



Australian Government

MARC2001A Complete engine room tasks

Release 1

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Modification History

Release 1

This is the first release of this unit.

Unit Descriptor

This unit involves the skills and knowledge required to perform tasks to support the operation of marine internal combustion engines, marine propulsion systems, vessel machinery and auxiliary systems.

Application of the Unit

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

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

- | | |
|---|---|
| 1 Plan tasks | <ul style="list-style-type: none">1.1 Work plan is developed and sequenced in conjunction with others involved in or affected by plan, according to organisational procedures1.2 Timelines, jobs and work priorities are confirmed with Master and other relevant authorities, when applicable |
| 2 Conduct refuelling operations | <ul style="list-style-type: none">2.1 Tank levels are correctly measured and reported pre and post fuelling operations2.2 Fuel capacity is calculated2.3 Tools and equipment are selected and checked for serviceability2.4 Safety boundary and signage for the refuelling operation is accessed and used2.5 Fire and spill prevention systems are correctly deployed2.6 All personal protective equipment is accessed and used2.7 Refuelling operations are performed safely and effective communication is maintained with relevant personnel to ensure the safety and integrity of vessel and crew2.8 Appropriate action is taken to handle incidents arising during fuelling operations according to organisational procedures and regulatory requirements |
| 3 Maintain stock and consumables | <ul style="list-style-type: none">3.1 Stock levels and consumables are monitored and maintained at required levels3.2 Stock and consumables are reordered as required3.3 Records of stock inventories and consumables are maintained and discrepancies are identified |
| 4 Perform general housekeeping tasks | <ul style="list-style-type: none">4.1 Housekeeping tasks are clarified against work plan4.2 Appropriate equipment for specific tasks is determined, prepared and used4.3 Housekeeping tasks are performed and assessed against task requirements4.4 Procedures for handling, storing and disposing of cleaning liquids are implemented according to regulatory requirements |

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|--|---|
| 5 Stow and manage flammable and explosive materials | <ul style="list-style-type: none">5.1 Hazards of <i>flammable and explosive materials</i> are identified5.2 Suitability of stowage areas is verified against regulatory requirements and organisational procedures5.3 Procedures for safe handling and stowage of flammable and explosive materials are implemented according to regulatory requirements and organisational practices |
| 6 Prepare simple reports | <ul style="list-style-type: none">6.1 Requirements for <i>simple reports</i> are identified6.2 Information is prepared according to organisational procedures6.3 Calculations for fuel consumption and voyage duration are completed6.4 Information is assessed for accuracy, currency and relevance for inclusion in report6.5 Report is written using appropriate terminology |

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required Skills:

- Assess information and data for relevance
- Complete all work to specification
- Conduct refuelling
- Convert:
 - units to multiples of base units
 - fractions to decimals
- Keep running and maintenance logs
- Perform calculations involving:
 - volume and capacity of regular shaped tanks
 - consumption of fuel and lubricating oil, hourly fuel consumption, theoretical steaming times and distances
- Perform calculations to determine the area of a circle
- Sequence tasks
- Use relative density/specific gravity to convert quantity in litres and volume to mass
- Write simple reports

Required Knowledge:

- Common SI units such as kilogram, tonne, litre and metre
- Identification of hazardous goods
- Principles of simple report writing
- Procedures and requirements for cleaning and housekeeping
- Safety data sheets (SDS)/material safety data sheets (MSDS)
- Work health and safety (WHS)/occupational health and safety (OHS) practices, including hazard identification, risk assessment and risk control options

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, the required skills and knowledge, the range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the Elements, Performance Criteria, Required Skills, Required Knowledge and include:

- providing the required amount of detail in reports
- ensuring currency of relevant WHS/OHS skills and knowledge
- performing accurate and reliable calculations.

Context of and specific resources for assessment

Performance is demonstrated consistently over time and in a suitable range of contexts.

Resources for assessment include access to:

- industry-approved marine operations site where completing engine room tasks can be conducted
- tools, equipment and personal protective equipment currently used in industry
- relevant regulatory and equipment documentation that impacts on work activities
- range of relevant exercises, case studies and/or other simulated practical and knowledge assessments
- appropriate range of relevant operational situations in the workplace.

In both real and simulated environments, access is required to:

- relevant and appropriate materials and equipment
- applicable documentation including workplace procedures, regulations, codes of practice and operation manuals.

Method of assessment

Practical assessment must occur in an:

- appropriately simulated workplace environment and/or
- appropriate range of situations in the workplace.

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate to this unit:

- direct observation of the candidate completing engine room tasks
- direct observation of the candidate applying relevant WHS/OHS requirements and work practices.

Guidance information for

Holistic assessment with other units relevant to the industry

assessment

sector, workplace and job role is recommended.

In all cases where practical assessment is used it should be combined with targeted questioning to assess Required Knowledge.

Assessment processes and techniques must be appropriate to the language and literacy requirements of the work being performed and the capacity of the candidate.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below.

Tools and equipment may include:

- Bunding
- Firefighting equipment
- Personal protective clothing and equipment
- Scupper plugs
- Signage
- Spill kit

Incidents may include:

- Fire
- Spillage on board
- Spillage over the side

Stock and consumables may include:

- Anodes
- Batteries
- Cleaning material and equipment
- Filters
- Fuel
- Lubricants
- Paint
- Spare parts
- Water

Housekeeping tasks may include:

- Correct disposal of waste
- Correct storage of:
 - tools
 - equipment
 - chemicals
- General cleaning
- Pumping of bilges
- Removal or lashing of loose items

Flammable and explosive materials may include:

- Battery generated gases
- Chemicals
- Fuels
- LPG
- Lubricating oils
- Oil soaked rags (spontaneous combustion)

Simple reports may include:

- Breakdown reports
- Maintenance logs
- Repair requests and reports
- Running logs

Unit Sector(s)

Not applicable.

Competency Field

Equipment Operations