



Australian Government

Department of Education, Employment and Workplace Relations

TDMMC307B MANOEUVRE AND HANDLE THE VESSEL IN NORMAL CONDITIONS

Revision Number: 1

TDMMC307B MANOEUVRE AND HANDLE THE VESSEL IN NORMAL CONDITIONS

Modification History

Not applicable.

Unit Descriptor

UNIT DESCRIPTOR:

This unit involves the skills and knowledge required to manoeuvre a commercial vessel during normal operations, including berthing, mooring and anchoring.

Application of the Unit

Application of the unit	The unit has application in qualifications for Master (Unlimited), Watchkeeper (Deck) and Master (Less than 500 GT), i.e. Advanced Diploma of Transport&Distribution(Maritime Operations - Master Unlimited) and Diploma of Transport&Distribution(Maritime Operations - Deck Watchkeeper).
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Licensing/Regulatory Information

Licensing/legislative requirements	The unit is consistent with the relevant sections of STCW 95, the International Ship and Port Facility Security (ISPS) Code and Marine Orders under the Australian Navigation Act 1912.
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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 Manoeuvre the vessel for normal operations	<ul style="list-style-type: none"> 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 as per 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 e Suitable mode of steering is selected for the manoeuvre with respect to the area, wind and sea conditions f Constant rate of turn techniques are used to achieve constant radius turns during manoeuvres g Vessel propulsion is controlled as required to progress the operation and complement helm movements h Safe operating limits of vessel propulsion and steering systems are not exceeded in normal manoeuvres i Anchoring and berthing operations are coordinated and supervised in accordance with established procedures

ELEMENT	PERFORMANCE CRITERIA
1 Manoeuvre the vessel for normal operations (continued)	<p>j Appropriate inter-vessel communications are correctly used during vessel manoeuvres</p> <p>k Adequate resources are organised prior to and during operations</p>
2 Handle vessel when under way	<p>a The effects on vessel performance of shallow and restricted waters, ice, banks, tidal conditions and passing vessel's and own vessel's bow and stern waves are regularly evaluated and the implications for vessel handling assessed</p> <p>b Appropriate alterations to vessel heading and power are made in response to assessments of the vessel's operational environment</p> <p>c Special handling techniques are correctly applied during rescues or adverse sea and weather conditions</p>
3 Manoeuvre vessel during adverse weather conditions	<p>a Impending adverse weather and/or ice conditions are identified and the implications for vessel operations are evaluated</p> <p>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 officer's responsibility</p> <p>c Master is called if developments in sea or weather conditions require decisions beyond the officer's limits of responsibility</p> <p>d Manoeuvres are adjusted to allow for weather and sea conditions to safely progress the operation and keep the vessel in safe water</p> <p>e Vessel's heading is maintained within acceptable limits with respect to the requirements of the manoeuvre and the prevailing weather and sea conditions</p>

ELEMENT	PERFORMANCE CRITERIA
	f Special handling techniques required under heavy weather conditions are used when necessary

Required Skills and Knowledge

REQUIRED KNOWLEDGE

This describes the knowledge required for this unit.

- 1 Applicable sections of IMO STCW 95 Convention and Code and AMSA Marine Orders
- 2 Relevant OH&S legislation and policies
- 3 Limits of responsibility of an officer in charge of the watch on a vessel of 500 gross tonnage and more
- 4 Methods for controlling vessel speed and direction
- 5 Procedures for turning a vessel in various situations, including:
 - a constant rate of turn techniques
 - b turning a vessel 'short turn around'
 - c turning a vessel on a reciprocal track in an emergency
 - d procedures for the use of rate of turn indicators for the safe handling of the vessel

REQUIRED KNOWLEDGE

- 6 Manoeuvring and engine characteristics for various types of vessels of 500 gross tonnage or more, including stopping distances and turning circles at various draughts, speeds and loading
- 7 Effects of deadweight, draught, trim, speed and under-keel clearance on turning circles and stopping distances
- 8 Squat, shallow water and similar effects on vessel's handling
- 9 Effects on vessel handling of wind, currents and bottom topography
- 10 Manoeuvring problems for vessels of 500 gross tonnage or more and appropriate action and solutions
- 11 Manoeuvring procedures in and near traffic separation schemes and vessel traffic service areas
- 12 Procedures for berthing operations
- 13 Procedures for anchoring operations, including:
 - a preparations to be made on deck for anchoring a vessel
 - b functions and operation of windlass and capstan
 - c methods of clearing a fouled anchor or hawse
 - d methods of hanging off an anchor
 - e methods of slipping a cable
 - f causes and signs of anchor dragging
 - g arrangements for stowing and securing anchors and cables
 - h care and maintenance of anchors, cables and anchor lockers
- 14 Procedures for the rigging and maintenance of personnel and pilot passageways during vessel manoeuvres
- 15 Maritime communication techniques, including issuing of helm and engine orders and tug communications

- 14 Procedures for the rigging and maintenance of personnel and pilot passageways during vessel manoeuvres

REQUIRED SKILLS

This describes the basic skills required for this unit.

- 1 Communicate effectively with others 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 standard operating procedures 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 Determine appropriate procedures to allow for interaction effects with passing vessels
- 11 Recognise the effects of various operational situations such as squat, shallow water and narrow channel on vessel's handling and determine appropriate manoeuvring action required
- 12 Operate the vessel in accordance with standard operating procedures and manufacturer's instructions
- 13 Turn the vessel in various operational situations

Evidence Guide

Evidence Guide

TDMMC307B MANOEUVRE AND HANDLE THE VESSEL IN NORMAL CONDITIONS

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	<p>Assessment must confirm appropriate knowledge and skills to:</p> <ul style="list-style-type: none"> a Manoeuvre the vessel <ul style="list-style-type: none"> 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
2 Evidence required for demonstration of consistent performance	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 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

Evidence Guide

TDMMC307B MANOEUVRE AND HANDLE THE VESSEL IN NORMAL CONDITIONS

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| | <p>5 assessing operational capability of vessel and manoeuvring plant and equipment</p> <p>c Shows evidence of application of relevant workplace procedures, including:</p> <ol style="list-style-type: none"> 1 relevant sections of IMO STCW 95 Convention and Code and AMSA Marine Orders 2 ISM Code and associated vessel's safety management system and procedures 3 OH&S regulations and hazard prevention policies and procedures 4 job procedures and work instructions 5 relevant manufacturer's guidelines relating to the use of machinery, including instructions on equipment capability and limitations |
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Evidence Guide (continued)

TDMMC307B MANOEUVRE AND HANDLE THE VESSEL IN NORMAL CONDITIONS

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| <p>2 Evidence required for demonstration of consistent performance (continued)</p> | <p>6 following on-board housekeeping procedures</p> <p>d Action is taken promptly to report manoeuvring accidents and incidents</p> <p>e Work is completed systematically with required attention to detail</p> <p>f Recognises and adapts appropriately to cultural differences in the workplace, including modes of behaviour and interactions and communication with others</p> |
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Evidence Guide (continued)

TDMMC307B MANOEUVRE AND HANDLE THE VESSEL IN NORMAL CONDITIONS

<p>3 Context of assessment</p>	<p>a Assessment of competency must comply with the assessment requirements of the relevant maritime regulations</p> <p>b Assessment of this unit must be undertaken within relevant marine authority approved and audited arrangements by a registered training organisation:</p> <ol style="list-style-type: none"> 1 As a minimum, assessment of knowledge must be conducted through appropriate written/oral examinations, and 2 Appropriate practical assessment must occur: <ol style="list-style-type: none"> i at the registered training organisation; and/or ii on an appropriate working or training vessel
<p>4 Specific resources required for assessment</p>	<p>Access is required to opportunities to:</p> <ol style="list-style-type: none"> a operate a vessel simulator, meeting the requirements of Section A I/12 of the IMO STCW 95 Code, over an appropriate range of simulated manoeuvring situations, weather and loading conditions; and/or b manoeuvre a vessel of 500 gross tonnage or more in an appropriate range of situations, weather and loading conditions

Range Statement

Range Statement

TDMMC307B MANOEUVRE AND HANDLE THE VESSEL IN NORMAL CONDITIONS

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 mandatory rules and regulations and IMO Conventions and Codes, including the relevant sections of the AMSA Marine Orders and ensuring that applicable codes, guidelines and standards recommended by IMO, the classification societies and maritime industry organisations are taken into account
b. Work is performed:	1 relatively independently within broad operational requirements, with limited accountability and responsibility for self and others in achieving the prescribed outcomes
c. Work involves:	1 the application of a significant range of fundamental nautical principles and manoeuvring techniques in normal operational contexts
d. Work requires:	1 the ability to implement the plan for vessel operations

2. WORKSITE ENVIRONMENT

a Vessel may include:	1 any Australian or international commercial vessel of 500 gross tonnage or more

Range Statement**TDMMC307B MANOEUVRE AND HANDLE THE VESSEL IN NORMAL CONDITIONS****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)**TDMMC307B MANOEUVRE AND HANDLE THE VESSEL IN NORMAL CONDITIONS****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 propulsion and manoeuvring systems
- 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

Range Statement (continued)**TDMMC307B MANOEUVRE AND HANDLE THE VESSEL IN NORMAL CONDITIONS**

e Documentation and records may include:	<ol style="list-style-type: none"> 1 ISM Code safety management system plans, procedures, checklists and instructions 2 operational orders 3 navigational charts 4 IMO STCW 95 Convention and Code 5 AMSA Marine Orders 6 vessel's log 7 vessel's operational plan 8 company procedures 9 vessel manufacturer's instructions and recommended procedures 10 instructions of relevant maritime authorities 11 relevant Australian and international standards
f Applicable legislation, regulations and codes may include:	<ol style="list-style-type: none"> 1 IMO STCW 95 Convention and Code related to vessels of 500 gross tonnage or more 2 relevant sections of AMSA Marine Orders 3 SOLAS Convention 4 International Regulations for Preventing Collisions at Sea 5 relevant international, Commonwealth, State and Territory OH&S legislation

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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