

PAME I – 2015, Agenda Item 4.1 (c)
AMSA Recommendation I(A) & AOR Recommendation 3
Report on the International Ice Charting Working Group (IICWG)

AMSA Recommendation I(A) provides:

“That the Arctic states decide to, on a case by case basis, identify areas of common interest and develop unified positions and approaches with respect to international organizations...to advance the safety of Arctic marine shipping....”

AOR Recommendation 3 provides:

“The Arctic states should support work at the IMO and other international organizations with recognized competence to promote and advance safe, secure, reliable and environmentally sound shipping, including through: ...discussions regarding enhancement of ... ice forecasting....”

Pursuant to this Recommendation, the United States and Canada provide this report on Arctic-related activities of the International Ice Charting Working Group (IICWG).

BACKGROUND

The IICWG was established in 1999 as an “*ad hoc* working group” to promote cooperation between northern hemisphere national ice services to aid them in better serving their respective clients.¹ The group has now expanded its mission to promote cooperation between ice centers around the world on matters relating to sea ice and icebergs.² The IICWG seeks to facilitate the exchange of information between these services so that they can coordinate ice-related activities.³ As an *ad hoc* working group, the IICWG is able to operate independently and develop its own rules, agendas and actions based on the needs of participants.⁴

IICWG members include global experts in observing ice from satellites and aircraft, modeling ice, and preparing ice warning products for mariners to promote safe navigation. The group is dedicated to staying abreast of emerging technologies in sea ice and iceberg detection by all means. Annual IICWG meetings allow the sharing of information on these technologies to benefit mariners worldwide.

¹ John Falkingham, *The International Ice Charting Working Group: An Historical Perspective After 13 Years*, pg. 1 (Sept. 2013), available at <http://nsidc.org/noaa/iicwg/docs/IICWG-2013/IICWG-Historical-Perspective-After-13-Years.pdf>.

² International Ice Charting Working Group (IICWG), Overview, <http://nsidc.org/noaa/iicwg/>.

³ *Supra* note 1.

⁴ *Id.* at 3.

The IICWG's mission and the commitment of its participants were formalized through the drafting and signing of a charter in 2007.⁵ "The Charter has come to represent membership in the [IICWG]" and the signatories are the actors who decide the stances and actions of the group.⁶

The IICWG organizes and operates under two co-chairs, who are at "an organizational level higher than the heads of the represented ice service."⁷ The group's Annex to the Terms of Reference stipulates that one chair should be from Eurasia and the other from the Americas, with these posts rotating every three years, but preferably at different times.⁸

The ice centers participating in the IICWG include government and intergovernmental institutes, agencies and services whose mandates include studying and reporting on ice conditions in different parts of the world.⁹ The participating centers are: Canadian Ice Service,¹⁰ Danish Meteorological Institute,¹¹ Finnish Meteorological Institute,¹² Federal Maritime and Hydrographic Agency of Germany,¹³ Icelandic Meteorological Office,¹⁴ Japan's Maritime Safety Agency's Hydrographical Department,¹⁵ Norwegian Meteorological Institute,¹⁶ Polish Institute of Meteorology and Water Management,¹⁷ Russian Federation of Arctic and Antarctic Research Institute,¹⁸ Swedish Meteorological and Hydrographical Institute,¹⁹ U.S. National Ice Center²⁰ and the International Ice Patrol.²¹

The IICWG conducts and organizes its actions at a plenary level and through two standing committees. At the plenary level, the IICWG maintains an Action Item Status register listing all activities to be conducted by the group as a whole along with the names of individuals principally responsible for organizing these actions.²² Activities range widely, including: drafting working papers on ice issues; providing recommendations to

⁵ *Id.* at 5-6.

⁶ *Id.* at 6.

⁷ *Id.*

⁸ *Id.* at 6-7.

⁹ IICWG, Participating Agencies, <http://nsidc.org/noaa/iicwg/services.html>.

¹⁰ Canadian Ice Service, <http://www.ec.gc.ca/glaces-ice/default.asp?lang=En&n=D32C361E-1>.

¹¹ Danish Meteorological Institute, <http://www.dmi.dk/en/vejr/>.

¹² Finnish Meteorological Institute, <http://en.ilmatieteenlaitos.fi/ice-conditions>.

¹³ Federal Maritime and Hydrographic Agency of Germany, http://www.bsh.de/en/Marine_data/Observations/Ice/.

¹⁴ Icelandic Meteorological Office, <http://en.vedur.is/>.

¹⁵ Maritime Safety Agency, Hydrographical Department, <http://www1.kaiho.mlit.go.jp/jhd-E.html>.

¹⁶ Norwegian Meteorological Institute, <http://met.no/english/index.html>.

¹⁷ Polish Institute of Meteorology and Water Management, http://www.imgw.pl/index.php?lang=en&option=com_content&view=article&id=147&Itemid=180.

¹⁸ Russian Federation Arctic and Antarctic Research Institute, http://www.aari.nw.ru/index_en.html.

¹⁹ Swedish Meteorological and Hydrographical Institute, <http://www.smhi.se/en>.

²⁰ United States National Ice Center, <http://www.natice.noaa.gov/>.

²¹ U.S. Coast Guard International Ice Patrol, <http://www.navcen.uscg.gov/?pageName=IIPHome>.

²² IICWG-XIV Action Item Status (16 Sept. 2014), available at http://nsidc.org/noaa/iicwg/docs/IICWG-2014/IICWG_Plenary_Action_Items_Status.pdf.

international bodies like the IMO; organizing informational, networking and coordinating events for members and outside actors; and reaching out to individuals working in the areas of ice charting and management.

The two standing committees through which the IICWG also acts are:

- **Data, Information, and Customer Support Standing Committee (“Data Committee”):** Described as handling: data and product exchange; terminology, data, and mapping standards; training, operations, and customer support terms of reference.²³ Current activities for this committee listed on its Action Items Status register include: to develop a schematic system to classify the quality, shortcomings, and intended usage of ice charts from an operational user view, to provide presentations of current and future iceberg monitoring and modeling, and to organize an Ice Analysts’ Workshop for Southern Ocean ice service to share best practices from the Northern Hemisphere.
- **Applied Science and Research Standing Committee (“Science Committee”):** Described as handling: technology for analysis and forecasting and applied science; and research and development terms of reference.²⁴ Current activities for this committee listed on its Action Items Status register include: to create a blended dataset of ice and snow thickness data for evaluation by operational users and sea ice model initialization, to determine how to present converging/diverging and ridging sea ice to users in an easy-to-understand format, and to arrange for free satellite data to conduct a science project on sea ice topography.²⁵

As noted, in addition to its ongoing actions at the plenary and standing committee levels, the IICWG also holds an annual meeting to bring together members and others to address broad issues. These meetings have been held every year since the group’s inception (except for 2002)²⁶ in locations all over the world, including Europe, North America and South America.²⁷ The next meeting of the IICWG will take place October 19-24, 2015, in Germany.

ARCTIC ACTIVITIES

All member governments of the Arctic Council, as well as three observers (Japan, Poland and Germany), are charter members of the IICWG.²⁸

The IICWG’s activities with respect to the Arctic, and generally, principally involve coordination of action, data collection and amalgamation and recommendations

²³ IICWG, Standing Committees, <http://nsidc.org/noaa/iicwg/committees.html>.

²⁴ *Supra* note 23.

²⁵ ASRSC, Action Items Status, available at http://nsidc.org/noaa/iicwg/docs/IICWG-2014/ASRSC_Action_Item_Status.pdf.

²⁶ *Supra* note 1, at 5.

²⁷ First Information Circular, 6th Meeting of the IICWG, available at http://nsidc.org/noaa/iicwg/docs/IICWG_2005/IICWG6_First_Information_Circular.pdf.

²⁸ *Supra* note 9.

concerning sea ice and icebergs.²⁹ Direct action and forecasting and data production capabilities are provided by members.

An example of the IICWG's work concerning the Arctic is its facilitation of the coordination of iceberg reporting between North America and Europe.³⁰ Trans-Atlantic ships use the International Ice Patrol to chart iceberg-free courses across the ocean. This service broadcasts daily from North America, but could not be consistently received by ships leaving Europe until they were already halfway across the Atlantic. Discussion through the IICWG led to arrangements whereby the Canadian Ice Service and the International Ice Patrol sent their iceberg charts to the German Weather Service for retransmission to the European side of the North Atlantic so European ships could plan optimal routes across the ocean. This process was set up in 2000 and continues today.

The North American Ice Service (NAIS), made up of the USCG International Ice Patrol, the Canadian Ice Service and the U.S. National Ice Center, is a 10 year-old collaboration built from existing relationships that provides for the ice information needs of both U.S. and Canadian government organizations as well as to maritime interests in North American waters. This relationship allows a leveraged engagement of the three organizations in the IICWG. This NAIS partnership has also been used to improve service to mariners. For example, prior to 2011, the Canadian Ice Service and the International Ice Patrol prepared their own individual iceberg charts for the North Atlantic. Now, under the NAIS partnership, only one iceberg chart is created and distributed year-round and results form a combined reconnaissance strategy which utilizes the airborne resources of both organizations more efficiently. The International Ice Patrol creates this chart from January through August and the Canadian Ice Service creates the chart for the remainder of the year. Instead of receiving two separate, similar yet different, iceberg charts, mariners now receive one iceberg chart year-round.

The IICWG is also involved, among other projects, in making ice information compatible with Electronic Navigation Charts and transforming older Gridded Sea Ice Information format ice charts into the more accessible Geographic Information System shapefile format, which is now utilized by most ice services.³¹ Overall, the IICWG's projects are aimed at improving world ice charting, forecasting and tracking capabilities. There is therefore significant IICWG activity directed toward the Arctic.

In 2013, the IICWG began discussions on how ice information would be integrated into an emergency response effort in the Arctic. In the event of a Search and Rescue or oil spill response scenario, the group considered how the information that only the world's ice services can provide could be fed to those members directing the response efforts. The IICWG is developing a 24-hour call procedure where the ice services would receive notification of an event at any time of day. These efforts will directly contribute to the protection of the Arctic marine environment by assisting with planning response efforts in the vicinity of ice.

²⁹ IICWG, IICWG Business, <http://nsidc.org/noaa/iicwg/collaboration.html>. *Supra* notes 23, 25, & 27.

³⁰ *Supra* note 1, at 7-8.

³¹ *Id.* at 7-9.

RECOMMENDATION

The U.S. and Canada recommend that PAME extend an invitation to the IICWG to make a presentation at its September 2015 meeting. In extending such an invitation, the U.S. and Canada suggest that the IICWG be asked: (i) to address the current state of ice charting and forecasting technology and coordination between Arctic and non-Arctic nations and to present its recommendations for further progress in these areas; (ii) to indicate how the IICWG's programs and activities may contribute to implementation of the Arctic Marine Shipping Assessment (AMSA) Report Recommendations on enhancing Arctic marine safety and building Arctic marine infrastructure; and (iii) to identify any areas where PAME and the IICWG might cooperate to further safety of navigation and protection of the marine environment in the Arctic.