



Australian Government

Assessment Requirements for MARN012 Manage advanced operations of ships in polar waters

Release: 1

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Modification History

Release 1. This is the first release of this unit of competency in the MAR Maritime Training Package.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least two occasions and include:

- communicating with icebreaker, other vessels in the area and with rescue coordination centres, where applicable
- determining limitations of navigational equipment and communication systems in polar waters
- establishing bridge watch team which is consistent with environmental conditions and vessel equipment and ice class
- evaluating limitations and determining the extent to which information is suitable for safe navigation and identifying navigational solutions in hazard conditions
- identifying presentations of various ice conditions as they appear on radar
- interpreting visuals of ice conditions as they appear on radar
- measuring and observing environmental conditions
- modifying and deviating voyage plan for dynamic ice conditions
- manoeuvring of a vessel through ice, including:
 - manoeuvring a vessel through moderate ice concentration (range of 1/10 to 5/10)
 - manoeuvring a vessel through dense ice concentration (range of 6/10 to 10/10)
- preparing and conducting risk assessment before approaching ice
- using and interpreting information from navigational equipment, nautical charts, nautical publications and related documentation
- using icebreaker terminology and communication, where applicable.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of elements and performance criteria and include knowledge of:

- effects of handling ship in various ice concentration and coverage including risks associated with navigation in ice, including:
 - avoid turning and backing simultaneously
- equipment limitations, including:
 - communication systems

- discrimination of radar targets and ice features in ice clutter
- electronic positioning systems at high latitude
- hazards associated with limited terrestrial navigational aids in polar regions
- high latitude errors on compasses
- nautical charts and pilot descriptions
- national, international and regional standards, including:
 - International Convention for the Safety of Life at Sea (SOLAS)
 - International Code for Ships Operating in Polar Waters (Polar Code)
 - International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW)
 - International Convention for the Prevention of Pollution from Ships (MARPOL)
 - International Maritime Organization (IMO) standards for operation in remote areas
 - International Code of Signals
- operate and manoeuvre a ship in ice, including:
 - anchoring in ice, including:
 - dangers to anchoring system
 - ice accretion to hawse pipe and ground tackle
 - communications including:
 - icebreaker communication
 - communication with other vessels in the area
 - communication with Rescue Coordination Centres
 - conditions for safe entry and exit to and from ice and open water, including:
 - avoiding icebergs
 - cracks
 - dangerous ice conditions
 - leads
 - maintaining safe distance to icebergs
 - conditions which impact polar visibility and give indications of:
 - ice blink
 - local ice
 - refraction
 - sea smoke
 - water conditions
 - water sky
 - need for bridge watch team augmentation based on:
 - environmental conditions
 - vessel equipment
 - vessel ice class
 - icebreaker convoy terminology, including:
 - convoy communications

- icebreaker direction
- moving in convoy
- ice ramming procedures, including double and single ramming passage
- methods to avoid besetment, free best vessel and consequences of besetment
- preparation and risk assessment before approaching ice and icebergs and conditions, including:
 - darkness
 - fog
 - pressure ice
 - swell
 - wind
- presentations of various ice conditions as they appear on radar
- towing and rescue in ice, including risks associated with operation
- use of different type of propulsion and rudder systems, including:
 - avoiding damage when operating in ice
 - limitations in ice
- use of heeling and trim systems, including hazards associated with operation and various techniques to safely dock and undock in ice covered waters
- publications and manuals, including:
 - Polar Water Operations Manual (PWOM)
 - shipboard documentation
- ship crew and passenger safety, including:
 - limitations of firefighting systems and lifesaving applications due to low air temperatures
 - procedures and techniques for abandoning the ship and survival on ice and in ice covered waters
 - unique concerns when conducting emergency drills in ice and low temperatures
 - unique concerns when conducting emergency response in ice and low air and water temperatures
- voyage planning and reporting, including:
 - development of safe routeing and passage planning to avoid ice where possible
 - evaluating information to determine if it is suitable for safe navigation
 - information sources
 - limitations of hydrographic information and charts in polar regions
 - passage planning deviation and modification for dynamic ice conditions
 - reporting regimes in polar waters.

Assessment Conditions

Assessors must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations current at the time of assessment.

As a minimum, assessment must satisfy applicable regulatory requirements, which include

requirements in the Standards for Registered Training Organisations current at the time of assessment.

Training and assessment must meet Australian Maritime Safety Authority (AMSA) regulatory requirements which are mandated in sections of International Maritime Organization (IMO) model courses for AMSA accreditation.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Practical assessment must occur in a workplace, or realistic simulated workplace, under the normal range of workplace conditions.

Simulations and scenarios may be used where situations cannot be provided in the workplace or may occur only rarely, in particular for situations relating to emergency procedures and adverse weather conditions where assessment would be unsafe, impractical or may lead to environmental damage.

Resources for assessment must include access to:

- applicable documentation, such as legislation, regulations, codes of practice, workplace procedures and operational manuals
- tools, equipment, machinery, materials and personal protective equipment (PPE) currently used in industry.

Links

Companion Volume implementation guide can be found in VetNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=772efb7b-4cce-47fe-9bbd-ee3b1d1eb4c2>