



Arctic

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In June 2018, the training and competency standards for ships' officers sailing in polar waters will become a mandatory requirement as the final step for the full implementation of the International Maritime Organization's International Code for Ships Operating in Polar Waters (Polar Code). The Code provides regulation that covers the design, construction and operation of ships in the Arctic and Antarctic to protect people and the environment. The approval of the training section will mark the end of over ten years of discussions, debates, and consultations that resulted in the Code finally becoming a reality. It is fitting that the human element – the ability of people to sail safely in polar waters – is the final piece.

Operating ships in polar waters is serious business. The fundamentals of navigation use knowledge and procedures to plan, execute, and monitor a voyage at sea; however, the unique aspects of the Arctic and Antarctic present additional challenges for the ship. For many centuries, knowledge was built from the experiences of ships that were caught and crushed in ice, ran aground on unknown reefs,

had difficulty using navigation instruments such as a compass due to magnetic interference, and the exposure of the ship's crew to extreme cold. The ships and people that were sailing in polar waters remained a small and specialized group for many years reflective of the reality of maritime trading and traffic patterns. Most vessels entering the Arctic and Antarctic were involved in the resupply of communities or were engaged in resource export, such as minerals or fishing and whaling. There was no formal process for designing ships for ice or for learning navigation in polar waters and, for many years, people gained experience by being directly involved.

Things changed as the marine industry started to formalize design and operational standards among various stakeholders. Countries such as Canada, with active marine trade in polar waters, started to create regulations governing ship activity and identified the need for experienced ice navigators. Interest in shipping activity in polar waters has increased beyond traditional resupply and resource services to include cruise ships visiting these regions



Navigation

and the possibility of reduced ice coverage allowing new sea routes. The challenges of sailing in polar waters are no less than they were years ago and to ensure that people new to the conditions – and with no previous experience – could learn from conventional knowledge, the establishment of a training program that coupled with better designed and constructed ships would be needed. The Polar Code is based on industry and regulatory best practices and experiences, and a requirement for ice navigation training provides a mechanism to achieve this improved safety.

Polar navigation training is required for ships' officers sailing in the areas specified under the Code – that is, waters north of 60° north and waters south of 60° south. The certification process will be carried out in two levels: the basic level that provides for an introduction to the fundamentals of navigating a ship in ice and the advanced level aimed at more specific elements for planning and conducting a voyage in polar waters. The training makes use of background theory delivered in classrooms, but also uses

simulation to create scenarios which allow candidates to demonstrate their understanding.

Technology has evolved to assist mariners in navigation and this is also true for systems for use in polar navigation: enhanced ice radars that help to identify leads through pack ice or even ascertain the age of ice; and safe routing and ice prediction software to help in voyage planning with updated ice and weather forecasts that can be fused together to help identify areas to avoid. Ongoing efforts to produce better charting of polar waters and better coverage with satellite for communications and position fixing will also add to the tool box for safe navigation. These technology elements, when combined with effective training packages delivered by experienced instructors, will help newcomers prepare for the operational challenges and situations they may find themselves facing. Better ships, better people, better prepared.

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