navigation in areas where traffic density is great
- navigation in areas where movement of vessels is restricted (searoom, obstructions, limited depths, unfavourable meteorological conditions)
- prevention or reduction of risk of pollution or other damage

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\(^1\) See ATCM XXXIV IP Developing a Mandatory Polar Code – Progress and Gaps submitted by ASOC.

\(^2\) The International Convention for the Prevention of Pollution from Ships, 1973, and Protocol of 1978 (MARPOL 73/78) consists of regulations covering various sources of ship-generated pollution. The waters south of 60 degrees South are designated an Antarctic Special Area for the purpose of Annex I (oil), II (noxious liquid substances in bulk) and V (garbage), and a recent amendment to MARPOL Annex I will prohibit the carriage and use of heavy fuel oils in these waters.
IMO’s general provisions on ships’ routeing\(^3\) elaborate a range of routeing measures that can be used to reduce the risk of accidents, including:

- traffic separation schemes – aimed at separating opposing streams of traffic through the establishment of traffic lanes
- roundabouts – a separation point or circular separation zone and circular traffic lane, traffic moves in a counterclockwise direction
- inshore traffic zone – a designated area between the landward boundary of a traffic separation scheme and the adjacent coast
- two-way route – a route within defined limits within which two-way traffic is established, aimed at providing safe passage in areas where navigation is difficult or dangerous
- recommended route – a route of undefined width for ships in transit
- recommended track – a route which has been examined to ensure that it is free of dangers
- deep-water route – a route within defined limits which has been accurately surveyed for clearance of sea bottom and submerged obstacles, particular caution and within which the direction of traffic flow may be recommended
- precautionary area – an area within defined limits where ships must navigate with particular caution and within which the direction of traffic flow may be recommended
- area to be avoided – an area within defined limits in which navigation is particularly hazardous or it is exceptionally important to avoid casualties
- no anchoring area – an area within defined limits where anchoring is hazardous or could result in unacceptable damage to the marine environment

It is necessary when considering routeing measures to ensure that the selected routeing scheme aims to provide safe passage for ships through an area without restricting legitimate rights and practices, while taking account of navigational hazards.

### 3. Particularly Sensitive Sea Areas

IMO’s Particularly Sensitive Sea Area (PSSAs) designation is designed to provide special protection for areas of the marine environment that are recognised as being significant for ecological, sociological or scientific reasons, and vulnerable to the potential or actual impacts of intentional maritime activities\(^4\). The IMO has developed Guidelines on the designation of PSSAs,\(^5\) which elaborate the criteria for identifying areas to be designated as PSSAs. They include:

- ecological criteria – uniqueness or rarity, diversity, productivity, spawning or breeding grounds, naturalness, integrity, fragility
- social, cultural or economic criteria – significance of the area for fishing, recreation or tourism
- scientific and education criteria – research, baseline for monitoring studies, education

A PSSA designation conveys no specific protection, and is adopted via a non-binding IMO Assembly Resolution. A PSSA proposal must elaborate the “associated protective measure or measures” (APMs) that

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\(^4\) [http://www.imo.org/OurWork/Environment/PollutionPrevention/PSSAs/Pages/Default.aspx](http://www.imo.org/OurWork/Environment/PollutionPrevention/PSSAs/Pages/Default.aspx)
\(^5\) A.982(24) Revised guidelines for the identification and designation of Particularly Sensitive Sea Areas (PSSAs). A.982 (24) updates three previous Resolutions A.720(17), A.885(21) and A.927(22).
will be applied to address the specific threat to the area proposed for designation. The APMs provide the legal basis for the management of shipping activity within a PSSA. The PSSA Guidelines identify three possible legal options for APMs:  

- a range of measures already established under existing IMO instruments including ships’ routeing measures, discharge standards, mandatory reporting, pilotage services, ship design and equipment requirements
- new measures not previously available but which would become available through amendment of an IMO instrument or the adoption of a new IMO instrument
- measures adopted within the territorial sea or under Article 211(6) of the United Nations Convention on the Law of the Sea where measures under IMO instruments would not adequately address the needs of the area

A recent paper reviews the possibilities for designation of PSSAs beyond the limits of national jurisdiction, and uses the Southern Ocean as a case study recognising that at an Antarctic Treaty Meeting of Experts (ATME, Wellington 2009) it was recorded that there was some support for the idea of an Antarctic PSSA. The ATME noted that further work is required and that some delegations considered that such a designation along with the APMs should be considered by ATCM, including whether the necessary protections might be achieved via Antarctic Treaty mechanisms. In considering whether the whole Antarctic Treaty Area should qualify as a PSSA or a more narrowly defined area, Roberts et al. conclude that the size of the area is not the issue, but rather that the environmental vulnerability and the nature of protection needed is critical.

It is important to recognise that the types of measures possible under a PSSA designation can be sought independently of the PSSA, however, if a number of measures are necessary to provide adequate protection to a sensitive and vulnerable region, a PSSA designation is logical. In addition, the PSSA designation raises the profile of the area to be protected.

4. Conclusions

Currently, ships’ routeing measures and environmental protection measures (with the exception of Special Area status) developed with the express purpose of reducing risk and preventing pollution of the marine environment have not been used extensively in Antarctic waters. ASOC submits that as the management of access to the Antarctic continent and its surrounding waters is developed further by the ATCM, a review of the potential opportunities for reducing the risks of collision and groundings and protecting the most vulnerable areas through the use of IMO measures is considered fully.

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