



Australian Government

Department of Education, Employment and Workplace Relations

TDMMH607B PLAN AND CONDUCT A COASTAL PASSAGE AND DETERMINE POSITION WITHIN THE LIMITS OF RESPONSIBILITY OF A MASTER 4

Release: 1

TDMMH607B PLAN AND CONDUCT A COASTAL PASSAGE AND DETERMINE POSITION WITHIN THE LIMITS OF RESPONSIBILITY OF A MASTER 4

Modification History

Not applicable.

Unit Descriptor

UNIT DESCRIPTOR:

This unit involves the skills and knowledge required to plan and conduct a coastal passage for a commercial vessel and determine its position within limits of responsibility of a Master 4 or Skipper 2, i.e. a vessel of less than 80 metres in length within inshore limits (15 nm) and less than 35 metres within ACMW (600 nm).

This includes planning and conducting a coastal passage for all conditions by acceptable methods of plotting ocean tracks, routeing in accordance with the General Principles on Ships' Routeing and reporting as required by the Guidelines and Criteria for Ship Reporting Systems.

This unit has been retitled but covers the same functions as previous unit TDMMC501B *Plan and conduct a coastal passage and determine position*.

Application of the Unit

Application of the unit	
	The unit has applications in qualifications for a Master 4 and Skipper 2 operating a vessel of less than 80 metres in length within inshore limits (15 nm) and less than 35 metres within ACMW (600 nm), i.e. Certificate IV in Transport&Distribution (Coastal Maritime Operations - Master 4).

Licensing/Regulatory Information

Licensing/legislative requirements	The unit is consistent with the relevant maritime regulations describing mandatory minimum requirements for a Master 4/Skipper 2. This includes applicable sections of State/Territory maritime licensing and regulatory requirements and the National Standard for Commercial Vessels (NSCV) and the USL Code.
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Pre-Requisites

Not applicable.

Employability Skills Information

Not applicable.

Elements and Performance Criteria Pre-Content

<i>Elements describe the essential outcomes of a unit of competency.</i>	<i>Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.</i>
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Use and care for navigational charts, nautical publications and related documentation	- a Navigational charts, nautical publications and related documentation are handled and used in ways that ensure continued availability, utility and length of life - b Navigational charts, nautical publications and related documentation are stored and maintained in accordance with company procedures and chart/publication publisher's instructions - c Navigational charts, nautical publications and related documentation are filed in accordance with company procedures - d Navigational charts, nautical publications and related

ELEMENT	PERFORMANCE CRITERIA
	documentation are used for voyage planning and identification of navigational hazards in accordance with procedures and accepted maritime practice

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ELEMENT	PERFORMANCE CRITERIA
2 Plan route for voyage	- a Navigational hazards relevant to a proposed voyage are identified using relevant navigational charts, nautical publications and related documentation - b The route for a voyage is determined as per operational instructions and navigational principles and taking due account of identified navigational hazards - c Critical points along the proposed route of the voyage are identified and recorded - d Actions to deal with the identified critical points are developed in accordance with navigational principles and practice and company procedures - e Potential navigational contingencies and problems that may occur along the planned route are identified and strategies for dealing with them developed and recorded
3 Fix vessel's position within a limited area	- a Primary position fixing method is selected in accordance with prevailing conditions - b Position is fixed using the selected method and information derived from relevant navigational systems - c Checks are made for random, instrument, system and data errors and appropriate corrections and allowances are made to derived courses and bearings

ELEMENT	PERFORMANCE CRITERIA
	- d Time interval between fixes is appropriate to the prevailing navigational conditions - e Verification of primary position fixing is regularly carried out using appropriate methods - f Performance checks and tests of navigation position fixing instruments and systems are carried out as per procedures and manufacturer's instructions - g Position of vessel is recorded in accordance with procedures and regulatory requirements
4 Conduct a coastal passage	- a Measurements and observations of sea and weather conditions are accurate and appropriate to the planned passage of the vessel - b Meteorological information and observations of sea and weather conditions are correctly interpreted and applied to decisions on the vessel's speed and direction

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ELEMENT	PERFORMANCE CRITERIA
4 Conduct a coastal passage (continued)	- c Information from navigation systems is interpreted and applied to identify navigational hazards and to fix the vessel's position and to inform decisions concerning the vessel's speed and direction - d The selection of the mode of steering is the most appropriate for the prevailing weather, sea and traffic conditions and intended manoeuvres - e Required alterations to the 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 and overall passage plan requirements

ELEMENT	PERFORMANCE CRITERIA
	e Required alterations to the 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 and overall passage plan requirements f Alterations to the vessel's course and speed comply with Australian and international regulations for the avoidance of collision at sea g Alterations to the vessel's course and speed are appropriate to prevailing circumstances and conditions h Alterations to the vessel's course and speed are effective and do not put at risk the safety of the vessel or its passengers and crew or that of other vessels, passengers or crew i Signals relevant for navigational manoeuvres are made at the appropriate time in accordance with Australian and international regulations j Operational limits of vessel propulsion, steering, power systems and overall trim and stability are not exceeded during navigational manoeuvres
5 Document and report planned route and passage	a Planned route for a vessel's voyage is recorded and reported in accordance with procedures and regulatory requirements b Plans and strategies for dealing with critical situations and contingencies along the route of a voyage are recorded c Details of a passage, including navigational incidents and related action taken are recorded in the vessel's log as per procedures and regulatory requirements

Required Skills and Knowledge

REQUIRED KNOWLEDGE

This describes the knowledge required for this unit.

- 1 Relevant sections of State and Territory maritime regulations, NSCV and USL Code
- 2 Principles and procedures of navigation and coastal passage planning, including contingency planning
- 3 Information required to develop a typical effective coastal passage plan
- 4 Procedures for storing and handling navigational charts, nautical publications and related documentation in serviceable condition
- 5 Common methods of time measurement
- 6 Methods used to approximate to the shape of the earth
- 7 Procedures for calculating DR and EP due to current, tides and wind and course to steer
- 8 Principles and procedures for fixing a vessel's position
- 9 Procedures for converting one set of coordinates to another
- 10 Common astronomical phenomena, including: the phases of the moon, twilight, solar eclipses, lunar eclipses, visible sunrise/set, tabulated times for sunrise/set, theoretical sunrise/set
- 11 Procedures for the calculation of the height of tide for a given time at any place listed using tide tables
- 12 Procedures for the use of relevant published data and information when planning and conducting a voyage, including calculation of errors due to common navigational approximations
- 13 Errors in common position fixing systems and their effect on observed positions
- 14 Methods for controlling vessel speed and direction
- 15 Constant rate of turn techniques
- 16 Manoeuvring and engine characteristics for vessels within limits of responsibility of a Master 4, taking into account all relevant navigational hazards, including

REQUIRED KNOWLEDGE

stopping distances and turning circles at various draughts, speeds and loading

REQUIRED KNOWLEDGE

- 17 Effects on vessel handling of wind, currents and bottom topography
- 18 Typical manoeuvring problems for vessels up to 80 metres in length on coastal voyages, taking into account all relevant navigational hazards and appropriate action and solutions
- 19 Manoeuvring procedures in and near traffic separation schemes and vessel traffic service areas
- 20 Vessel reporting systems and their application when planning and conducting a voyage
- 21 Maritime communication techniques, including use of standard maritime terms

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REQUIRED SKILLS

This describes the basic skills required for this unit.

- 1 Use verbal communication skills required when planning and navigating a passage within limits of responsibility of a Master 4
- 2 Read and interpret charts and other published information relevant to planning and navigating a passage within limits of responsibility of a Master 4
- 3 Read and interpret instrument and equipment readings and indications relevant to planning and navigating a passage within limits of responsibility of a Master 4
- 4 Complete any required operational records
- 5 Work safely and collaboratively with others when planning and navigating a passage
- 6 Select and use relevant equipment required when planning and navigating a passage as per standard operating procedures
- 7 Recognise faulty equipment and readings and take appropriate action as per standard operating procedures
- 8 Recognise problems that may be experienced when planning and navigating a passage and take appropriate action

REQUIRED SKILLS

- 9 Adapt to differences in vessels, equipment and related standard operating procedures
- 10 Planning and navigating a passage for a vessel of less than 80 metres
- 11 Correct a magnetic compass direction/reading for variation and deviation
- 12 Correct a gyro compass direction for gyro errors

Evidence Guide

Evidence Guide

TDMMH607B PLAN AND CONDUCT A COASTAL PASSAGE AND DETERMINE POSITION OF VESSEL WITHIN THE LIMITS OF RESPONSIBILITY OF A MASTER 4

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 passage of a vessel of less than 80 metres in length within inshore limits (15 nm) and less than 35 metres within ACMW (600 nm) on a coastal voyage taking into account all relevant navigational hazards - b Fix the position of a vessel within coastal waters using all acceptable methods - c Identify typical navigational hazards and make due allowance for them when planning a coastal voyage
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 planning and conducting a coastal passage

- 2 identifying and evaluating navigation problems and determining appropriate navigational solutions
 - 3 identifying and implementing improvements to coastal voyage planning and navigation procedures
 - 4 interpreting and applying information derived from navigational equipment and systems
 - 5 applying precautions relevant to coastal voyage planning and navigation
 - 6 fixing the position of the vessel in a coastal area
- c Shows evidence of application of relevant workplace and regulatory procedures, including:
- 1 relevant maritime regulations
 - 2 reporting of vessel's position, route and navigational contingencies
 - 3 job procedures and navigational instructions
 - 4 use of relevant nautical publications and charts
 - 5 procedures for the storage of nautical publications and charts
- d Action is taken promptly to report and/or rectify navigational errors and contingencies in accordance with established procedures
- 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

Evidence Guide (continued)

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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 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 coastal passage and conduct navigation using an appropriate marine simulator covering 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 commercial vessel of less than 80 metres in length within inshore limits (15 nm) and less than 35 metres within ACMW (600 nm), in coastal areas and across an appropriate range of navigational hazards

Range Statement

Range Statement

TDMMH607B PLAN AND CONDUCT A COASTAL PASSAGE AND DETERMINE POSITION OF VESSEL WITHIN THE LIMITS OF RESPONSIBILITY OF A MASTER 4

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 compliance with the relevant maritime regulations
b. Work is performed:	1 as a member of a bridge team under broad operational requirements, with limited accountability and responsibility for self and others in achieving the prescribed outcomes
c. Work involves:	1 the application of navigational principles and procedures across a range of coastal navigational contexts. Contribution to the development of a plan for a coastal voyage is required as a member of a bridge team with appropriate allowance for possible contingencies
d. Work requires:	1 judgement and teamwork in planning, technical and operational functions related to devising and conducting the coastal passage of a vessel up to 80 m in length, or 100 m in length where gross tonnage does not exceed 3,000 gross tonnage

2. WORKSITE ENVIRONMENT

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

a Vessel may include:	1 any commercial vessel of less than 80 metres in length within inshore limits (15 nm) and less than 35 metres within ACMW (600 nm).
b Voyages to be planned and conducted may include:	1 any coastal voyage navigable by the size and type of vessel concerned 2 passages through - i traffic separation schemes in coastal areas - i VTS controlled areas - iii pilotage water - iv tidal restricted areas

Range Statement (continued)

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VARIABLE	SCOPE
c Navigation may occur in conditions of:	1 <i>clear visibility using visual navigational techniques</i> 2 <i>restricted visibility using parallel indexing and/or electronic chart systems</i> 3 clear visibility using a combination of visual and electronic techniques
d Instrumentation and equipment used for navigation and ..	1 radar 2 automatic radar plotting aid (ARPA) 3 GPS and DGPS satellite navigation systems

VARIABLE	SCOPE
position may include:	4 ECS and ECDIS systems (Note: ECDIS systems are considered to be included under the term 'charts' under the IMO STCW Convention and Code) 5 integrated navigation systems 6 magnetic compasses 7 gyro compasses 8 gyro repeaters 9 chronometers 10 sextants 11 azimuth mirrors 12 azimuth vanes 13 pelorus 14 doppler and electromagnetic logs 15 echo sounders
e The use of navigational aids to assist safe navigation may include:	1 fixing the position of the vessel 2 tracking of other vessels 3 assistance in making of command navigational decisions 4 navigating during search and rescue operations
f Position fixing techniques may include:	1 visual bearings, e.g. landmarks and other visual aids to navigation such as lighthouses, beacons and buoys 2 dead reckoning, taking into account winds tides currents and estimated speed 3 electronic aids, including radar 4 continuous position monitoring

Range Statement (continued)

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VARIABLE	SCOPE
g Documentation and records may include:	1 relevant sections of State and Territory marine regulations, NSCV/USL Code 2 operational orders 3 navigational charts of coastal waters 4 relevant maritime publications 5 navigational warning records 6 relevant maritime regulations 7 annual and weekly notices to mariners 8 vessel's log 9 company procedures 10 vessel manufacturer's instructions and recommended procedures 11 notices and instructions of relevant maritime authorities 12 pilot instructions where relevant 13 relevant Australian and international standards
h Applicable legislation, regulations and codes may include:	1 relevant sections of State and Territory marine regulations, NSCV/USL Code 2 regulations for preventing collisions at sea 3 SOLAS Convention 4 relevant international, Commonwealth, State and Territory

VARIABLE	SCOPE
	OH&S legislation
	5 Guidelines and Criteria for Ship Reporting Systems

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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