



Australian Government

MARK006 Manoeuvre a vessel 500 gross tonnage or more

Release: 1

MARK006 Manoeuvre a vessel 500 gross tonnage or more

Modification History

Release 1. This is the first release of this unit of competency in the MAR Maritime Training Package Release 3.0.

Application

This unit involves the skills and knowledge required to issue orders to manoeuvre and handle a vessel in all conditions based on the proper assessment of vessel manoeuvring and engine characteristics.

This unit applies to people working in the maritime industry as a Master Unlimited.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Not applicable.

Competency Field

K – Manoeuvring Vessels

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Provide commands to bridge and engine room to effect manoeuvres

2 Order adjustments to vessel course and speed to maintain

PERFORMANCE CRITERIA

Performance criteria describe the performance needed to demonstrate achievement of the element.

1.1 Situational awareness is maintained to determine progress of vessel

1.2 Situation is assessed to determine manoeuvres required

1.3 Appropriate orders are issued to ensure vessel is manoeuvred safely in all conditions

2.1 Effects of the operational environment on vessel performance are evaluated at regular intervals

safe navigation

- 2.2 Implications of the changed operational environment on vessel handling are assessed
- 2.3 Appropriate alterations are made and orders are issued in response to assessment of the operational environment

3 Command vessel during emergencies

- 3.1 Nature of emergency is established and initial action is taken
- 3.2 Risks to the vessel and the safety of persons on board are assessed
- 3.3 Appropriate manoeuvres are made to maintain vessel safety

4 Work with pilot to ensure safe passage to berth or anchorage

- 4.1 Vessel is manoeuvred to ensure safe embarkation of pilot
- 4.2 Pilot is provided access to vessel resources
- 4.3 Pilot is provided with information on vessel handling characteristics
- 4.4 Proposed berthing/anchoring plan is discussed with pilot
- 4.5 Pilot activities are monitored to ensure safe operation of vessel according to agreed berthing/anchoring plan

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Situational awareness includes:

- berthing and unberthing with tugs
- choice of anchorage
- dry-docking
- effects of current, wind and restricted waters on helm response
- headreach
- in or near ice or ice accumulation on board
- interaction between passing vessels and between own vessel and nearby banks
- launching life boats or survival craft
- load conditions
- own vessel bow wave and stern wave
- pilot boarding grounds
- requirements of the manoeuvre
- rivers, estuaries and restricted waters
- safe water
- shallow water
- stopping distances and turning circles
- taking on board survivors from life boats or survival craft
- tide
- traffic operation schemes
- vessel and tug interaction
- vessel traffic service (VTS) areas
- weather conditions

Manoeuvres include:

- application of constant-rate-of-turn techniques
- berthing and unberthing under various conditions of wind, tide and current with and without tugs
- choice of anchorage: anchoring with one or two anchors in limited anchorages and factors involved in determining the length of anchor cable to be used
- determining the manoeuvring and propulsion characteristics of common types of vessels, with special references to stopping distances and turning circles at various draughts and speeds
- dragging anchor, clearing fouled anchors
- dry-docking, both with and without damage
- handling vessel in rivers, estuaries and restricted waters with due regard to the effects of current, wind and restricted water on helm response
- importance of navigating at reduced speed to avoid damage caused by own vessel bow wave and stern wave
- interaction between passing vessel and own vessel and nearby banks
- managing and handling vessels in heavy weather including assisting a vessel or aircraft in distress; towing operations; means of keeping unmanageable vessel out of trough of the sea, lessening drift and use of oil
- manoeuvres when approaching pilot stations and embarking and disembarking pilots with due regard to weather, tide, headreach and stopping distances
- manoeuvring in shallow water including the reduction in under-keel clearance caused by squat, rolling and pitching
- methods of taking on board survivors from rescue boats and survival craft
- practical measures to be taken when navigating in or near ice or in conditions of ice accumulated on board
- precautions in manoeuvring to launch rescue boats or survival craft in bad weather
- turning a vessel on a reciprocal track to rescue a person overboard
- using, and manoeuvring in or near, traffic operation schemes and in VTS areas
- using propulsion and manoeuvring systems
- vessel and tug interaction

Orders include one or more of the following:	• communications with shore • embarking or disembarking a pilot • engine • helm • preparation for being towed or towing another vessel • preparation for taking tug lines • running mooring lines
Operational environment includes one or more of the following:	• banks • conditions of loading • ice • marine park areas • own vessel bow and stern wave • passing vessels • shallow and restricted waters • tidal conditions • traffic separation zones • weather
Alterations include:	• alterations of course • reduction in speed
Nature of emergency includes one or more of the following:	• beaching • cargo shift • collision • damage to the vessel • disabled or partially disabled vessel • fire • grounding • loss of steering gear including rudder • person overboard
Vessel resources include one or more of the following:	• bow and stern thrusters • communications equipment • engine control systems • helm and rate of turn indicators • personnel • propulsion systems
Vessel handling characteristics include one	• effects of single or twin screw • effects when moving astern

- or more of the following:
- rate of turn
 - stopping ability
 - use of controllable pitch propeller

Unit Mapping Information

This unit replaces and is equivalent to MARK6001A Manoeuvre a vessel 500 gross tonnage or more.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=772efb7b-4cce-47fe-9bbd-ee3b1d1eb4c2>

Assessment Requirements for MARK006 Manoeuvre a vessel 500 gross tonnage or more

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least one occasion and include:

- applying constant-rate-of-turn techniques
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements and work practices
- basing all decisions concerning berthing and anchoring on a proper assessment of vessel manoeuvring and engine characteristics and the forces to be expected while berthed alongside or lying at anchor
- berthing and unberthing under various conditions of wind, tide and current with and without tugs
- clearing fouled anchors
- determining the manoeuvring and propulsion characteristics of common types of vessels, with special references to stopping distances and turning circles at various draughts and speeds
- dragging anchor
- handling vessels in rivers, estuaries and restricted waters having due regard to the effects of current, wind and restricted water on helm response
- issuing helm and engine orders
- making a full assessment of possible effects of shallow and restricted waters, ice, banks, tidal conditions, passing vessels and own vessel bow and stern wave while under way, so that the vessel can be safely manoeuvred under various conditions of loading and weather
- managing and handling vessels in heavy weather including assisting a vessel or aircraft in distress, towing operations, keeping unmanageable vessel out of trough of the sea, lessening drift and using oil
- manoeuvring in shallow water including the reduction in under-keel clearance caused by squat, rolling and pitching
- using propulsion and manoeuvring systems
- using remote controls of propulsion plant and auxiliary machinery.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- anchoring with one or two anchors in limited anchorages and factors involved in determining the length of anchor cable to be used
- choice of anchorage
- clearing fouled anchors
- effects of current, wind and restricted water on helm response
- entering a dry-dock under normal conditions with hull damage
- features of a vessel that relate to its handling characteristics
- importance of navigating at reduced speed to avoid damage caused by own vessel bow wave and stern wave
- interaction between passing vessel and own vessel and nearby banks
- manoeuvres when approaching pilot stations and embarking and disembarking pilots, with due regard to weather, tide, headreach and stopping distances
- manoeuvres when towing or under tow
- manoeuvring and propulsion characteristics of common types of vessels
- means of keeping an unmanageable vessel out of trough of the sea, lessening drift and use of oil
- methods of taking on board survivors from rescue boats or survival craft
- practical measures to be taken when navigating in or near ice or in conditions of ice accumulated on board
- precautions in manoeuvring to launch rescue boats or survival craft in bad weather
- procedures for entering and leaving traffic separation zones
- reduction in under-keel clearance caused by squat, rolling and pitching
- use of propulsion and manoeuvring systems
- use of, and manoeuvring in or near, traffic operation schemes and in vessel traffic service (VTS) areas
- vessel and tug interaction
- WHS/OHS requirements and work practices.

Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations, current at the time of assessment.

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Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Assessment must occur in workplace operational situations or where these are not available, in simulated workplace operational situations or an industry-approved marine operations site where manoeuvring a vessel in a range of conditions can be undertaken.

Resources for assessment include access to:

- relevant documentation including workplace procedures, regulations, codes of practice and operation manuals
- tools, equipment and personal protective equipment currently used in industry.

Performance should be demonstrated consistently over time and in a suitable range of contexts.

Links

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