



Australian Government

MARC040 Manage fuel systems

Release: 2

MARC040 Manage fuel 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 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 manage the fuel and fuel oil systems of a vessel to ensure safety of operation and to avoid pollution of the marine environment.

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

- Marine Engine Driver Grade 1 Near Coastal
- Marine Engine Driver Grade 2 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 Marine Engine Driver Grade 2 Near Coastal and Marine Engine Driver Grade 1 Near Coastal 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

Elements describe the essential outcomes.

1 Plan refuelling

2 Prepare vessel for refuelling

3 Complete refuelling operations

4 Manage an emergency

PERFORMANCE CRITERIA

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

1.1 Fuel tanks are dipped to establish current level of fuel

1.2 Amount of fuel on board vessel is calculated and positioning of fuel is determined

1.3 Impact of refuelling on vessel safety is determined

1.4 Fuel is ordered according to organisational procedures

2.1 Vessel is positioned and secured for refuelling

2.2 Refuelling equipment is correctly deployed according to organisational procedures

2.3 Communication between all people involved in refuelling procedures is established

2.4 Tank valves are opened as necessary and refuelling operations are performed according to organisational procedures and regulatory requirements

2.5 Tanks are dipped to ensure correct amount of fuel has been received

3.1 Shutdown procedures are conducted according to organisational procedures

3.2 Refuelling equipment is secured according to organisational procedures

3.3 Refuelling records are completed according to organisational procedures and regulatory requirements

3.4 Malfunctions, faults, irregular performance or damage to refuelling equipment are recorded according to organisational procedures

4.1 Appropriate response is made to emergency situation according to organisational procedures

4.2 Personnel are correctly notified and their activities are managed to ensure their safety according to

organisational procedures

- 4.3 Waste containment measures are implemented to protect the environment
- 4.4 Appropriate authorities are notified when required
- 4.5 Incident is recorded according to regulatory requirements and organisational 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 MARC008 Manage fuel 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 MARC040 Manage fuel 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) and pollution control, legislation and policies
- carrying out accurate and reliable calculations dealing with bunkering capacity, consumption of fuel, speed and range of vessel, volumes and conversion of volumes to litres
- completing required records
- conducting refuelling completion procedures, including communications with fuel supplier and valve closure
- managing refuelling to ensure safety of operation and avoid pollution of marine environment
- measuring tank levels
- recognising faulty equipment and taking appropriate actions
- recognising problems and hazards during refuelling operations and taking appropriate actions
- selecting and using relevant equipment required for refuelling operations
- taking appropriate actions in response to an accidental spillage or safety incident during refuelling operations.

Knowledge Evidence

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

- appropriate authorities to be notified in the event of an emergency
- arrangement of fuel oil systems
- calculations of volumes
- condensation in fuel tanks
- conversion of volumes to litres

- effect of slack tanks on vessel stability
- emergency situations, including:
 - fire
 - hose rupture or bunker line leak
 - ignition of released fuel vapours
 - loss of stability
 - spillage on deck or overboard
- environmental protection measures to be applied during refuelling or transfer operations
- fuel oil tank components
- fuel tank filling
- functions and responsibilities of crew during refuelling or transfer operations
- hazards and safety precautions to be observed during refuelling or transfer operations
- manufacturer specifications and safety data sheets (SDS)/material safety data sheets (MSDS)
- methods of fuel oil tank content measurement
- process for completing required records including:
 - logbook
 - oil record book
 - port authority documentation
- refuelling and fuel transfer procedures applying to commercial vessels
- refuelling records
- shutdown procedures including communications with fuel supplier and valve closure
- specific fuel consumption
- WHS/OHS and pollution control, legislation and policies.

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:

- applicable documentation, such as legislation, regulations, codes of practice, safety

management systems (SMS), workplace procedures and operational manuals, including:

- logbook
- oil record book
- port authority documentation
- SDS/MSDS
- a commercial vessel with inboard diesel propulsion power of greater than or equal to 150 kW or appropriate engine ashore
- tools, equipment, machinery, materials and relevant personal protective equipment (PPE) currently used in industry.

Links

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