



**Australian Government**

# **MARC006 Operate main propulsion unit and auxiliary systems**

**Release: 1**

# MARC006 Operate main propulsion unit and auxiliary systems

## Modification History

Release 1. New unit of competency.

## Application

This unit involves the skills and knowledge required to safely operate the main propulsion unit and auxiliary systems on a vessel up to 12 metres with a propulsion power:

- for an inboard engine < 500 kW
- for an outboard engine of unlimited power.

This unit applies to deck and engine workers working in the maritime industry on vessels up to 12 metres.

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 Prepare propulsion unit and auxiliary system for use**

- 1.1 Appropriate personal protective clothing and equipment is selected, used, maintained and stored according to work health and safety (WHS)/occupational health and safety (OHS) requirements
- 1.2 Routine pre-operational checks are carried out on equipment according to manufacturer specifications and workplace requirements
- 1.3 Deviations from the norm are promptly identified and

- rectified
- 1.4 Adjustments are made to achieve a safe and efficient operation
  - 1.5 Inability to start up equipment is reported promptly and accurately to appropriate personnel
- 2 Operate propulsion unit and auxiliary system**
- 2.1 Equipment is operated in a safe and controlled manner
  - 2.2 Performance and efficiency of equipment is monitored according to manufacturer instructions
  - 2.3 Equipment is maintained within defined operating limits when running, to achieve optimum safety and efficiency
  - 2.4 Environmental implications associated with operating equipment are identified and controlled
  - 2.5 Deviations from normal operations are promptly identified
  - 2.6 Action is taken to rectify irregularities to maintain optimum safety and efficiency
- 3 Check and complete propulsion unit and auxiliary system operation**
- 3.1 Equipment shut-down procedures are carried out according to manufacturer specifications and workplace procedures
  - 3.2 Equipment operational records are maintained according to workplace procedures
  - 3.3 Equipment damage, malfunctions or irregular performance are recorded and reported according to workplace procedures
  - 3.4 Equipment is cleaned according to manufacturer specifications and workplace procedures

## 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.

Personal protective clothing and equipment include one or more of the following:

- boots
- gloves
- hard hat
- hearing protection
- overalls
- protective eyewear
- respirator or facemask

Pre-operational checks include one or more of the following:

- checking and confirming equipment calibration settings
- inspecting safety guards, power take off stubs and shafts
- observing and monitoring noise levels for correct operation
- pre-start and safety checks including:
  - oils and lubricants
  - fuel systems
  - leads
  - lines
  - connections

Equipment must include:

- auxiliary equipment
- bilge systems
- cooling, lubricating and fuel systems
- drive train assembly
- fire pumping arrangements
- low voltage electrical systems
- monitoring machinery
- petrol, diesel and outboard engines
- shore power leads and connections
- steering gear
- two- and four-stroke engines

Safe and controlled

- appropriate selection and use of machinery and equipment

manner include one or more of the following:

- maintaining workloads within specifications
- using operational techniques for the specific location and weather conditions

Environmental implications include one or more of the following:

- excessive noise and exhaust emissions
- incorrect use of maintenance debris for example oils, containers, chemical residues
- hazardous substances

## Unit Mapping Information

This is a new unit. This unit is equivalent to MARC2006A Operate main propulsion unit and auxiliary systems.

## 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 MARC006 Operate main propulsion unit and auxiliary systems

## 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:

- implementing safe and environmentally responsible work practices
- measuring and calculating volumes, consumption and servicing requirements
- operating propulsion machinery and ancillary equipment to industry standards
- providing required amount of detail in reports
- recordkeeping.

## 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:

- environmental impacts and minimisation measures associated with operating propulsion machinery and auxiliary equipment
- environmental responsibilities
- factors associated with the safe operation of propelling and auxiliary equipment
- hazards of refrigerant gases
- identification of components
- manufacturer specifications for operating propulsion machinery and auxiliary equipment
- operating principles and operating methods for propulsion machinery and auxiliary equipment
- potential hazards and risks associated with operating propulsion machinery and auxiliary equipment
- potential hazards and risks involved with types of fuels for example petrol, diesel, liquefied petroleum gas (LPG)
- preparing for the use of propelling machinery, auxiliary equipment and other mechanical equipment
- routine checks required with the operation of propelling machinery, auxiliary equipment and other mechanical equipment
- shore power connections and associated hazards
- use of low voltage electrical systems
- what to do in the case of malfunctions and emergencies with propelling machinery, auxiliary equipment and other mechanical equipment

- 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.

## Links

Companion Volume implementation guides are found in VETNet -

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