



Australian Government

MARC007 Operate marine internal combustion engines, and propulsion and auxiliary systems

Release: 1

MARC007 Operate marine internal combustion engines, and propulsion and auxiliary systems

Modification History

Release 1. New unit of competency.

Application

This unit involves the skills and knowledge required to safely operate marine internal combustion engines, and propulsion and auxiliary systems on a vessel.

This unit applies to engine workers in the maritime industry working as a Marine Engine Driver Grade 3 Near Coastal on vessels up to 500 kW or as a Marine Engine Driver Grade 2 Near Coastal on vessels up to 750 kW or as a Marine Engine Driver Grade 1 Near Coastal on vessels up to 1500 kW.

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 engine, and propulsion and auxiliary systems for use | 1.1 | Appropriate personal protective 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 Engine is started according to manufacturer specifications and organisational requirements
 - 1.4 Deviations from the norm are promptly identified and rectified
 - 1.5 Adjustments are made to achieve a safe and efficient operation
 - 1.6 Inability to start equipment is reported, and logged promptly and accurately to appropriate personnel
- 2 Operate engine, and propulsion and auxiliary systems**
- 2.1 Engine, and propulsion and auxiliary systems are operated in a safe and controlled manner
 - 2.2 Performance and efficiency of engine, and propulsion and auxiliary systems are monitored according manufacturer instructions
 - 2.3 Engine, and propulsion and auxiliary systems are operated within defined operating limits when running, to achieve optimum safety and efficiency
 - 2.4 Environmental implications associated with operation of engine, and propulsion and auxiliary systems are identified and controlled
 - 2.5 Deviations from normal operations are promptly identified
 - 2.6 Action is taken to identify and rectify basic operational faults to maintain optimum safety and efficiency
 - 2.7 Appropriate action is taken in the event of a malfunction or emergency
- 3 Complete operations**
- 3.1 Equipment shut-down procedures are carried out according to manufacturer specifications and workplace procedures
 - 3.2 Engine, propulsion and auxiliary system operational records are maintained according to workplace procedures
 - 3.3 Equipment damage, malfunctions or irregular performance is recorded and reported according to 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.

- Pre-operational checks include one or more of the following:
- checking coolants levels
 - checking:
 - filters
 - fuel level
 - starting system
 - there is enough power available on switchboard and close isolator
 - confirming correct pressures of auxiliary systems
 - connections
 - dip oil
 - inspecting batteries and turning on isolator
 - inspecting for leaks and faults
 - inspecting safety guards, power take off stubs and shafts
 - leads
 - lines
 - opening valves as appropriate

- Equipment includes one or more of the following:
- auxiliary equipment and associated spaces
 - cooling systems
 - firefighting equipment
 - fuel systems
 - gearbox
 - lubricating systems
 - marine two- and four-stroke:
 - diesel engines
 - petrol engines
 - propeller and immediate shafting alignment
 - pumping systems
 - refrigeration systems
 - steering systems
 - sterndrive and water jet drive units

- Environmental implications must include:
- excessive noise and exhaust emissions
 - loss of fuel and oil overside

- Basic operational faults include one or more of the following:
- starting faults
 - failure of:
 - cooling systems
 - fuel system
 - lubrication systems
 - gearbox faults
 - pumping systems failure
 - refrigeration systems failure
 - steering failure

- Emergencies include one or more of the following:
- failure of main engine
 - fire
 - flooding
 - loss of steering

- Operational records include one or more of the following:
- maintenance logs
 - running logs

Unit Mapping Information

This is a new unit. This unit is equivalent to MARC2007A Operate marine internal combustion engines, and propulsion and auxiliary systems.

Links

MAR Maritime Training Package Companion Volume Implementation Guide at: -
http://companion_volumes.vetnet.education.gov.au/Pages/TrainingPackage.aspx?pid=22