Australian experience with implementation of the International Code for Ships Operating in Polar Waters (Polar Code)

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Summary

This paper summarises Australia’s experience with implementation of the *International Code for Ships Operating in Polar Waters* **(**the Polar Code) from the perspective of a flag State and as an owner and operator of a Polar Class vessel supporting the Australian Antarctic Program.

Australia strongly supports safe and sustainable shipping the Polar regions and looks forward to hearing experiences of other flag States on their Polar Code implementation. Australia is particularly interested in sharing experiences and potential best practices for Polar Code implementation with States and operators active in the remote regions of continental Antarctica, including the East Antarctic region.

Australia Flag State implementation of the Polar Code

The responsible agency for implementation of the Polar Code for Australian-flagged vessels is the Australian Maritime Safety Authority (AMSA). The safety construction and equipment requirements of the Polar Code are enacted domestically through *Marine Order 53 (Vessels in polar waters) 2016* which sets out certification requirements for vessels that undertake voyages in polar waters, and also sets out arrangements for the safe operation of vessels in polar waters. The pollution prevention requirements of the Polar Code are implemented underthe *Navigation Act 2012*, the *Protection of the Sea (Prevention of Pollution from Ships) Act 1983* and separate marine orders.

As the national regulator, AMSA works with a range of Classification Societies, which undertake plan approval, survey and certification functions on AMSA’s behalf. Australia has two vessels under its flag which operate in Antarctic waters under Polar Code requirements: the RSV *Nuyina*, a Polar Class 3 icebreaker owned by the Australian Antarctic Division, and the RV *Investigator,* a multipurpose research vessel owned by the Commonwealth Scientific and Industrial Research Organisation (CSIRO).

Polar Code compliance of Australian-owned and Australian-registered ships is confirmed through regular flag State inspections by AMSA marine surveyors. Aside from the two Australian Polar Code compliant vessels, relatively few vessels visit Australian ports which operate in the Polar Code area and would be subject to Polar Code requirements.

With the relatively recent entry into force and small number of Australian-flagged Polar Code vessels, in comparison with other flag and port states, Australia welcomes opportunities to share experiences and best practices on Polar Code implementation in the Antarctic region.

Australian Antarctic Program: experiences with Polar class certification for Antarctic operations

The Australian Government took delivery of its new Antarctic icebreaker, the RSV *Nuyina* (pronounced ‘noy-yee-nah’) in October 2021 and the vessel completed its maiden voyage to Antarctica in late January 2022. Owned by the Australian Government (Australian Antarctic Division) and operated and crewed by Serco, the vessel provides a state-of-the-art capability to conduct multi-disciplinary science, both in sea ice and open water, and will be the primary means of moving cargo and equipment to and from Australia’s Antarctic and sub-Antarctic research stations. The RSV *Nuyina’s* capacity to transport special personnel will also supplement Australia’s Antarctic airlink for personnel.

RSV *Nuyina* is a Polar Class 3 Icebreaker (+). It is 50 metres high, 160.3 metres long and can carry 117 special personnel, 32 crew, 1200 tonnes of cargo, and 1.9 million litres of fuel. The vessel’s helideck can support four small helicopters or two medium-sized helicopters.

The RSV *Nuyina* complies with mandatory IMO and Antarctic environmental regulations, including those implemented in the Polar Code. The vessel incorporates into its design, construction and operation environmental standards for ballast water, biofouling, grey water, refrigeration systems, exhaust emissions, and the ship’s energy efficiency management – all of which exceed statutory environmental performance regulations.

The RSV *Nuyina’s* home port is Hobart, and its operations will largely focus on servicing Australian stations in the East Antarctic and the sub-Antarctic along with conducting marine scientific research activities.

Polar Code compliance was considered in the design, build and commissioning of the RSV *Nuyina* prior to its first voyage to the Antarctic in 2022. Design of the vessel commenced in 2016, after the Polar code was adopted, and construction began in mid 2017, after its entry into force.

AMSA commissioned Lloyds Register (LR) to carry out plan approval and onsite verification of Polar Code compliance under AMSA oversight and authority, including on interpretations of rules and alternate proposals. Currently RSV *Nuyina* is operating on an interim Polar Code certificate whilst winterisation systems trials are concluded.

The East Antarctic, where most of Australia’s Antarctic operations occur, is remote and distant from mainland ports and other ships, resulting in circumstances unique to this operating region. In working through Polar Code requirements and to ultimately achieve the full-term Polar Ship Certificate for the RSV *Nuyina,* AAD and the vessel operator were successful in overcoming some testing challenges. For this vessel, the combination of the ship being built and commissioned distant from polar waters (in Romania and the Netherlands) added complexity to the Polar Code certification process, with a need to schedule deployments to polar regions at a suitable time of year to test specialised systems.

Other challenges associated with operations in the remote East Antarctic region include retention and onboard management of treated black water, treated oily water, and garbage for extended periods due to the long voyages.

Interpretation of the Polar Code provisions relating to extended ‘time to rescue’ for operating in very remote regions is an area where work was required to find the best solutions. Depending on the time of year the ship is operating, time to rescue could be up to 90 days if there are no other capable and available icebreaking ships in the Southern Hemisphere. This requires large quantities of rations, water and support equipment to be carried. This issue is particularly challenging for East Antarctica, compared with Arctic regions and the Antarctic Peninsula, which have a wider range of alternative rescue opportunities.

Australia’s experience with Polar Code implementation has focused on our operations in East Antarctica, and on the application of the Polar Code to the design, construction and operation of the RSV *Nuyina*. Australia is happy to continue to share with other Parties and National Antarctic Programs our approach to the implementation challenges arising from these two priorities, and any future lessons learned through ongoing operations and implementation of the Polar Code.