



Australian Government

MARB041 Manage refuelling

Release: 2

MARB041 Manage refuelling

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 changes to Performance Evidence
- Minor change to Knowledge Evidence
- Minor statement changes in Assessment Conditions.

Release 1. This is the first release of this unit of competency in the MAR Maritime Training Package.

Application

This unit involves the skills and knowledge required to manage refuelling and fuel transfer operations.

This includes planning refuelling or fuel transfer operations, preparing vessel for refuelling or fuel transfer operations, completing refuelling operations and managing an emergency.

This unit of competency applies to people working in the maritime industry in the capacity of: Marine Engine Driver 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 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

B - Equipment Checking and Maintenance

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Plan refuelling or fuel transfer operations

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** Fuel is ordered according to organisational procedures
- 1.3** Amount and positioning of fuel onboard vessel is calculated with reference to tank tables
- 1.4** Impact of refuelling on safety and operation of vessel is determined and appropriate strategies are implemented
- 1.5** Local port authorities are informed of vessel location for bunkering operations and duration of bunkering
- 2.1** Vessel is positioned and secured for refuelling
- 2.2** All personal protective equipment (PPE) is accessed and used
- 2.3** Bunkering equipment is correctly deployed according to organisational procedures
- 2.4** Safety zone for refuelling process is established and maintained for full duration of operation
- 2.5** Procedures for refuelling are established with bunker operator and completed lists are checked according to organisation and safety management system (SMS) requirements
- 2.6** Bunker hose is securely connected to vessel fuel manifold
- 2.7** Tank valves are opened, as necessary, and refuelling operations are performed safely according to SMS and regulatory requirements
- 2.8** Tanks are dipped to ensure correct amount of fuel has been received
- 2.9** Fuel samples are taken to check quality of fuel received

- and appropriate action is taken if fuel sample is not to specification
- | | |
|---|--|
| 3 Complete refuelling operations | 3.1 Shutdown procedures are conducted according to organisational procedures |
| | 3.2 Malfunctions, faults, irregular performance or damage to refuelling equipment are recorded and repairs are organised according to organisational procedures |
| | 3.3 Refuelling equipment is maintained and secured according to organisational procedures |
| | 3.4 Refuelling records are completed according to organisational procedures and regulatory requirements |
| 4 Manage an emergency | 4.1 Appropriate response is made to an emergency situation according to organisational procedures |
| | 4.2 Safety zone is closed off and isolated according to organisational procedures |
| | 4.3 All persons in the safety zone are correctly notified and their activities are managed to ensure safety according to organisational procedures |
| | 4.4 Appropriate authorities are notified and actions are taken as directed according to emergency procedures and regulatory requirements |
| | 4.5 Documentation of emergency is completed according to organisational procedures and relevant maritime authority |

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 MARB009 Manage refuelling.

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 MARB041 Manage refuelling

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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:

- completing refuelling records, including:
 - bunker receipt
 - logbook entry
 - oil record book
- implementing procedures for refuelling, including:
 - emergency disconnection procedures
 - flow rates
 - system of communication with supplier in relation to starting and shutdown procedures
- implementing shutdown procedures, including:
 - blowing through of bunker hoses
 - disconnecting bunker hose
 - isolating fuel valves
 - stowing equipment
- measuring tank levels
- performing calculations involving:
 - bunkering capacity
 - consumption of fuel, hourly fuel consumption, theoretical steaming times and distances
 - volume and capacity of regular shaped tanks
- recognising faulty equipment and taking appropriate actions
- recognising problems and hazards during refuelling and fuel transfer operations, and taking appropriate actions
- selecting and using relevant equipment required for refuelling and fuel transfer operations
- taking appropriate actions in an accidental spillage, fire or safety incident during refuelling

and fuel transfer operations.

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:

- calculations of volumes
- emergency situations whilst refuelling
- environmental protection measures to be applied during refuelling or transfer operations
- functions and responsibilities of crew during refuelling or transfer operations
- hazards and safety precautions to be observed during refuelling or transfer operations
- impact of refuelling on safety and operation of vessel, including:
 - hot work
 - increase in the potential for fire
 - loading and discharging operations
 - stability, including the free surface effect
 - toxic fumes
 - work being conducted by others
- refuelling and fuel transfer procedures applying to commercial vessels, including:
 - bunding
 - bunker flag
 - fire-extinguishers
 - measuring tank levels
 - no smoking signs
 - radios
 - sample containers
 - scupper plugs
 - sounding tape
 - spill kit
 - tank tables
 - tank tables and fuel line diagrams
- requirements for reporting incidents
- safety zones, including:
 - area where no smoking or hot work is permitted
 - systems that can contain a spill
- work health and safety (WHS)/occupational health and safety (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:

- a commercial vessel with inboard diesel propulsion power of greater than or equal to 375 kW or appropriate engine, propulsion plant and auxiliary systems ashore
- applicable documentation, such as legislation, regulations, codes of practice, workplace procedures and operational manuals
- relevant equipment required for bunkering
- relevant personal protective equipment (PPE)
- tools, equipment, machinery and materials currently used in industry.

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