



Australian Government

Department of Education, Employment and Workplace Relations

TDMMC407B MANOEUVRE THE VESSEL AND OPERATE SMALL POWER PLANTS WITHIN THE LIMITS OF RESPONSIBILITY OF A MASTER 3

Release: 1

TDMMC407B MANOEUVRE THE VESSEL AND OPERATE SMALL POWER PLANTS WITHIN THE LIMITS OF RESPONSIBILITY OF A MASTER 3

Modification History

Not applicable.

Unit Descriptor

UNIT DESCRIPTOR:

This unit involves the skills and knowledge required to manoeuvre a commercial vessel within limits of responsibility of a Master 3 or Skipper 1. This includes the operation of small power plants and manoeuvring the vessel during normal operations, including berthing, mooring and anchoring.

Application of the Unit

Application of the unit	The unit has applications in qualifications for a Master 3/Skipper 1 operating a vessel: • less than 35 metres in length for unlimited domestic operations • less than 80 metres in length for ACMW operations (within 600 nm) • that is both less than 3,000 GT and less than 100 metres in length, for ACMW operations (within 600 nm) i.e. Diploma of Transport&Distribution (Coastal Maritime Operations - Master Class 3).
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Licensing/Regulatory Information

Licensing/legislative requirements	The unit is consistent with the relevant maritime regulations describing mandatory requirements for a Master 3/Skipper 1. 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
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1 Manoeuvre the vessel for normal operations	- a Manoeuvres are made to safely progress the operation and keep the vessel in safe water - b Vessel's heading is maintained within acceptable limits with respect to the requirements of the manoeuvre, weather, tide, headreach and stopping distances - c Alterations of heading or power are smooth and controlled - d Communication is clear, concise and acknowledged according to good seamanship practice - e Suitable mode of steering is selected for the manoeuvre with respect to the area, wind and sea conditions - f Appropriate turn techniques are used - g Vessel propulsion is controlled as required to progress the operation and complement helm movements

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ELEMENT	PERFORMANCE CRITERIA
1 Manoeuvre the vessel for normal operations (continued)	- h Safe operating limits of vessel propulsion and steering systems are not exceeded in normal manoeuvres - i Appropriate allowance is made for the effects of deadweight, draft, trim, speed and under keel clearance on turning circles and stopping distance - j Anchoring and mooring manoeuvres are conducted as per safe nautical practice - k Adequate resources are organised prior to and during operations
2 Handle vessel when under way	- a Appropriate alterations to vessel heading and power are made in response to assessments of the vessel's operational environment - b Special handling techniques are correctly applied during rescues of persons overboard or adverse sea and weather conditions
3 Manoeuvre vessel during adverse weather conditions	- a Impending adverse weather and/or ice conditions are identified and the implications for vessel operations are evaluated - b Preparations are made and required precautions are taken to minimise risk and damage to vessel and personnel and time loss on passage within the limits of the master's responsibility - c Manoeuvres are adjusted to allow for weather and sea conditions to safely progress the operation and keep the vessel in safe water - d Vessel's heading is maintained within acceptable limits as

ELEMENT	PERFORMANCE CRITERIA
	per the requirements of the manoeuvre and the prevailing weather and sea conditions e Special handling techniques required under heavy weather conditions are used when necessary

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Required Skills and Knowledge

REQUIRED KNOWLEDGE

This describes the knowledge required for this unit.

- 1 Sections of relevant maritime regulations
- 2 Relevant OH&S legislation, codes of practice, policies and procedures
- 3 Limits of responsibility of a Master 3 and Skipper 1 as described in applicable sections of State/Territory maritime licensing and regulatory requirements and the National Standard for Commercial Vessels (NSCV).and the USL Code
- 4 Methods for controlling vessel speed and direction
- 5 Vessel turn techniques, including Williamson turn and short turn around
- 6 Techniques for turning a vessel across the tide across the wind
- 7 Typical manoeuvring characteristics and small power plant operational techniques for vessel within the limits of responsibility of Master 3 and Skipper 1, including stopping distances and turning circles at various draughts, speeds and loading
- 8 Effects of deadweight, draught, trim, speed and under-keel clearance on turning circles and stopping distances
- 9 Squat, shallow water and similar effects on vessel's handling
- 10 Effects on vessel handling of wind, currents and bottom topography
- 11 Typical manoeuvring problems for vessels up to 35 m in length on international voyages or up to 80 m in length on coastal voyages (or 100 m in length where gross tonnage does not exceed 3,000 gross tonnage), and appropriate action and solutions

REQUIRED KNOWLEDGE

- 12 Manoeuvring procedures in and near traffic separation schemes and vessel traffic service areas
- 13 Methods for recovering a person from the water
- 14 Maritime communication techniques, including issuing of helm and engine orders and tug communications

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REQUIRED SKILLS

This describes the basic skills required for this unit.

- 1 Communicate effectively with other personnel and passengers during vessel manoeuvres
- 2 Issue helm and engine orders
- 3 Read and interpret vessel manufacturer's instructions on vessel operation
- 4 Read and interpret vessel marine regulations, rules and instructions concerning vessel operations
- 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 other shipboard personnel and passengers during vessel operations
- 8 Make appropriate determinations and calculations required during the course of vessel operations (e.g. fuel, distance, speed, time, etc.)
- 9 Determine the type and extent of an emergency and determine the appropriate survival action to be taken
- 10 Recognise the effects of various operational situations such as interaction effects with passing vessels, squat, shallow water and narrow channel on vessel's

REQUIRED SKILLS

- handling and determine appropriate manoeuvring action required
- 11 Operate the vessel in accordance with manufacturer's instructions
- 12 Turn the vessel in various operational situations
- 13 Manoeuvre the vessel with minimal wash

Evidence Guide

Evidence Guide (continued)

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2 Evidence required for demonstration of consistent performance (continued)	6 waste, pollution and recycling management processes - d Action is taken promptly to report and/or rectify accidents and incidents in accordance with statutory requirements and company 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
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 resource required for assessment	Access is required to opportunities to: - a operate a suitable vessel simulator over an appropriate range of simulated manoeuvring situations, weather and loading conditions; and/or - b manoeuvre a vessel up to 35 m in length on international voyages or up to 80 m in length on coastal voyages (or 100 m in length where gross tonnage does not exceed 3,000 gross tonnage) in an appropriate range of situations, weather and loading conditions

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 compliance with the relevant maritime regulations

b. Work is performed:	1 within broad operational requirements, with responsibility for own outputs in relation to specified quality standards and limited responsibility for others in achieving the specified quality and quantity of outcomes
c. Work involves:	1 the operation of small marine power plants and the application of nautical principles and manoeuvring techniques across a defined range of contexts. Planning and carrying out the required manoeuvres for a vessel is required
d. Work requires:	1 limited responsibility for the management of the manoeuvring of a vessel up to 35 m in length on international voyages or up to 80 m in length on coastal voyages (or 100 m in length where gross tonnage does not exceed 3,000 gross tonnage) to ACMW

2. WORKSITE ENVIRONMENT

a Vessel may include:	1 a commercial vessel • less than 35 metres in length for unlimited domestic operations • less than 80 metres in length for ACMW operations (within 600 nm) • that is both less than 3,000 GT and less than 100 metres in length, for ACMW operations (within 600 nm)
b Manoeuvres may be carried out	1 by day or night in normal operational situations 2 under normal and adverse conditions of sea and weather 3 during berthing and unberthing operations 4 while anchoring or mooring
c Manoeuvres may include:	1 berthing and unberthing 2 mooring or anchoring

Range Statement (continued)

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c Manoeuvres may include: (continued)	3 handling vessel in shallow water, rivers, estuaries and restricted waters 4 navigating in and near traffic separation schemes and vessel traffic service areas 5 use of small marine power plants 6 clearing a fouled anchor
d Special handling techniques required may include:	1 launching rescue boats and survival craft 2 taking on board survivors from rescue boats and survival craft 3 manoeuvring to rescue a person overboard 4 keeping an unmanageable vessel out of the trough of the sea 5 lessening drift
e Documentation and records may include:	1 operational orders 2 navigational charts 3 relevant maritime regulations 4 vessel's log 5 vessel's operational plan 6 company procedures 7 vessel manufacturer's instructions and recommended procedures 8 instructions of relevant maritime authorities

	9 relevant Australian and international standards
f Applicable legislation, regulations and codes may include:	1 relevant sections of State and Territory maritime regulations, the NSCV and the USL Code 2 Sections of the IMO STCW 95 Convention and Code related to a vessel within the limits of responsibility of a Master 3 or Skipper 1 3 relevant sections of AMSA Marine Orders 4 International Regulations for Preventing Collisions at Sea 5 relevant OH&S legislation

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 Manoeuvre the vessel: 1 safely in both normal situations 2 in normal and adverse weather conditions 3 in berthing and unberthing operations 4 when anchoring or mooring - b Exercise all required safety and hazard control procedures when manoeuvring the vessel - c Identify typical manoeuvring problems and take appropriate action - d Communicate effectively with others during manoeuvring operations
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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 completing manoeuvring operations
 - 2 identifying and evaluating manoeuvring problems and determining appropriate courses of action
 - 3 identifying and implementing improvements to manoeuvring procedures
 - 4 applying safety precautions relevant to manoeuvring operations
 - 5 assessing operational capability of vessel and manoeuvring power plant and equipment
- c Shows evidence of application of relevant workplace procedures, including:
 - 1 relevant maritime regulations
 - 2 OH&S regulations and hazard prevention policies and procedures
 - 3 job procedures and work instructions
 - 4 relevant manufacturer's guidelines relating to the use of power plant and machinery, including instructions on equipment capability and limitations
 - 5 following on-board housekeeping processes

Unit Sector(s)

Not applicable.

Field

Field MC Manoeuvring Vessel

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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