



Australian Government

MARB027 Perform basic servicing and maintenance of main propulsion unit and auxiliary systems

Release: 2

MARB027 Perform basic servicing and maintenance of 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.

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 perform basic maintenance and servicing of main propulsion units and auxiliary systems.

This unit applies to people working in the maritime industry in the capacity of:

- Coxswain Grade 1
- Coxswain Grade 2.

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

B – Equipment Checking and Maintenance

Unit Sector

Not Applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare for work

PERFORMANCE CRITERIA

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

- 1.1** Manufacturer equipment specifications are obtained
- 1.2** Safety requirements associated with maintaining equipment and workplace environment are implemented
- 1.3** Tasks are planned and sequenced in conjunction with others involved in or affected by maintenance work
- 1.4** Tools and equipment are selected and checked for serviceability
- 1.5** Work area is prepared

2 Carry out routine service

- 2.1** Equipment is inspected and inspection results are compared with manufacturer specifications
- 2.2** Servicing tasks are carried out to specifications
- 2.3** Mechanical equipment and system components are checked with appropriate instruments
- 2.4** Faulty items or components are identified and serviceability or unserviceability is determined
- 2.5** Unserviceable equipment is tagged according to workplace procedures

3 Repair or replace faulty components

- 3.1** Equipment is safely isolated according to regulations and/or work health and safety (WHS)/occupational health and safety (OHS) requirements
- 3.2** Faulty items or components are removed using appropriate tools and equipment according to workplace procedures
- 3.3** Replaceable items are selected or serviceable items are fitted according to manufacturer specifications
- 3.4** Adjustments are made to equipment or components to comply with specifications
- 3.5** Operational checks are carried out on system to ensure its compliance with manufacturer specification

- 3.6** Maintenance report and logbooks are completed according to workplace procedures
- 4 Clean up**
 - 4.1** Work area is cleared and cleaned
 - 4.2** Materials are disposed of or recycled according to legislative and workplace requirements
 - 4.3** Tools and equipment are cleaned, checked and stored according to 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 MARB002 Perform basic servicing and maintenance of 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 MARB027 Perform basic servicing and maintenance of 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 state or territory work health and safety (WHS)/occupational health and safety (OHS) requirements (specifically relating to personal protective equipment (PPE), use of tools and equipment, workplace environment and safety, handling of materials, hazard control and hazardous materials and substances) as per legislative requirements and vessel operating procedures
- completing all work required to service, replace and repair faulty equipment to specification/s
- completing relevant logbooks and service reports
- implementing safe operating procedures, including recognising and preventing hazards: associated with:
 - worksite visitors and the public
- performing emergency shutdown and stopping of equipment
- reading and interpreting:
 - gauges
 - safety data sheets (SDS)/material safety data sheets (MSDS)
- selecting and using appropriate processes, tools and equipment
- servicing and maintaining propulsion machinery and auxiliary equipment to manufacturer specifications
- undertaking basic servicing tasks.

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 servicing tasks, including:
 - battery maintenance

- checking shaft glands, strainers, cooling system, fuel levels and fuel systems
- greasing
- visually checking for oil leaks
- visually checking, identifying and reporting obvious equipment faults
- bleeding fuel systems
- care of extra low voltage electrical systems on a vessel, including precautions necessary when charging batteries
- environmental impacts and minimisation measures associated with servicing and maintaining propulsion machinery and auxiliary equipment
- identifying faulty items or components and appropriate actions required to rectify faults
- manufacturer specifications for servicing and maintaining propulsion machinery and auxiliary equipment
- operating principles and operating methods for propulsion machinery and auxiliary equipment
- process for servicing and maintaining propulsion machinery and auxiliary equipment to manufacturer specifications, including:
 - ancillary deck equipment
 - bilge systems
 - cooling and lubricating systems
 - diesel engines
 - drive train assembly
 - fuel systems
 - low voltage electrical systems
 - monitoring machinery
 - outboard engines
 - shore power leads and connections
 - steering gear
- processes of maintaining propulsion machinery and auxiliary equipment
- relevant WHS/OHS and PPE requirements including:
 - emergency procedures, including emergency shutdown and stopping of equipment
 - job safety analyses (JSAs) and safe work method statements
 - potential risks and hazards associated with servicing and maintaining propulsion machinery and auxiliary equipment
 - safe and environmentally responsible work practices in servicing and maintenance activities
- routine checks required when servicing and maintaining propelling machinery, auxiliary equipment and other mechanical equipment.

Assessment Conditions

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

As a minimum, assessment must satisfy applicable regulatory requirements, which include requirements in the Standards for Registered Training Organisations 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 metres 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 PPE currently used in industry.

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