



Australian Government

MARC038 Operate main propulsion unit and auxiliary systems

Release: 2

MARC038 Operate main propulsion unit and auxiliary systems

Modification History

Release 2. This is the second release of this unit of competency in the MAR Maritime Training Package.

- Minor statement changes in unit Application
- Minor statement changes in Performance Evidence
- Minor statement changes in Knowledge Evidence
- Minor statement changes in Assessment Conditions.

Release 1. New unit of competency. Licensing/regulatory information has been incorporated in accordance with Regulatory requirements. Assessment Requirements have been strengthened in accordance with Regulatory requirements.

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 in length.

This unit applies to people working in the maritime industry in the capacity of Coxswain Grade 1 Near Coastal.

Licensing/Regulatory Information

Legislative and regulatory requirements are applicable to this unit.

This unit is one of the requirements to obtain Australian Maritime Safety Authority (AMSA) certification as a Coxswain Grade 1 NC as specified in Marine Order 505.

Seafarers seeking certification should check with AMSA.

Pre-requisite Unit

Not Applicable.

Competency Field

C – Equipment Operations

Unit Sector

Not Applicable.

Elements and Performance Criteria

ELEMENTS

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 shutdown 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

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.

Unit Mapping Information

This unit replaces and is equivalent to MARC006 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 MARC038 Operate main propulsion unit and auxiliary systems

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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:

- applying work health and safety (WHS)/occupational health and safety (OHS) requirements and safe work practices including:
 - using appropriate personal protective clothing and equipment (PPE)
- carrying out pre-operational checks, including:
 - checking fuel system
 - checking leads, lines and connections
 - checking oils and lubricants
 - inspecting safety guards
- implementing environmentally responsible work practices
- maintaining engine work load within specifications
- measuring and calculating volumes, consumption and servicing requirements
- monitoring noise levels for correct operation
- operating propulsion machinery and ancillary equipment
- 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:

- basic operating principles of two and four-stroke engines
- environmental impacts and minimisation measures associated with operating propulsion

- machinery and auxiliary equipment
- environmental responsibilities
- 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
- propulsion machinery and ancillary equipment, including:
 - ancillary equipment
 - bilge systems
 - cooling, lubricating and fuel systems
 - diesel engines
 - drive train assembly
 - low voltage electrical systems
 - machinery monitoring equipment
 - outboard engines
 - shore power leads and connections
 - steering gear
- routine checks required with the operation of propulsion 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 propulsion machinery, auxiliary equipment and other mechanical equipment
- WHS/OHS requirements and safe work practices including:
 - factors associated with the safe operation of propulsion and auxiliary equipment
 - hazards of refrigerant gases
 - potential hazards and risks involved with types of fuels or industrial gases, for example, petrol, diesel and liquefied petroleum gas (LPG)
 - preparing for the safe use of propulsion machinery, auxiliary equipment and other mechanical equipment.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training current at the time of assessment.

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.

Practical assessment must occur in a workplace, or realistic simulated workplace, under the normal range of workplace conditions.

Simulations and scenarios may be used where situations cannot be provided in the workplace or may occur only rarely, in particular for situations relating to emergency procedures and adverse weather conditions where assessment would be unsafe, impractical or may lead to environmental damage.

Resources for assessment must include access to:

- a commercial vessel greater than or equal to 5.0 m in length with propulsion power of greater than or equal to 75 kW, or appropriate engine ashore
- applicable documentation, such as legislation, regulations, codes of practice, safety management system, workplace procedures and operational manuals
- tools, equipment, machinery, materials and relevant personal protective equipment (PPE) that are currently used in industry.

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