



Australian Government

Department of Education, Employment and Workplace Relations

TDMMH801A Plan and navigate an inshore passage

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This unit involves the skills and knowledge required to plan and navigate an inshore passage for a small commercial vessel and determine the vessel's position. This includes the use of coastal navigational charts to plan and conduct the passage and the application of coastal navigational techniques involving a range of instrumentation and navigational aids.

The unit is consistent with the related functional standard in the Australian USL Code.

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Application of the Unit

Not applicable.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Not applicable.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

Elements and Performance Criteria

Element	Performance Criteria
1 Use and care for coastal navigational charts, nautical publications and related documentation	<p>1.1 Coastal navigational charts, nautical publications and related documentation are handled and used in ways that ensure continued availability, utility and length of life</p> <p>1.2 Navigational charts, nautical publications and related documentation are stored and maintained in accordance with established procedures and chart/publication publisher' instructions</p> <p>1.3 Navigational charts, nautical publications, notices to mariners and related documentation are filed in accordance with established procedures</p> <p>1.4 Coastal navigational charts, nautical publications, notices to mariners and related documentation are correctly used for voyage planning and identification of navigational hazards</p>
2 Plan route for inshore voyage	<p>2.1 Navigational hazards relevant to a proposed inshore voyage are identified using relevant navigational charts, nautical publications and related documentation</p> <p>2.2 The route for an inshore voyage is determined in accordance with operational instructions and navigational principles and taking due account of identified navigational hazards</p> <p>2.3 Critical points along the proposed route of the voyage are identified and recorded</p> <p>2.4 Appropriate actions to deal with the identified critical points are developed</p> <p>2.5 Potential navigational contingencies and problems that may occur along the planned inshore route are identified and appropriate strategies for dealing with them are developed and recorded</p>

- 3 Conduct an inshore passage
 - 3.1 Measurements and observations of sea and weather conditions are accurate and appropriate to the planned inshore passage of the small vessel
 - 3.2 Meteorological information and observations of sea and weather conditions are correctly interpreted and applied to decisions on the vessel's speed and direction
 - 3.3 Information from navigation systems is interpreted and applied to identify navigational hazards and to fix the small vessel's position and to enable decisions to be made concerning the vessel's speed and direction
 - 3.4 The selection of the mode of steering is the most appropriate for the prevailing weather, sea and traffic conditions and intended manoeuvres
 - 3.5 Required alterations to the small vessel's course or speed are made taking into account prevailing weather and sea conditions, the proximity and course of other vessels, relevant navigational hazards, buoyage, signage and overall passage plan requirements
 - 3.6 Alterations to the small vessel's course and speed are appropriate to prevailing circumstances and conditions, comply with relevant maritime regulations and do not put at risk the safety of the small vessel or its passengers and crew or that of other vessels, passengers or crew
 - 3.7 Signals relevant for navigational manoeuvres are made at the appropriate time in accordance with Australian and international regulations
 - 3.8 Operational limits of vessel propulsion, steering, power systems and overall trim and stability are not exceeded during navigational manoeuvres
- 4 Fix small vessel's position within a limited area
 - 4.1 Primary position fixing method is selected in accordance with prevailing conditions
 - 4.2 Position is fixed using the selected method using information derived from relevant navigational systems
 - 4.3 Checks are made for random, instrument, system

- and data errors and appropriate corrections and allowances are made to derived courses and bearings
- 4.4 Time interval between fixes is appropriate to the prevailing navigational conditions
 - 4.5 Verification of primary position fixing is regularly carried out using appropriate methods
 - 4.6 Performance checks and tests of navigation position fixing instruments and systems are carried out in accordance with company procedures and manufacturer's instructions
 - 4.7 Position of small vessel is recorded in accordance with regulations and established procedures
- 5 Document and report planned route and passage
- 5.1 Planned route for a small vessel's inshore voyage is recorded and reported in accordance with procedures and regulations
 - 5.2 Plans and strategies for dealing with critical situations and contingencies along the route of an inshore voyage are recorded
 - 5.3 Details of a n inshore passage including navigational incidents and related action taken are recorded in the vessel's log in accordance with relevant maritime regulations

Required Skills and Knowledge

Not applicable.

Evidence Guide

Critical aspects of evidence to be considered

Assessment must confirm appropriate knowledge and skills to:

Plan the inshore passage of a small vessel up to 24 metres in length

Fix the position of a small vessel within inshore waters using all acceptable methods

Identify typical navigational hazards and make due allowance for them when planning an inshore voyage

Conduct the passage of a small vessel up to 24 metres in length on an inshore voyage, taking into account all relevant navigational hazards

Access, use and maintain coastal navigational charts, nautical publications and related documentation

Communicate effectively with others planning an inshore voyage and conducting navigation

Follow reporting procedures in accordance with the relevant maritime regulations.

Interdependent assessment of units

This unit of competency must be assessed in conjunction with other mandatory units that form part of a job role of a master on a small commercial vessel up to 24 metres in length engaged on an inshore voyage.

Required knowledge and skills

Knowledge of relevant maritime regulations

Principles and procedures of navigation and inshore passage planning including contingency planning

Information required to develop a typical effective inshore passage plan

Procedures for filing and handling navigational charts, nautical publications and related documentation in serviceable condition

Principles and procedures for fixing a small vessel's position

Procedures for converting one set of coordinates to another

Procedures for the calculation of the height of tide for a given time at any place listed using tide tables

Procedures for the use of Nautical Almanac data and information when planning and conducting an inshore voyage, including calculation of errors due to common navigational approximations

Errors in common position fixing systems and their effect on observed positions

Methods for controlling small vessel speed and direction

Typical manoeuvring and engine characteristics for small vessels up to 24m in length on inshore voyages, including stopping distances and turning circles at various draughts, speeds and loading

Effects on shiphandling of wind, currents and bottom topography

Voyage planning and position fixing problems that may be experienced for small vessels on inshore voyages and appropriate action and solutions

Manoeuvring procedures in and near 'traffic separation schemes' and 'vessel traffic service areas'

Small vessel reporting systems

Ability to correct a magnetic compass direction/reading for variation and deviation

Ability to correct a gyro compass direction for gyro errors.

Resource implications

Access is required to opportunities to either:

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

assist in the planning and conduct of an actual passage for a for a small commercial vessel up to 24m in length engaged in an inshore voyage.

Consistency in performance

Applies underpinning knowledge and skills when:

planning and conducting an inshore passage

identifying and evaluating navigation problems and determining appropriate navigational solutions

interpreting and applying information derived from navigational equipment and systems

applying required precautions relevant to coastal voyage planning and navigation

fixing the position of the small vessel in an inshore area.

Shows evidence of application of relevant workplace and regulatory procedures including: relevant maritime regulations

reporting requirements for small vessels

job procedures and navigational instructions

use of relevant nautical publications and charts

procedures for the storage and maintenance of nautical publications and charts.

Action is taken promptly to report and/or rectify navigational errors and contingencies.

Work is completed systematically with required attention to detail.

Context for assessment

Assessment of competence must comply with the assessment requirements of the relevant maritime regulations.

Assessment of this unit must be undertaken within relevant marine authority approved and audited arrangements by a registered training organisation:

As a minimum, assessment of knowledge must be conducted through appropriate written/oral examinations

Appropriate practical assessment must occur:

at the registered training organisation, and/or

on an appropriate working or training vessel.

Critical aspects of evidence to be considered

Assessment must confirm appropriate knowledge and skills to:

Plan the inshore passage of a small vessel up to 24 metres in length

Fix the position of a small vessel within inshore waters using all acceptable methods

Identify typical navigational hazards and make due allowance for them when planning an inshore voyage

Conduct the passage of a small vessel up to 24 metres in length on an inshore voyage, taking into account all relevant navigational hazards

Access, use and maintain coastal navigational charts, nautical publications and related documentation

Communicate effectively with others planning an inshore voyage and conducting navigation

Follow reporting procedures in accordance with the relevant maritime regulations.

Interdependent assessment of units

This unit of competency must be assessed in conjunction with other mandatory units that form part of a job role of a master on a small commercial vessel up to 24 metres in length engaged on an inshore voyage.

Required knowledge and skills

Knowledge of relevant maritime regulations
Principles and procedures of navigation and inshore passage planning including contingency planning
Information required to develop a typical effective inshore passage plan
Procedures for filing and handling navigational charts, nautical publications and related documentation in serviceable condition
Principles and procedures for fixing a small vessel's position
Procedures for converting one set of coordinates to another
Procedures for the calculation of the height of tide for a given time at any place listed using tide tables
Procedures for the use of Nautical Almanac data and information when planning and conducting an inshore voyage, including calculation of errors due to common navigational approximations
Errors in common position fixing systems and their effect on observed positions
Methods for controlling small vessel speed and direction
Typical manoeuvring and engine characteristics for small vessels up to 24m in length on inshore voyages, including stopping distances and turning circles at various draughts, speeds and loading
Effects on shiphandling of wind, currents and bottom topography
Voyage planning and position fixing problems that may be experienced for small vessels on inshore voyages and appropriate action and solutions
Manoeuvring procedures in and near 'traffic separation schemes' and 'vessel traffic service areas'
Small vessel reporting systems
Ability to correct a magnetic compass direction/reading for variation and deviation
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Applies underpinning knowledge and skills when:
planning and conducting an inshore passage
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Range Statement

General context

Work must be carried out in compliance with the relevant maritime regulations.

Work is performed within defined operational procedures, with responsibility for own outputs and limited responsibility for others. It involves the application of nautical principles to the planning and conduct of an inshore passage and the fixing of a small vessel's position across a range of predictable inshore contexts.

Worksite environment

Vessel may include any commercial vessel up to 24 metres in length engaged on an inshore passage.

Voyages to be planned and conducted may include:

any inshore voyage navigable by the size and type of small vessel concerned
passages through:

traffic separation schemes in inshore areas

tidal restricted areas

VTS controlled areas.

Navigation may occur in conditions of:

clear visibility using visual navigational techniques

restricted visibility using parallel indexing and/or electronic chart systems

clear visibility using a combination of visual and electronic techniques.

Instrumentation and equipment used for navigation and fixing a small vessel's position may include:

radar

GPS satellite navigation systems

integrated navigation systems

magnetic compasses

gyro compasses and repeaters

chronometers and sextants

azimuth mirrors and vanes

pelorus

doppler and electromagnetic logs

depth sounders.

The use of navigational aids to assist safe navigation may include:

avoidance of collision with another vessel

fixing the position of the small vessel

tracking of other ships

assistance in making of command navigational decisions

navigating during search and rescue operations.

Position fixing techniques may include:

visual

landmarks

aids to navigation such as lighthouses, beacons and buoys

dead reckoning, taking into account winds tides currents and estimated speed

radar

continuous position monitoring.

Sources of information/documents

Documentation/records may include:

relevant maritime regulations
operational orders
navigational charts of inshore waters
annual and weekly notices to mariners
navigational warning records
small vessel's log
small vessel manufacturer's instructions and recommended procedures
instructions of relevant Maritime Authorities.

Applicable International, Australian and State/Territory regulations and legislation

Applicable procedures and codes may include:
relevant sections of the Australian USL Code
regulations for preventing collisions at sea
SOLAS Convention
relevant international, Australian and State/Territory OH&S legislation
Guidelines and Criteria for Ship Reporting Systems.

General context

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Unit Sector(s)

Not applicable.