Australian Government

MARH2001A Plan and navigate a passage for a vessel up to 12 metres

Release 1

INDUSTRY SKILLS COUNCILS
Creating Australia's Future

MARH2001A Plan and navigate a passage for a vessel up to 12 metres

Modification History

Release 1
This is the first release of this unit.
This unit replaces and is equivalent to TDMMH1207B Plan and navigate a short voyage within inshore limits.

Unit Descriptor

This unit involves the skills and knowledge required to conduct the passage of a vessel up to 12 metres within the 12 nautical mile (nm) limit; it includes using the range of equipment found on a vessel to plan and safely conduct the passage.

Application of the Unit

This unit applies to those working as Coxswain Grade 1 or a Coxswain Grade 2 on a range of vessels up to 12 metres within the 12 (nm) limit.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1 Plan passage	1.1	Appropriate ***charts and publications*** are accessed and checked for currency
	1.2	Destination is identified, and course and waypoints are plotted
	1.3	Estimated time of arrival (ETA) at waypoints and final destination are calculated
	1.4	Safe passage is plotted to comply with all navigational buoys, marks and beacons
	1.5	***Navigational hazards*** are identified to avoid dangers to vessel
	1.6	Weather information is accessed to determine expected weather pattern for intended passage
	1.7	Proposed course is modified, if necessary, to meet expected weather conditions
	1.8	Fuel consumption for passage, including a reserve, is calculated
2 Conduct a pre-departure check	2.1	***Propulsion equipment*** and ***alarms*** are tested for serviceability and vessel hull is checked for seaworthiness
	2.2	***Navigation equipment*** and alarms are checked to ensure they are in proper working condition and set for the passage
	2.3	Navigation equipment is checked for errors and allowances are made in planning the passage
	2.4	Fuel is checked to ensure there is adequate fuel on board for intended passage
	2.5	***Safety equipment*** is checked for compliance with legislation
	2.6	***Communications equipment*** is checked to ensure it is in proper working condition
	2.7	***Anchoring and mooring equipment*** is checked to ensure it is adequate and in good condition
	2.8	Vessel and equipment are secured for sea
3 Conduct passage	3.1	Local authorities are advised of departure and ***passage plan***
	3.2	Vessel is steered and propulsion equipment is operated in a safe and controlled manner to complete pre-planned course

	3.3 Pilotage techniques and navigational equipment are used to monitor vessel position and maintain vessel in safe waters at all times
	3.4 Errors from navigational equipment are correctly applied to maintain planned passage
	3.5 Navigational buoys, marks and beacons are identified and complied with
	3.6 Situational awareness is maintained to avoid navigational hazards and to comply with regulations for prevention of collision at sea
	3.7 Weather and sea conditions are monitored during passage and correct responses are made for changing conditions
4 Complete passage	4.1 Local authority is advised of completion of passage
	4.2 Vessel is checked to ensure it is securely moored
	4.3 Propulsion equipment is checked to ensure it is safely shut down and secured
	4.4 Navigational equipment is switched off

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required Skills:

- Apply International Regulations for the Prevention of Collision at Sea
- Apply weather information during passage planning and explain expected weather patterns
- Correctly interpret weather information received
- Explain impact of tidal variation on chart depths
- Identify and comply with all navigational buoys, marks and beacons
- Identify and respond to relevant proximity alarms
- Identify:
  - courses to steer between turning points
  - navigational hazards
  - times and heights of high and low water from local tide tables
- Obtain weather information applicable to an intended passage
- Plot the position derived from GPS and explain the dangers of reliance on the use of GPS in coastal areas
- Plot visual bearings on a chart to derive a position
- Relate information in forecasts to conditions expected for small vessels
- Specify fuel consumption and time at turning points
- Steer a pre-planned course

Required Knowledge:

- Action to be taken on receiving adverse weather report and on encountering heavy weather
- Appreciation of manoeuvring difficulties of larger vessels
- Basic information contained in a navigation chart
- Basic meteorological terms
- Basic pilotage techniques
- Chart information (symbols and abbreviations)
- Coastal features
- Cyclonic development
- Dangers to navigation
- Electronic aids and their limitations including sourcing and applying chart corrections
- Local weather patterns including features on a synoptic weather chart
- Propulsion equipment

- Radio equipment
- Sources of weather reports and warnings
- Speed, distance and time calculations
- Types of reports available
- Use of a compass and compass errors
- Use of local tide tables
- Work health and safety (WHS)/occupational health and safety (OHS) requirements and work practices

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, the required skills and knowledge, the range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the Elements, Performance Criteria, Required Skills, Required Knowledge and include:

- plotting a planned passage both electronically and on a paper chart
- awareness of one's surroundings and changes to these surroundings
- working safely at all times.

Context of and specific resources for assessment

Performance is demonstrated consistently over time and in a suitable range of contexts.

Resources for assessment include access to:

- marine operations site with an appropriate vessel up to 12 metres or an approved marine simulator to demonstrate the planning and navigation of a passage within the 12 nm limit
- tools, equipment and personal protective equipment currently used in industry
- relevant regulatory and equipment documentation that impacts on work activities
- range of relevant exercises, case studies and/or other simulated practical and knowledge assessments
- appropriate range of relevant operational situations in the workplace.

In both real and simulated environments, access is required to:

- relevant and appropriate materials and equipment
- applicable documentation including workplace procedures, regulations, codes of practice and operation manuals.

Method of assessment

Practical assessment must occur in an:

- appropriately simulated workplace environment and/or
- appropriate range of situations in the workplace.

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate to this unit:

- direct observation of the candidate planning and navigating a passage within the 12 nm limit
- direct observation of the candidate applying relevant WHS/OHS requirements and work practices.

Guidance information for assessment

Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended.

In all cases where practical assessment is used it should be combined with targeted questioning to assess Required Knowledge.

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

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below.

Charts and publications must include:	• Electronic charts • Notice to Mariners • Paper charts • Tide tables
Navigational hazards may include:	• Restricted visibility • Shallow ground • Traffic • Unlit beacons
Propulsion equipment may include:	• Inboard engine • Outboard engine
Alarms may include:	• Bilge alarms • Depth alarms • Engine alarms • Off-course alarms • Radar range alarms
Navigation equipment may include:	• Automatic Identification Systems (AIS) • Compass • Echo sounder • Electronic Chart Systems (ECS) and plotter • Paper charts • GPS • Radar
Safety equipment must include:	• Distress flares/pyrotechnics • Electronic position indicating radio beacon (EPIRB) • Firefighting equipment • Life jackets • Life rafts and hydrostatic release systems
Communications equipment may include:	• HF radio • VHF radio
Anchoring and mooring equipment may include:	• Anchor • Mooring lines • Sea anchors
Passage plan must include:	• Anticipated weather conditions • Courses to steer or knowledge of navigation markers during the passage

- Depths of water throughout the passage
- ETA at destination
- Tidal information

Unit Sector(s)

Not applicable.

Competency Field

Navigation