

The Arctic Marine Shipping Assessment and Its Lasting Importance

A commentary

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Conducted from 2004 to 2009, the Arctic Council's *Arctic Marine Shipping Assessment (AMSA) 2009 Report* is a historic Arctic assessment and policy document of significant and lasting relevance to the Coast Guard. The most important outcomes of AMSA, and those most relevant to the Coast Guard, are the 17 recommendations approved at the April 2009 Arctic Council Ministerial Meeting in Tromsø, Norway.

Notably, Coast Guard senior civilian managers and officers were key contributors to the effort. As members of the Council's Working Group on Protection of the Arctic Marine Environment (PAME), many in the Coast Guard have worked more than a decade implementing AMSA's recommendations.

The AMSA assessment, conducted under PAME and led by the United States, Canada, and Finland, encompasses the work of more than 200 marine experts including: the Arctic states; the Permanent Participants; global maritime and non-governmental organizations; and shipping companies. These experts held 13 major workshops on scenarios of future Arctic navigation; Arctic indigenous marine use; environmental impacts; marine infrastructure needs; marine insurance; Arctic marine incidents and response; maritime industry perspectives; and AMSA integration to support the research. Additionally, 14 town hall meetings were held in Arctic coastal communities so local, Indigenous citizens could

share concerns and perspectives on increasing marine traffic and the potential impacts on their way of life.

AMSA was a broad, complex assessment of Arctic marine activity, including Indigenous marine use, addressing an array of safety and environmental protection challenges, as well as the definition of Arctic shipping. The assessment was conducted consistent with the Arctic Council's 1996 charter that mandates a focus on environmental protection and sustainable development. The AMSA team took a holistic approach to Arctic shipping and included all vessels of 100 tons or more that could discharge effluents into Arctic marine waters and release emissions into the lower atmosphere. The snapshot of AMSA baseline data for 2004 to 2005 included all vessels operating in the Arctic and noted the types of vessels, activities they were undertaking, and cargo they might be carrying. In all, the *AMSA 2009 Report* contains 96 findings, all relevant to the Coast Guard and its approach to Arctic operations and regulatory responsibilities. Select key findings include:

- The United Nations Convention on the Law of the Sea (UNCLOS) is the legal framework for the Arctic Ocean and for regulation of shipping according to maritime zones of jurisdiction. UNCLOS Article 234 provides coastal states with the right to adopt and enforce non-discriminatory laws and regulations for the prevention, reduction, and control of marine pollution in ice-covered waters.
- Arctic sea ice will likely continue to retreat through the 21st century, however, Arctic sea ice cover will remain in late autumn, winter, and early spring.
- The International Maritime Organization (IMO) is the appropriate body for the Arctic states to turn to regarding all Arctic-related marine safety, security, and environmental protection issues.

For more information

View the *Arctic Marine Shipping Assessment 2009 Report* at www.pame.is/images/03_Projects/AMSA/AMSA_2009_report/AMSA_2009_Report_2nd_print.pdf

The eight Arctic states are active, influential IMO members.

- One key driver of increased Arctic commercial shipping is natural resource development; the dominant shipping mode is destination, versus trans-Arctic, today and in the future where resources are moved out of the Arctic by ship to global markets.
- The most significant environmental threat from Arctic marine operations is the release of oil either accidentally or by illegal discharge.
- The impacts of increased Arctic marine activity on Arctic communities can be direct or indirect; given the variety of marine activities and shipping, and the range of social, cultural, and economic conditions in Arctic communities, impacts may be positive or negative.
- There is a critical marine infrastructure deficit in the Arctic Ocean. Among what is lacking are ports; hydrography and charting; communications; meteorological and oceanographic data; aids to navigation; and response capacity. The only regions with adequate marine infrastructure are the coasts of

Iceland, northern Norway and northwest Russia.

- There are critical areas of the Arctic marine environment that are of heightened ecological and cultural significance, many of which will be at higher risk from current and future Arctic marine operations.
- There are many uncertainties in the future of Arctic marine navigation influenced by a host of key factors including governance; degree of Arctic state cooperation; climate change speed and variability; oil prices and other commodities pricing; new resource discoveries; an Arctic maritime disaster; radical changes in global trade; marine insurance industry roles; multiple use conflicts; and, more.
- Increased marine traffic in the Central Arctic Ocean is a reality during summer (from the AMSA database of 2004 to 2005) with the presence of polar research ships on expeditions and Russian nuclear icebreakers carrying tourists to the North Pole.
- As of April 2009, there were no mandatory IMO rules and regulations for ships operating in Arctic waters. Safe navigation in ice-covered waters



Coast Guardsmen navigate through a narrow channel prior to examining navigational markers in Kobuk Lake southeast of Kotzebue, Alaska. The crew was deployed in support of Operation Arctic Crossroads 2010 and examined the area to gather GPS coordinates for a potentially new aids to navigation structure. Coast Guard photo by Petty Officer 3rd Class Walter Shinn

depends on the experience, knowledge, and skill of the ice navigator; in 2009 there were no uniform international standards.

The AMSA effort can be viewed from three related perspectives. The first is as a baseline assessment of Arctic marine activity and a historic snapshot of Arctic marine use early in the 21st century. The second is as a strategic guide for a host of states and their maritime agencies, Arctic residents, marine operators, stakeholders and actors, such as non-governmental organizations, involved in current and future marine operations and shipping. The last is as a policy framework document focused on protecting Arctic people and the environment.

As a strategic and policy statement, AMSA expressed to the world the Arctic states' shared commitment to protecting Arctic people and the environment in an era of increasing use of the Arctic Ocean. But it is the third perspective that is the most influential, and its lasting importance should not be underestimated. The AMSA recommendations were negotiated to a consensus by the Arctic states so the Arctic Ministers could approve them at the April 2009 Arctic Council Ministerial Meeting.

One of the major tasks of the AMSA team was to better understand the many uncertainties that might influence the future of Arctic marine operations and shipping. To game these out, a scenario planning process—creating scenarios or plausible futures—was employed. The process is much like one of the tools used in the Coast Guard's earlier strategic planning efforts, and today's Evergreen process which underpins organizational strategic thinking and planning. The scenarios workshops identified more than 120 major factors and uncertainties that could shape the future of the Arctic Ocean including legal and governance regimes; climate change; new resource discoveries; world trade patterns; new Arctic maritime state users like China, Japan, and Korea; marine use conflicts; and maritime disasters.

The AMSA effort identified as three primary drivers or uncertainties the demand for Arctic natural resources and resulting trade and governance. The scenarios framework, or axis of uncertainty, was bounded by these primary factors, and the roles of climate

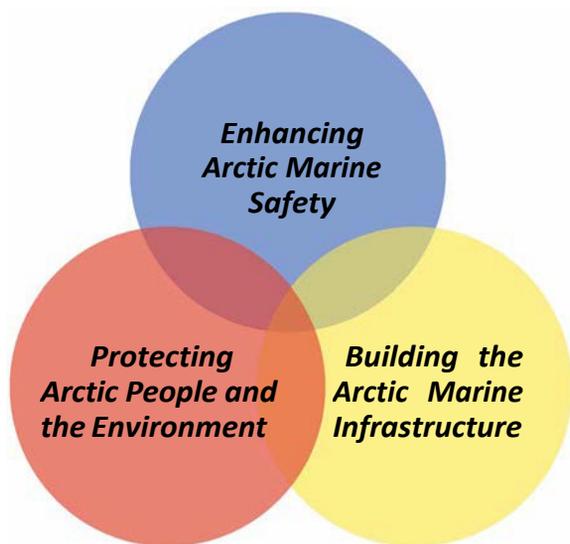
change and continued Arctic sea ice retreat were fully considered in the scenarios.

Arctic sea ice retreat was assumed to provide for greater marine access and potentially longer seasons of navigation. However, in AMSA, and within the plausible scenario narratives, globalization of the Arctic and development of Arctic natural resources were considered the primary drivers of increased commercial marine use, especially by large ships, in the region. The AMSA scenarios work was a success in that it facilitated new and unconstrained thinking, and clearly illustrated the complexity of future use of the maritime Arctic to the Arctic Council community. The process also highlighted the key uncertainties, major risks, and connections of the Arctic to the global economy. Notably, today most of the large commercial ship traffic in the Arctic Ocean is related to the carriage of natural resources out of the Arctic to global markets, and the resupply of ports and communities throughout the region. The report listed these in three, inter-related themes enhancing marine safety, protecting Arctic people and the environment, and building the Arctic marine infrastructure. These themes are fundamental to understanding the challenges in responding to increased Arctic marine use and the future investments required to achieve enhanced marine safety and environmental protection throughout the Arctic Ocean. The Arctic Council understood that the AMSA recommendations would require increased international cooperation among the Arctic states, IMO and other international organizations, and in the emergence



Coast Guard Seaman Alex Cason tends to an unmanned underwater vehicle aboard Coast Guard Cutter *Healy*. The vehicle, operated by the Woods Hole Oceanographic Institute, was used in a joint simulated oil spill recovery exercise designed to survey beneath the ice during a September 2013 Arctic exercise. Coast Guard photo by Petty Officer 3rd Class Grant DeVuyst

AMSA Themes



Enhancing Arctic Marine Safety	Greater Arctic state influence in international organizations; mandatory IMO measures for Arctic ships; the uniformity of Arctic shipping governance; strengthening passenger ship safety in Arctic waters; and, the need for an Arctic SAR agreement
Protecting Arctic People and the Environment	Arctic indigenous marine use survey; engagement with Arctic communities; areas of heightened ecological and cultural significance, and special marine areas; and measures addressing invasive species, oil spill prevention, impacts on marine mammals, and air emissions
Building the Arctic Marine Infrastructure	Addressing the infrastructure deficit; need for Arctic marine traffic systems and environmental response capacities; and, investing in hydrographic, meteorological, and oceanographic data

of new public-private partnerships.

In the years since the release of the 2009 report, the Arctic states and international maritime community have made significant progress in advancing issues raised in AMSA. Foremost is the historic and mandatory *International Code for Ships Operating in Polar Waters*, or the Polar Code, which came fully into force in July 2018. The Coast Guard was a key player in the Polar Code’s development at IMO, representing the interests of the United States as an Arctic state and as a globally connected maritime nation.

Since AMSA, the Arctic states signed two major, binding agreements, the 2011 *Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic*, and the 2013 *Agreement on Cooperation on Marine Oil Preparedness and Response in the Arctic*. Other accomplishments related to the AMSA recommendations include identifying Arctic areas of heightened ecological and cultural significance; greater emphasis on Arctic issues by the Arctic states at international organizations; increased hydrography and charting efforts by the Arctic states; development of World Meteorological Organization METAREAs for the Arctic Ocean; and establishing the International Hydrographic Organization’s Arctic Regional Hydrographic Commission.

The AMSA recommendations continue to provide a solid framework for the Arctic states and their maritime agencies to focus on this new era of extraordinary change in the Arctic. For the Coast Guard, AMSA remains a strategic guide and foundational document for its involvement in the Arctic Ocean’s future.

All parties involved can be proud of their work in developing AMSA, including the Arctic Council for

METAREAs, geographical sea regions used to coordinate transmission of meteorological information to mariners on international voyages through international and territorial waters, are part of the Global Maritime Distress Safety System. The regions are identical to NAVAREAs which are used to coordinate the transmission of navigational hazards.

initiating the assessment and gaining approval of its recommendations, and the United States for its key leadership from State Department, NOAA, Department of the Interior, and Coast Guard experts. The Coast Guard can also be confident knowing it helped create a seminal document that provides a lasting policy framework for the Arctic states and enhances Arctic marine safety and environmental protection for the 21st century and beyond. ■

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