International Workshop on Arctic Ocean Observation Future Collaboration by Research Vessels and Icebreakers

Name of session:
Sharing Experiences and Developing Future Collaboration in Polar Ship Operations
Chair: David Duke Snider (Martech Polar Consulting Ltd.)

1. Background

From the perspective of ship operations, the Arctic region is an exceptionally unique maritime area characterized by extreme weather conditions (such as cold climates and strong winds), the presence of ice, and limited access due to remote areas, which give rise to numerous safety concerns. However, due to the limited access to operation knowledge in the Arctic region, it becomes crucial to facilitate information exchange and collaboration among operators of research vessels in the Arctic. This session was conducted with the aim of introducing the related issues on Polar Training in Japan, as presented by Professor Mantani. The session also aimed to facilitate discussions on four key topics, with the goal of exchanging opinions and knowledge with experienced captains and MOL, the expected operator of JAMSTEC's new Arctic research vessel.

1) Polar navigation (System/Information/Equipment)
2) Emergency Response in Ice (Transporting a sick or injured person)
3) Cooperation with observation work in Ice (CTD deployment, Dredge, etc.)
4) Near-Miss or Accident (Sharing lessons learned)

2. Summary of the Presentation by Professor Mantani

Professor Mantani introduced the current status and challenges of Polar Training in Japan. In addition to discussing potential measures to improve the training content, she also shared a vision for how JAMSTEC's new Arctic research vessel could be utilized to enhance future training.

3. Summary of the Discussion with Experienced Captains and MOL

1) Polar navigation (System/Information/Equipment)
   The discussion covered how navigation is conducted in polar regions, where nautical chart information is limited and ice floes move fluidly, among other uncertainties. It was confirmed that ensuring the safe operation of research vessels requires not only the use of navigation systems but also the significance of visual observations by experienced officers and their experiences navigating through icy waters.

2) Emergency Response in Ice (Transporting a sick or injured person)

The discussion addressed how to handle medical emergencies that may arise during polar navigation. The use of satellite communication infrastructure, such as VSAT, Inmarsat and StarLink, was recognized as an important measure to ensure smooth communication with medical facilities.

3) Cooperation with observation work in Ice (CTD deployment, Dredge, etc.)
   The captains shared their experiences and insights based on the challenges they faced during operations while researchers conducted their observations in icy conditions.

4) Near-Miss or Accident (Sharing lessons learned)
   The captains exchanged their experiences and insights gained from near-misses and accidents in icy regions.

   After the discussion of each topic were completed, all participants confirmed the need for continuous discussions on how ship crew and researchers must cooperate for effective program completion.

4. Common Challenges

The following common challenges were identified during the discussions:

1) The scarcity of information in Arctic regions poses challenges to the safe operation and research activities of all research vessels.
2) There are limited opportunities for sharing experiences related to challenging navigation during observation work in icy regions, as well as the lessons learned from near-miss incidents and accidents.

5. Next Steps

1) It was confirmed that it is important for all involved in Polar research to collaboratively explore the framework for sharing information and experiences in Polar regions. This must also involve members who couldn't participate in these sessions.
2) We support the proposal to meet again in a future workshop to enhance collaboration with various national agencies.

Group Photo among participants
(From left to right: Prof. Mantani, Capt.GH Kim, Capt. Changsoo Kim, Capt. Whatley, Mr. Yumihiko, Capt. Snider)