



Australian Government

Assessment Requirements for MARH024 Use of radar and other bridge equipment to maintain safety of navigation

Release: 2

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Modification History

Release 2. This is the second release of this unit of competency in the MAR Maritime Training Package.

- Minor statement changes in unit Application.

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 one occasion and include:

- communicating clearly and concisely at all times
- correctly interpreting and analysing information obtained from radar and automatic radar plotting aids (ARPAs) taking into account the limitations of equipment and prevailing circumstances and conditions
- correctly interpreting information received from other bridge equipment and applying appropriate corrections
- determining latitude by meridian altitude
- making adjustments to vessel course and speed to maintain safety of navigation
- making decisions to amend course or speed in a timely manner according to accepted navigation practice
- making manoeuvring signals at the appropriate time according to International Regulations for Preventing Collisions at Sea (COLREGs)
- planning and conducting celestial observations using a sextant and plotting a position
- taking actions to avoid close encounter or collision according to COLREGs
- using navigational information to aid in command decisions.

Knowledge 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 and include knowledge of:

- ARPA system performance and accuracy, tracking capabilities, limitations and processing delays
- blind pilotage planning
- bridge navigational watch alarm systems (BNWAS), including:
 - alarms
 - carriage requirements

- design
- operational sequences
- purpose
- COLREGs
- course and speed of other vessels
- critical echoes, exclusion areas and trial manoeuvres
- detecting course and speed changes of other vessels
- detection of misrepresentation of information, false echoes, sea and rain clutter, racons and search and rescue transponders (SARTs)
- effect of changes in own vessel course and speed or both
- errors of magnetic compass and their function
- factors affecting performance and accuracy of radar and other navigational equipment
- fundamentals of radar and ARPAs
- ground and sea stabilisation and their effects on ARPA data
- identification of critical echoes
- magnetic and gyrocompasses, including rate of turn gyro
- meeting overtaking vessels
- methods of position fixing using celestial observations with a sextant
- methods of target acquisition and their limitations
- misrepresentation including:
 - compass errors
 - false echoes
 - incorrect radar settings for heading marker and range marker
 - incorrect setting up of electronic chart system (ECS) or electronic chart display and information system (ECDIS)
 - incorrect setting up of satellite navigation systems
 - satellite and differential satellite navigation system errors
 - sea and rain clutter returns
- navigational data, including:
 - navigation safety warning
 - recording of courses steered
 - weather and oceanographic reports
- parallel indexing
- plotting techniques and relative and true-motion concepts
- principal types of ARPAs, their display characteristics, performance standards and the consequences of over reliance on ARPAs
- principles of the magnetic compass and their correction
- range and bearing by radar
- sea and ground stabilisation and their effect on ARPA data
- setting up and maintaining displays on radar
- time, distance and bearing of closest point of approach of a closing vessel

- true and relative vectors, graphic representation of target information and danger areas
- use of operational warnings and system tests
- voyage data recorder and simplified voyage data recorder, including:
 - authorised access to data by personnel for investigations
 - carriage requirements
 - data items recorded
 - data output interface
 - data security and software
 - design and operation
 - purpose
- work health and safety (WHS)/occupational health and safety (OHS) requirements and work practices.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

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 relevant personal protective equipment (PPE) currently used in industry.

Links

Companion Volume Implementation Guides are found in VETNet -

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