

International Ice Charting Working Group



Task Team 8

Marine Training Center Engagement

DRAFT

Report on Observations, Potential and
Recommendations

TASK GOAL

Identify Mariner Training Centers providing courses for Polar navigation

Enhanced understanding of marine training center needs for integration of ice center expertise/data/products in training modules

Enhance training center awareness of ice center capabilities. Identify gaps, bottlenecks, and areas for collaboration

TASK TEAM LEAD

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TASK TEAM MEMBERS

The task team involved specialists from ice services, marine training centers and professional users:

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The overall approach was to build on the 2019 mariner survey outcome and to investigate potential/future contributions from ice services to marine training centers, including the use of ice service data in simulators and relevant expertise in various training modules.

TASK BREAKDOWN

Initially the task team formulated the following questions for investigation of the potential for marine training center engagement:

- Where are marine training centers located (those offering Polar Waters modules)?
- Who/what do they train? How are mariners trained to use ice service products?
- What is the source of ice information used in training?
- Which ice services are used/referenced globally?
- Would examples of current/future ice data be beneficial for use in simulators?
- Where do ice services see primary role/obstacles in closer engagement with marine training centers?

- Where do marine training centers see primary role/obstacles in closer engagement with ice services?
- Is there a need for closer collaboration? Provide more detailed requirements.
- Summarize discussions; provide recommendations and potential roadmap to IICWG.

TASK TEAM OUTCOMES (DELIVERABLES)

- List of Marine Training Centers providing Ice Navigation/Polar Waters modules.
- List of identified challenges and potential areas for collaboration.
- List of areas for continued/focused/enhanced collaboration between ice services and marine training centers.
- Present work/findings at IICWG-21 discussion session to address issues among ice services.

1. Survey Preparation

The Team learned quickly that many marine institutions around the Globe offer Polar Code courses, at both basic and advanced levels. Internet searches, corroborated by several team members, indicated that the quality of the courses varies extremely. Many low-latitude countries issue Polar Code certificates without value, where the institution, instructor and mariner have no experience in ice and Polar Water operations. It is basically a grey market with serious, well-qualified players as well as some institutions only aiming for the profit.

With this in mind and using the success of the 2019 IICWG Mariner Survey, the Team decided to focus only on acknowledged marine training centers with excellent reputations.

The Task Team conducted a new survey among selected, acknowledged training centers and the professional users in the Task Team. The primary objective was not to receive as many responses as possible but to formulate open questions and examine the details of the responses. Sixteen marine training centers around the Globe as well as the Nautical Institute and the professionals on the Task Team were invited to respond to the survey. It should be noted that, to limit the number of responses and subsequent analysis workload, not all serious training centers were included.

The Team's commissioning questions were re-phrased to be open for many types of responses and placed into a response template, intended to be sent back from the responder to the Task Team.

2. Survey & Response Collection

The survey was circulated to 21 potential responders on 29th February 2020 with a 1-month response time. However, the COVID-19 Pandemic had a major impact on all in March, so the response deadline was first extended by 3 weeks and again another 2 weeks to obtain an acceptable number of responses.

The survey was closed on 08 May 2020. Thirteen responses were received out of 21 potential. This was considered very satisfactory given the coronavirus lockdown. The responses were received from the following:

- Belgium: Antwerp Maritime Academy
- Canada: Center for Marine Simulation, Memorial University
- Canada: FEDNAV
- Canada: Martech Polar
- Chile: CIMAR
- Denmark: Marstal Maritime Academy
- Denmark/Greenland: Greenland Pilot Service
- France: École Nationale Supérieure Maritime
- International: The Nautical Institute
- Norway: Institute for Technology and Safety, University of Tromsø
- Russia: Education and Training Center Sovcomflot
- Russia: Makarov Maritime Academy

- USA: Maine Maritime Academy

Some institutions also sent their Polar Code course descriptions.

3. Response compilation and analysis

The open survey questions provided excellent feedback but also included very comprehensive and varied material. All responses cannot be shown here. The Team merged and summarized the responses to identify the primary topics covered and the main messages for the ice services.

The response summary and the detailed identified potential for the ice services listed in the table below:

<p>SURVEY QUESTION:</p> <p>1) Information about the general contents of your Polar Waters courses</p>	<ul style="list-style-type: none"> A. ice at sea is recognized as a major hazard and obstacle B. ice at sea is one topic out of several other important topics related to cold water operations (regulations, crew, vessel, performance, safety...)
<p>SURVEY QUESTION:</p> <p>2) How are mariners trained to use ice information?</p>	<ul style="list-style-type: none"> A. Understand ice basics using WMO material and definitions B. Analyze and understand ice information from ice information sources C. Understand risk of ice, ice dynamics and local conditions D. Ice is coming into simulators E. Use of photos and satellite images <p>Identified potential for the ice services:</p> <ul style="list-style-type: none"> 1. Lessons in ice basics and ice information including limitations 2. Simple / self-explaining ice products 3. Satellite image analysis guide to mariner 4. Provision/advisory concerning ice information examples to simulators 5. Ice in ECDIS
<p>SURVEY QUESTION:</p> <p>3) Which sources of ice information are used for training and making decisions? Are there special needs at sea?</p>	<ul style="list-style-type: none"> A. Real time ice information and satellite images (if available/accessible) B. One-stop access to ice information C. Recognized reference document D. Freely available data E. Combination of ice information sources <p>Identified potential for the ice services:</p> <ul style="list-style-type: none"> 1. Promote suite of ice products available 2. More forecast products 3. Potential/limitations of ice products available 4. Use of ice information in simulator 5. Satellite images and ice information to be vessel specific

	<ol style="list-style-type: none"> 6. High resolution ice information and satellite images in critical situations 7. Risk based products (AIRSS, POLARIS, isolated/few/many)
<p>SURVEY QUESTION:</p> <p>4) Which ice services and other data providers do you refer to?</p>	<ol style="list-style-type: none"> A. All ice services were referenced including the Ice Logistics Portal B. Selected open portals and satellite data providers C. Few commercial ice information providers <p>Identified potential for the ice services:</p> <ol style="list-style-type: none"> 1. All ice services, except CIS, lack web site material for education and documentation 2. Lectures focused on user interface, products relevance, accuracy, download and display 3. Ice specialist joining training module (on site, virtual)
<p>SURVEY QUESTION:</p> <p>5) Which ice data would be beneficial in navigation simulators?</p>	<ol style="list-style-type: none"> A. Realistic ice in simulators is challenging in certain situations B. Smooth import and direct linkage between ice chart, weather data and ice in simulator C. Important to merge/overlay simulation, radar, ice chart and satellite image D. Small scale ice is important (include stage of dev., icebergs, strings...) <p>Identified potential for the ice services:</p> <ol style="list-style-type: none"> 1. Improve mariner access to SIGRID3 files 2. Improve mariner access to satellite imagery 3. Improve mariner access to archived ice information and satellite data 4. Develop/maintain baseline production for sea ice concentration, stage of development and icebergs. 5. More information on small scale ice.
<p>SURVEY QUESTION:</p> <p>6) Do you see a potential / primary role / obstacle in closer engagement with the ice services?</p>	<p>Identified potential for the ice services:</p> <ol style="list-style-type: none"> 1. More Ice service briefings and tutorials on products, services, and latest improvements 2. Options for intensified support during emergencies 3. Ice services to promote their products, expertise, and services better - will reduce risk 4. Ice services to be more visible at training centers - will increase exchange of experience 5. Handbook in ice observation linking ice chart interpretation 6. Closer engagement will point out gaps

	<ol style="list-style-type: none"> 7. Ice services to put more resources into client relations and interactions with mariner 8. Ice service expertise and information to be free of charge (training centers budget limited) 9. Marine training centers cannot always effort external professionals to teach
<p>SURVEY QUESTION:</p> <p>7) Is there a need for closer collaboration between ice services and marine training centers?</p>	<p>Identified potential for the ice services:</p> <ol style="list-style-type: none"> 1. Mariners to debrief on products and services 2. Informal/direct working relationships between ice services and mariners will improve products and services 3. Many ice products are focused on experienced users 4. The less experienced need easy access to ice products (one stop “shopping”) 5. Ice products to be easy to access / understand / implement onboard 6. POLARIS maps using ice analysis 7. Ice service information is considered conservative by industry - gap in implementing focused services 8. Explain various steps in ice chart production 9. Ice services and training centers jointly develop training program
<p>SURVEY QUESTION:</p> <p>8) Any additional comments:</p>	<ol style="list-style-type: none"> A. Mariners to walk away from course with a list of resources B. Accessible, timely and accurate ice information is essential C. Access to (near-future) forecast products D. We supply the best possible products to our pilots E. Implementation of realistic ice scenarios in simulator F. Ice services to test new ice information and simulator tools G. Many training centers around the Globe can barely meet Polar Code requirements but are “approved” by flag states with no ice and instructors without any ice experience H. Ice services to provide courses in SAR data analysis I. Ice analysts to spend time on ships operating in ice for better understanding of context

Messages to Ice Service Heads:

The thirteen survey responses contain very comprehensive and extremely valuable information for the ice services. It is clear that the ice services from around the Globe are well recognized and play an important role in the mariner's daily working life, education and training. The majority of the responses also make it clear that there is room for product improvement and enhanced ice service collaboration with the marine training centers to improve the contents of Polar Code courses (Basic/Advanced level).

The opportunities for future and enhanced collaboration between ice services and marine training centers are pointed out in different areas, as listed below (numbering does not indicate importance or priority).

FRAMEWORK FOR COLLABORATION

1. Ice information (background, insight, material) is essential on Polar Code courses and is used widely by the serious players (mariners, training centers).
2. Ice at sea is one topic out of several other important topics on Polar Code courses (regulations, crew, vessel, performance, safety...) which means there is limited time to focus on ice.
3. Many marine training centers around the Globe issue Polar Code certificates, approved by national maritime agencies (Bahamas, India, Philippines...), BUT the reality is that these mariners are not trained seriously for Polar navigation.
4. All marine training centers approached by the Task Team are considered "best in class" for training and preparing mariners for Polar Waters operations.

HIGH LEVEL RECCOMENDATIONS TO ICE SERVICES HEADS:

1. More focus on **awareness and promotion** of your current production and expertise.
2. More focus on **feedback and interaction** with users for implementation and improvement of production.

The detailed analysis of the of the survey feedback identified a large number of suggestions, needs and requirements which can be grouped and directed linked to the following two headlines:

ICE CENTER PRODUCTION SPECIFIC RECCOMENDATIONS

1. Make your SIGRID3 files available to mariners
2. Make relevant satellite data available to mariners
3. Develop/issue simplified ice products
4. Develop/issue focused ice forecast products
5. Develop/issue ice statistics as required by the Polar Code
6. Develop/issue high resolution products for targeted users or critical ice-covered regions
7. Provide risk-based products (POLARIS, isolated/few/many bergs)
8. Any ice product must be easily accessible, timely and accurate
9. Deploy ice analysts on ships in ice-covered waters to gain experience and interact with mariners

MARINER TRAINING SPECIFIC RECOMMENDATIONS

1. WMO Sea Ice Nomenclature and WMO-574 Ice Services Around the World are essential and should be updated frequently.
2. Develop a handbook describing ice observation technology, including advantages and limitations.
3. Provide a description of ice products, services, access, and a combination of ice products, targeted at mariners.
4. Maintain an updated awareness of the current setup, changes, developments, and achievements.
5. Provide a handbook in satellite image analysis.
6. Provide a handbook describing ice analysis.
7. Ice service specialists should participate in parts of Polar Code courses.
8. Make ice products available for display in ECDIS.
9. Develop examples for use in simulators.
10. Ice service specialist should evaluate ice scenarios and new tools in simulators at the training facility.

The production specific recommendations are considered more as guidance for ice services in shaping their individual strategies and joint efforts.

The mariner training specific recommendations provide excellent topics and directions for the IICWG to consider, discuss and decide on for the next phase of marine training center engagement. This will be addressed in a dedicated session at the 21st Meeting in the International Ice Charting Working Group, in September 2020. The preparation of the actual IICWG session is not included in this document.

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