



**Australian Government**

**Assessment Requirements for MARC050  
Operate auxiliary machinery systems up to  
1500 kW**

**Release: 1**

# Assessment Requirements for MARC050 Operate auxiliary machinery systems up to 1500 kW

## Modification History

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

## 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:

- interpreting:
  - manufacturer instructions for the operation of auxiliary machinery systems
  - maritime regulations, rules and instructions
- maintaining records of the operation and maintenance of auxiliary machinery systems and any related safety incidents, including:
  - logbooks
  - maintenance records
- monitoring and evaluating performance of auxiliary machinery systems
- operating auxiliary equipment, including:
  - bilge, ballast and seawater systems
  - electrical system
  - fuel and lubricating oil system
  - propulsion and steering system
  - refrigeration system.

## 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:

- alarm panels
- auxiliary machinery systems, including:
  - cargo discharging or loading systems
  - commercial refrigeration and freezer plants
  - compressed air
  - control air systems
  - deck machinery
  - fire, bilge and ballast pumping systems

- freshwater generation
- sewage treatment
- auxiliary systems, identified components, materials and construction
- awareness of one's surroundings and changes to these surroundings
- causes of deck machinery faults
- characteristics of auxiliary machinery systems
- closing devices and remote shut-offs
- dangers associated with operating shipboard auxiliary machinery systems and related hazard prevention strategies
- drive systems, belts, clutches and motors
- electro-hydraulic steering gear
- emergency operation in electrical or hydraulic failure
- emergency procedures, including:
  - loss of:
    - control air pressure
    - electrical power
    - steering system
    - hydraulic system
- emergency shut-offs and closures
- fire detection and fire alarm systems
- fixed firefighting installations, including CO<sub>2</sub>, foam, water mist and pyrogen
- function and importance of:
  - grease
  - lubricating oil
- hydraulic systems, including steering gear and deck machinery
- identification and operation of rudder and stock support bearings, glands, packing and seals
- identification of:
  - faults in refrigeration systems
  - plant and its operation
  - refrigeration cycle
  - refrigeration system components
- methods for controlling and managing operation of shipboard auxiliary machinery systems
- operation of deck machinery
- problems associated with auxiliary machinery systems, and appropriate preventative and remedial action and solutions
- relevant sections of Commonwealth, state and territory maritime regulations, and National Standard for Commercial Vessels (NSCV)
- relevant unsatisfactory performance of auxiliary machinery systems outside specified limits and appropriate action requirements
- relevant work health and safety (WHS)/occupational health and safety (OHS) legislation and policies
- requirements for waste management and pollution control from auxiliary machinery systems

under the International Convention for the Prevention of Pollution from Ships (MARPOL)

- rudder construction and rudder types
- safe operational practices and working procedure of auxiliary machinery
- safeguards and protective devices for deck machinery
- simple hydraulic circuits
- strainers, mud-boxes and foot valves
- terminology of materials technology
- types of:
  - fixed firefighting systems, including gas and foam flooding systems
  - pumps and associated safety devices
  - refrigerant
  - winches and windlass.

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

## Links

Companion Volume implementation guide can be found in VetNet -

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