



Australian Government

Department of Education, Employment and Workplace Relations

TDMMH1207B PLAN AND NAVIGATE A SHORT VOYAGE WITHIN INSHORE LIMITS

Revision Number: 1

TDMMH1207B PLAN AND NAVIGATE A SHORT VOYAGE WITHIN INSHORE LIMITS

Modification History

Not applicable.

Unit Descriptor

UNIT DESCRIPTOR:

This unit involves the skills and knowledge required to navigate a small vessel on a short voyage within inshore limits (15 nm). This includes the use of a navigational chart, determination of a vessel's position, the use of a magnetic compass and the gathering and interpretation of local weather forecast information.

Application of the Unit

Application of the unit	The unit has applications in qualifications for Coxswains and Masters of commercial vessels operating within inshore coastal limits, i.e. primarily Coxswain - Certificate II in Transport&Distribution (Coastal Maritime Operations - Coxswain). However, the unit is also applicable to qualifications for Masters of larger vessels operating under restricted certification.
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Licensing/Regulatory Information

Licensing/legislative requirements	The unit is consistent with the relevant maritime regulations describing mandatory minimum requirements for a Coxswain planning and navigation of short voyages of small commercial vessels within inshore limits. This includes applicable sections of State/Territory maritime licensing and regulatory requirements.
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Pre-Requisites

Not applicable.

Employability Skills Information

Not applicable.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Use a navigational chart	- a Coastal navigational charts are correctly used to plan a safe route and identify coastal features, lights, buoyage and navigational hazards - b The compass course to steer between two points is determined
2 Fix a small vessel's position	- a Ranges and bearings are matched with charted features, combined with depth soundings and plotted onto a chart - b A position on a chart from derived GPS readings is plotted in accordance with established procedures
3 Obtain weather and tidal information	- a Weather forecast current for planned voyage is obtained from coast radio station, internet and media and interpreted in terms of the implications for the planned voyage - b Local tide tables are used to determine times and heights of low and high tides. - c Depth of water at locations on a coastal chart is estimated using charted depth and tidal information

ELEMENT	PERFORMANCE CRITERIA
4 Navigate a short inshore passage	- a Observations of sea and weather are appropriate and are applied during navigation of the vessel on the planned voyage - b Navigational hazards are identified and avoided - c Lights, buoyage and coastal features are used to pilot vessel throughout planned voyage - d Vessel's position is fixed at appropriate times using methods appropriate to an inshore voyage - e The course steered is regularly monitored to ensure safe passage - f Alterations to course and speed are appropriate to prevailing circumstances and conditions and do not put at risk the safety of the vessel, passengers or crew. - g Operational limits of vessel's propulsion, steering, power systems, trim and stability are not exceeded during navigational manoeuvres

Required Skills and Knowledge

REQUIRED KNOWLEDGE

This describes the knowledge required for this unit.

- 1 Relevant State and Territory maritime regulations
- 2 Basic principles and procedures of navigation and inshore passage planning, including contingency planning
- 3 Information required to develop a typical effective inshore passage plan
- 4 Procedures for using and handling navigational charts, nautical publications and related documentation
- 5 Principles and procedures for fixing a small vessel's position
- 6 Procedures for converting one set of coordinates to another
- 7 Procedures for the calculation of the height of tide for a given time at any place listed using tide tables
- 8 Errors in common position fixing systems and their effect on observed positions
- 9 Methods for controlling small vessel speed and direction
- 10 Effects on vessel handling of wind, currents and bottom topography
- 11 Manoeuvring procedures in and near traffic separation schemes and vessel traffic service areas
- 12 Small vessel reporting systems
- 13 Procedures to correct a magnetic compass direction/reading for variation and deviation

REQUIRED SKILLS

This describes the basic skills required for this unit.

- 1 Communicate effectively with others when planning and navigating an inshore voyage
- 2 Read and interpret operational requirements for a commercial vessel in terms of their implications for voyage planning and navigation

REQUIRED SKILLS

- 3 Read and interpret charts and weather and tidal information as required when planning and navigating a short voyage within inshore limits
- 4 Read and interpret relevant marine regulations, rules and instructions
- 5 Collect, manage and interpret information required for the safe navigation of the vessel
- 6 Plan the timing and sequence of vessel operations to be appropriate to the prevailing circumstances, sea and weather conditions and any navigational hazards
- 7 Work collaboratively with others when planning vessel operations
- 8 Make appropriate estimates and calculations required for planning and navigating an inshore voyage on a coastal vessel of less than 80 metres within inshore limits (e.g. fuel, distance, speed, time, etc.)
- 9 Fix a vessel's position within inshore limits using appropriate methods
- 10 Convert one set of coordinates to another when plotting a position on a chart
- 11 Recognise voyage planning and position fixing problems that may be experienced for small vessels on inshore voyages and implement appropriate action and solutions
- 12 Correct a magnetic compass direction/reading for variation and deviation (suitable for an inshore passage)
- 13 Conduct voyage as planned

Evidence Guide

Evidence Guide

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The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

1 Critical aspects of evidence required to demonstrate competency in this unit	Assessment must confirm appropriate knowledge and skills to: - a Plan the inshore passage of a small vessel - b Fix the position of a small vessel within inshore waters using all acceptable and relevant methods - c Identify typical navigational hazards and make due allowance for them when planning an inshore voyage - d Conduct the passage of a small vessel on an inshore voyage, taking into account all relevant navigational hazards - e Access, use and maintain relevant coastal navigational charts, nautical publications and related documentation - f Communicate effectively with others when planning an inshore voyage and conducting navigation - g Follow reporting procedures in accordance with the requirements of relevant maritime regulations and authorities - h Recognise the operational and navigational safety consequences of estimating bearing and courses without compass error information
2 Evidence required for demonstration of consistent performance	- a Performance is demonstrated consistently over a period of time and in a suitable range of contexts - b Consistently applies underpinning knowledge and skills when: 1 using a navigational chart 2 fixing a small vessel's position

Evidence Guide

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- 3 obtaining and interpreting weather and tidal information
- 4 navigating a short inshore passage
- c Shows evidence of application of relevant workplace and regulatory procedures, including:
 - 1 relevant maritime regulations and notices
 - 2 OH&S regulations and hazard prevention policies and procedures
 - 3 job procedures and work instructions
- d Appropriate action is taken promptly in the event of any problems that may occur when planning or navigating an inshore as per established procedures

Evidence Guide (continued)

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2 Evidence required for demonstration of consistent performance (continued)	- e Work is completed systematically with required attention to detail - f Recognises and adapts appropriately to cultural differences in the workplace, including modes of behaviour and interactions among crew and others
3 Context of assessment	- a Assessment of competency must comply with the assessment requirements of the relevant maritime regulations - b Assessment of this unit must be undertaken within relevant marine authority approved and audited arrangements by a registered training organisation: 1 As a minimum, assessment of knowledge must be conducted through appropriate written/oral examinations, and

Evidence Guide (continued)

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	2 Appropriate practical assessment must occur: - i at the registered training organisation; and/or - ii on an appropriate working or training vessel
4 Specific resources required for assessment	Access is required to opportunities to: - a plan a simulated inshore passage and conduct navigation using an appropriate marine simulator in simulated coastal areas and across an appropriate range of navigational hazards; and/or - b assist in the planning and conduct of an actual passage for a small commercial vessel less than 80 metres in length engaged in an inshore voyage

Range Statement

Range Statement

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The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

VARIABLE

SCOPE

1. GENERAL CONTEXT

a. Work must be carried out:	1 in accordance with the relevant maritime regulations

Range Statement

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b. Work is performed:	1 within a defined range of operations and routine procedures, with responsibility for own outputs in relation to specified quality standards
c. Work involves:	1 the application of basic navigational principles and procedures required to plan and navigate an inshore voyage for a vessel of up to 80 m in length. Limited accountability and responsibility for self and others in planning a coastal voyage and conducting navigation is involved
d. Work requires:	1 some discretion and judgement in devising and conducting the passage of a vessel up to 80 m in length operating within inshore limits

2. WORKSITE ENVIRONMENT

a Vessel may include:	1 any commercial vessel less than 80 metres in length engaged on an inshore passage, i.e. within 15 nm
b Voyage to be planned and conducted may include:	1 any inshore voyage navigable by the size and type of small vessel concerned 2 passages through 3 traffic separation schemes in inshore areas 4 tidal restricted areas 5 VTS controlled areas
c Navigation may occur in conditions of:	1 clear visibility using visual navigational techniques 2 restricted visibility a combination of visual and electronic techniques

Range Statement

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| 3 | clear visibility using a combination of visual and electronic techniques |
| 4 | adverse seas and weather |

Range Statement (continued)

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VARIABLE	SCOPE
d Instrumentation and equipment used for navigation and fixing a small vessel's position may include:	1 GPS satellite navigation systems
	2 integrated navigation systems
	3 magnetic compasses
	4 gyro compasses and repeaters
	5 hand bearing compass
	6 chronometers and sextants
	7 azimuth mirrors and vanes
	8 pelorus
	9 doppler and electromagnetic logs
	10 depth sounders
	11 electronic plotters and chart systems
	12 radar (where applicable)

Range Statement (continued)

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e The use of navigational aids to assist safe navigation may include:	1 avoidance of collision with another vessel or navigational hazards 2 fixing the position of the small vessel 3 tracking of other vessels 4 assistance in making of command navigational decisions 5 navigating during search and rescue operations
f Position fixing techniques may include:	1 visual observation of landmarks, lighthouses, beacons and buoys 2 basic dead reckoning, taking into account winds tides currents and estimated speed 3 radar 4 GPS 5 electronic charts and plotters 6 continuous position monitoring
g Documentation and records may include:	1 operational orders and procedures 2 navigational charts of near coastal waters 3 meteorological and oceanographic information in publications and on internet websites

Range Statement (continued)

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VARIABLE	SCOPE
g Documentation and records may include: (continued)	4 coastal weather reports, charts and satellite images
	5 annual and weekly notices to mariners
	6 publications from the Australian Hydrographer, including radio signals, light lists, sailing directions, tide tables and chart catalogues
	7 navigational warning records
	8 National Standard for Commercial Vessels
	9 vessel's log
	10 vessel manufacturer's instructions and recommended procedures
	11 notices from relevant maritime and port authorities
h Applicable legislation, regulations and codes may include:	1 relevant sections of the State and Territory marine regulations
	2 relevant sections of the NSCV and USL Code
	3 regulations for preventing collisions at sea
	4 relevant international, Commonwealth, State and Territory OH&S legislation
	5 Guidelines and Criteria for Ship Reporting Systems
	6 port authority guides and instructions

Unit Sector(s)

Not applicable.

Field

Field MH Navigation

Relationship to other units

Relationship to other units	The unit may be assessed in conjunction with other units that relate to the functions of the occupation(s) concerned
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