



Australian Government

MARC005 Operate inboard and outboard motors

Release: 1

MARC005 Operate inboard and outboard motors

Modification History

Release 1. New unit of competency.

Application

This unit involves the skills and knowledge required to operate inboard and outboard motors, and to diagnose basic faults.

This unit applies to deck and engine workers working in the maritime industry on vessels up to 12 metres. They could be working independently or as part a vessel crew.

This unit has links to legislative and certification requirements.

Pre-requisite Unit

Not applicable.

Competency Field

C – Equipment Operations

Unit Sector

Not applicable.

Elements and Performance Criteria

Elements describe the essential outcomes.

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

1 Operate inboard and outboard motors

- 1.1 Pre-start checks are performed on the motor
- 1.2 Fuel is checked to ensure there is adequate fuel, including a reserve, on board
- 1.3 Motor is started and stopped safely and correctly
- 1.4 Motor controls are used to manoeuvre the vessel safely to complete work tasks
- 1.5 Motor is operated within safe limits during normal manoeuvres

2 Secure vessel on

- 2.1 Vessel is moored safely

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| completion of work task | 2.2 | Fuel system is closed down |
| | 2.3 | Vessel is secured |
| | 2.4 | Fuel is stored to minimise environmental and fire hazards where appropriate |
| | 2.5 | Unserviceable equipment is reported and tagged out as unserviceable |
| 3 Maintain inboard and outboard motors | 3.1 | Fuel filters are drained of excess water |
| | 3.2 | Batteries and connections are maintained to ensure reliable electrical supply to the motor |
| | 3.3 | Engine and gearbox oil is checked and lubrication is applied |
| | 3.4 | Engine mounting gear is checked as necessary |
| 4 Identify basic inboard and outboard motor faults | 4.1 | Operating difficulties caused by fuel-related factors are identified |
| | 4.2 | Electrical faults are identified, tagged out and reported |
| | 4.3 | Motor propulsion faults are identified, tagged out and reported |

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

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

Range of Conditions

Specifies different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

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

work environment.

Pre-start checks must include:

- amount of fuel in the fuel tank
- appropriate fuel and oil
- cooling water intake submerged
- fuel hose connected, full and free of restrictions
- fuel tank depressurised
- motor attachment points
- water depth

Starting a motor includes one of the following:

- electric start
- pull start

Propulsion faults include one or more of the following:

- bent or broken propeller
- broken shear pin or drive spline
- fouling
- spark plugs

Unit Mapping Information

This is a new unit. This unit is equivalent to MARC2005A Operate inboard and outboard motors.

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 MARC005 Operate inboard and outboard motors

Modification History

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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 and performance criteria on at least one occasion and include:

- berthing a vessel
- conducting pre-start, running and shut down checks on inboard and outboard motors, and tagging out and reporting faults
- estimating fuel consumption
- manoeuvring to maintain a steady course
- reading and interpreting company standard operating procedures (SOPs) about operating inboard and outboard engines
- using inboard and outboard motor steering system
- working safely at all times.

Knowledge Evidence

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

- battery connection and hazards
- International Convention for the Prevention of Pollution from Ships (MARPOL) requirements
- motor:
 - cooling systems
 - fuel systems
 - lubricating systems
- risks associated with:
 - portable fuel tanks
 - transport by road of fuel and oil in trailer boats
- standard procedures to tag out and report faults
- storing an outboard motor
- transport by road of fuel and oil in trailer boats
- troubleshooting techniques
- work health and safety (WHS)/occupational health and safety (OHS) requirements and work practices.

Assessment Conditions

Assessors must satisfy National Vocational Education and Training Regulator (NVR)/Australian Quality Training Framework (AQTF) assessor requirements.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

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.

Resources for assessment must include access to:

- tools, equipment, machinery, materials and personal protective equipment currently used in industry
- applicable documentation such as legislation, regulations, codes of practice, workplace procedures and operational manuals
- range of relevant exercises, case studies and/or simulations.

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