

Commentary

The Arctic Marine Shipping Assessment: Key Arctic Council Framework for Protecting Arctic Communities and the Marine Environment

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The Arctic Council's Arctic Marine Shipping Assessment (AMSA) released in April 2009 is a key assessment and policy document whose recommendations were negotiated by the eight Arctic states. The 17 AMSA recommendations represent a framework for how the Arctic states will pursue protection strategies and marine safety issues in response to increasing Arctic marine use. It is important to note at the outset of this brief review that the entire AMSA effort can be viewed in three ways: as an historic baseline or snapshot of Arctic marine activity early in the 21st century; as a strategic guide for the Arctic states, the Permanent Participants, and a host of Arctic and non-Arctic actors and stakeholders; and, as a policy document of the Arctic Council since the report and recommendations were approved by consensus of the Arctic states.

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As of November 2016 and the publishing of this Yearbook, AMSA remains highly relevant and the AMSA recommendations continue to be implemented by the Arctic states primarily through the work of the Protection of the Arctic Marine Environment (PAME) Working Group, and international bodies such as the International Maritime Organization (IMO).

The genesis of AMSA came from the Arctic Climate Impact Assessment (ACIA), likely the most influential study in the history of the Arctic, and the Arctic Marine Strategic Plan (AMSP), both released at the 2004 Arctic Council Ministerial Meeting in Reykjavik. ACIA included ten key findings, one of which is related directly to the potential for increasing Arctic marine use: ‘reduced sea ice is very likely to increase marine transport and access to resources.’ The AMSP, developed by PAME and endorsed by the Council, included 29 strategic actions including calling for the conduct of a comprehensive assessment of Arctic shipping. Thus, there are significant linkages of AMSA with earlier work of the Arctic Council, a critical continuity and foundation to move forward a new, interdisciplinary study. Canada, Finland, and the United States stepped up to the challenge as ‘lead countries’ within PAME to coordinate the new assessment; all recognized from the outset that the 8 Arctic states (their technical maritime experts in PAME and other Council working groups), the Permanent Participants, the Council observers, and the global maritime industry would have to make many contributions for the assessment to be comprehensive and successful.

More than 200 marine experts contributed to AMSA and the AMSA team conducted 13 major workshops on such diverse topics as scenarios of the future, marine infrastructure, marine insurance, environmental impacts, indigenous use, and more. It was also important that the assessment keep within the mandates of the Arctic Council on environmental protection and sustainable development and focus its efforts on marine safety and environmental protection measures.

One of the initial challenges for the AMSA team was to build a circumpolar database of Arctic commercial marine use, something that the team believed had never before been attempted. Prior to conducting such a survey, the AMSA team and the PAME country representatives had to come to grips with what is meant by the term ‘Arctic shipping.’ Since AMSA was focused on a holistic approach to impacts, ‘Arctic shipping’ was defined broadly to include all commercial marine operations; some government vessel operations such as icebreaking, marine research and surveying would be included, but strictly naval operations would not be part of the survey. Included in the survey would be an array of ship and vessel types including: fishing vessels, tankers, bulk carriers, icebreakers, general cargo ships, survey/research vessels, offshore support ships, ferries, ferries, tug-barge combinations, container ships, and more.

The electronic survey instrument for AMSA was directed to the Senior Arctic Officials so that the data response would in essence be the official data of the Arctic states, by whatever means that data was gathered by each country. Each of the Arctic states would submit their shipping and marine operations data for their respective Arctic region that they define (not an Arctic definition designated by AMSA or the Council). The survey and GIS-based traffic maps developed by Canada revealed some 6000 vessels operating in the Arctic marine environment in a given year with 4 primary vessel activities: community resupply, fishing vessels, bulk carrier transport, and marine tourism. The traffic maps also showed the seasonal nature of Arctic marine traffic with a

concentration of ships in a short navigation season in July, August and September. Any future data marine traffic data collection (an AMSA data update) should be conducted by the Arctic states together where each nation provides its official data (regardless as to how it is collected) to a team under PAME within the Arctic Council.

Central to any Arctic Council activity or study is the engagement of the Permanent Participants. In this regard AMSA held 14 town hall meetings in Arctic communities in Canada, Iceland, Norway and the United States. This was a critical outreach by the AMSA team to local citizens so that they could share their concerns about increasing marine traffic and their perspectives on the importance of Arctic marine waters to their way of life. Some residents recognized the potential economic benefits of increased marine activity while also expressing concern for oil spills and the disruption of traditional hunting. Social, cultural and environmental impacts were widely discussed as was the importance of early engagement with local communities where new marine projects were envisioned. Importantly, there was significant Permanent Participant engagement at all of the AMSA key workshops and the PAME meetings where AMSA was briefed during 2004-09. Human dimension findings are summarized in a chapter of the AMSA report and human security issues are addressed throughout the report and in the final recommendations. One key finding was the need for a circumpolar survey of Arctic indigenous marine use, particularly when ecosystems-based management and marine spatial planning tools are to be applied in Arctic marine areas.

One of the challenges facing the AMSA effort was how to deal with the complexity of the global shipping enterprise and its relationship with a new, more accessible Arctic Ocean. A scenarios-based approach was used to identify the key drivers and uncertainties of Arctic marine navigation out to 2050 and create a set of plausible futures. The AMSA scenarios workshop participants identified 120 driving forces or factors that can influence the levels of future Arctic marine activity. Select drivers included: global oil prices; world trade patterns; legal stability and overall governance; IMO agreements for Arctic ships; new natural resource discoveries; an Arctic marine disaster; Arctic transit fees; the seasonality of Arctic marine operations; climate change severity; role of the marine insurance industry; and, more. Two selected factors – resources and trade, and governance – became the anchors as axes of uncertainty for a scenarios matrix used to frame the development of plausible futures (narratives or stories of 1500-2000 words). The scenarios work highlighted that future Arctic navigation is closely linked to global commodities prices and Arctic natural resource development. The continued retreat of Arctic sea ice was assumed to provide greater marine access and potentially longer seasons of navigation; however global economics and links to Arctic natural resources are considered primary drivers.

The AMSA scenarios effort facilitated new and unconstrained thinking, and assisted in the education of the Arctic Council regarding Arctic marine operations and shipping issues. While the AMSA workshops identified the main drivers of future Arctic navigation, it also highlighted the linkages of the maritime Arctic to the global economic system.

Three critical topics required in depth AMSA review: the legal and governance framework; environmental concerns and impacts; and the lack of Arctic marine infrastructure. Not surprisingly, since the region is one of earth's oceans, the UN Convention on the Law of the Sea Convention

(UNCLOS) is the legal framework for the regulation of marine operations and shipping according to maritime zones of jurisdiction. An international team of maritime legal scholars led by Canada's Dalhousie University detailed the rights of the Arctic Ocean coastal states as well as the national standards for regulating ship-source pollution in the Arctic. The International Maritime Organization (IMO) was identified as the appropriate and competent UN body to address issues related to Arctic maritime security, safety and environmental protection. Noted in AMSA was the IMO's (then current) voluntary guidelines for ships operating in Arctic ice-covered waters; there were no specific mandatory rules for Arctic ships that were different than safety and marine environmental protection conventions for ships sailing the global oceans.

An AMSA science team tackled the broad issues related to environmental impacts of current and future Arctic marine activity. The team found that the most significant threat to the Arctic marine environment is the release of oil from accidental or illegal discharge. Other key and select impacts addressed included: alien species introduction from ballast water, cargo and hull fouling; ship strikes and potential noise impacts on marine mammals; regional impacts of black carbon; impacts on natural chokepoints and migration corridors; impacts of Arctic ship emissions; and, the impacts of plausible lengthening of the Arctic marine navigation season. In a final chapter in the AMSA report, the lack of Arctic marine infrastructure in most of the Arctic (except for the coasts of Iceland, northern Norway and northwest Russia) was highlighted. The lack of a safety net that marine infrastructure provides is a significant and grave concern for the Arctic states. Such a huge deficit in the mostly remote and harsh Arctic environment makes risk analyses of Arctic marine operations very difficult to evaluate. Huge investments are required in elements of infrastructure such as hydrography and charting, environmental observing, communications, ports, and more to ensure safe navigation. AMSA suggested that new public-private partnerships will be necessary to reduce this infrastructure deficit so that safety and emergency response can be greatly enhanced. The Arctic marine infrastructure challenge remains today as a vexing and strategic needs issue seven years after the release of the AMSA report.

The integration and final phase of AMSA took place at an Integration Workshop in Cornwall, Canada in October 2008. It proved to be one of AMSA's most important and complex meetings. AMSA's 17 recommendations were shaped at this venue and three inter-related themes emerged for communicating these outcomes: Enhancing Marine Safety; Protecting Arctic People and the Environment; and, Building the Arctic Marine Infrastructure. It was at this AMSA workshop that the infrastructure deficit gained status as one of the greatest concerns and most significant outcomes of AMSA. Once the final draft report and recommendations were passed to PAME, a lengthy negotiation process began from late October 2008 to March 2009. The lasting strength of AMSA is that consensus was reached among the Arctic states regarding the AMSA recommendations and the final report. The Arctic Ministers in Tromsø in April 2009 approved AMSA and PAME was requested there to begin a process of implementation of the AMSA recommendations with status reports due back to the Ministers during future Arctic Council Ministerial meetings. AMSA Implementation Status Reports have been approved during the last three Ministerial meetings in Nuuk (April 2011), Kiruna (May 2013), and Iqaluit (April 2015), and a fourth report is due at the May 2017 Ministerial in Fairbanks, Alaska.

The Arctic Ministers and Senior Arctic Officials have signaled a commitment to carrying out implementation of AMSA's diverse recommendations, a clear example of using AMSA as a policy document where the body of approved recommendations represent strategic directions for protection of Arctic people and the marine environment. The Arctic SAR Agreement, the Arctic Oil Spill Preparedness and Response Agreement, progress at IMO on a mandatory IMO Polar Code (to go into force 1 January 2017), greater linkage of the Arctic states on Arctic issues within international organizations (for example, IMO, IHO, and WMO), and greater engagement with Arctic communities (among others) are key accomplishments that stem from the AMSA effort. AMSA remains a cornerstone Arctic state and Arctic Council framework and strategic guide to meeting the many challenges of safe Arctic marine use in the 21st century