



Australian Government

MARF052 Apply nautical knowledge

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.

Application

This unit involves the skills and knowledge required to apply nautical knowledge as described in Module 4 of International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) Model Course C0103-1 Vessel Traffic Services Operator Training, including:

- chartwork
- International Regulations for Preventing Collisions at Sea (COLREGS)
- aids to navigation
- navigational aids (shipborne)
- shipboard knowledge
- port operations and other allied services.

This unit applies to people working in the maritime industry in the capacity of:

- Vessel Traffic Services (VTS) Operator.

IMO Regulatory framework

International Convention for the Safety of Life at Sea (SOLAS) V/12 states that Contracting Governments planning and implementing VTS shall, wherever possible, follow the guidelines developed by the International Maritime Organization (IMO).

IMO Resolution A.1158(32) Guidelines for VTS states:

- VTS personnel should only be considered competent when appropriately trained and qualified for their VTS duties. This includes, amongst other things, that personnel have satisfactorily completed generic VTS training approved by a competent authority.
- IALA publishes standards and associated recommendations, guidelines and model courses specifically related to the establishment and operation of VTS contribute to achieving worldwide harmonization of VTS.
- Contracting Governments are encouraged to take into account IALA standards and associated recommendations, guidelines and model courses specifically related to the operation of VTS.

Licensing/Regulatory Information

Legislative and regulatory requirements are applicable to this qualification.

- Marine Order 64 (Vessel Traffic Services)
- RTOs must:

- demonstrate compliance with IALA Standard 1050 – Training and Certification
- take into account IALA standards and associated recommendations, guidelines and model courses.

Pre-requisite Unit

Not Applicable

Competency Field

F – Operational Quality and Safety

Unit Sector

Maritime Sector

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Carry out chartwork	1.1	Information obtained from navigational charts and publications is relevant, interpreted correctly and applied
	1.2	Tools associated with chart work are applied
	1.3	Calculations and measurements of navigation information are applied
2 Explain collision regulations, role of aids to navigation and navigational aids	2.1	Application and intent of COLREGs is described
	2.2	Aids to navigation to enhance safe and efficient navigation of individual vessels and/or vessel

			traffic are described
		2.3	Shipborne navigational aids to assist in the navigation of ships are described
3	Explain shipboard and port characteristics	3.1	Information relevant to ship design, meteorological and hydrographic conditions that may influence the monitoring and management of ship traffic is explained
		3.2	Information relevant to port operations and allied services that may influence the monitoring and management of ship traffic are explained

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the MAR Maritime Training Package Companion Volume Implementation Guide.

Unit Mapping Information

This is a new unit. No equivalent unit.

Links

Companion Volume Implementation Guides are found in VETNet -

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

Assessment Requirements for MARF052 Apply nautical knowledge

Modification History

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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 occasion and include:

- applying fundamental principles of International Regulations for Preventing Collisions at Sea (COLREGS) within a Vessel Traffic Service (VTS) area (where applicable), including:
 - steering and sailing rules
 - conduct of vessel in specific conditions
- explaining the methodology used to find positions on the globe, chart projections and geodetic datums
- explaining the use of course, including course made good, course to make good, track and heading
- explaining true and magnetic courses, including:
 - laying of a true course
 - Dead Reckoning (DR) positions
 - compass and magnetic courses
- explaining the effect of tides, tidal streams and currents on vessel movements in the VTS area, including:
 - using tide and current tide tables
 - using tidal streams to calculate Estimated Position (EP)
- explaining a port operating environment including allied services, other relevant organisations and stakeholders
- explaining the fundamental principles of relevant sections of the COLREGS
- performing speed, distance and time calculations
- plotting positions on charts, including using chart symbols, basic plotting instruments and using various projections as appropriate.

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:

- chartwork, including:
 - chart and publication correction

- use of electronic and paper navigational charts
- plotting positions of ships on charts
- speed, distance and time calculations
- theory and use of true and magnetic courses
- importance of passage planning, including contingency planning
- tides, tidal streams and currents on vessel movements
- collision regulations, including:
 - relevant sections of COLREGS and their application in a VTS, area, including:
 - overview of COLREGS (Part A, B, C, D, E, F)
 - Part A – General
 - international distress signals (annex IV to the COLREGS)
 - enforcement of COLREGS
 - Part B – Steering and sailing rules
 - conduct of vessel in specific conditions, including reduced visibility, narrow channels and traffic separation schemes
- navigation and aids to navigation, including:
 - basics of the International Maritime Buoyage System, including:
 - global navigation satellite system (GNSS) and differential GNSS (DGNSS)
 - radar beacons (RACONS/remarks)
 - regulations relevant to buoyage systems
 - theory and use of virtual aids to navigation
- navigation and navigational aids (shipborne), including:
 - theory of radar and use of radar on board ships
 - theory and use of gyro and magnetic compasses on board vessels
 - theory and use of other navigational aids
 - port operating environment, including allied services and other relevant organisations and stakeholders, including International Ship and Port Facility Security Code (ISPS) code in relation to ship and port security
- shipboard knowledge, including:
 - different types of vessels and cargo, including International Maritime Dangerous Goods (IMDG) Code
 - external forces on vessels
 - ship movement and ship stability, including list and ship stability
 - propulsion systems
 - ship handling
 - ship terminology (technical and nautical phrases)
 - theory and practice of ship handling
 - vessel bridge procedures.

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.

Assessment must occur in workplace operational situations, where this is not appropriate, assessment must occur in simulated workplace operational situations that replicate workplace conditions.

Resources for assessment must include access to:

- applicable documentation such as policies, workplace procedures, codes of practice, operation manuals, relevant sections of COLREGS, navigational charts (electronic and paper) and publications.

Links

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