



Australian Government

**Assessment Requirements for MARB048
Undertake maintenance of machinery,
machinery systems and structural
components**

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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. 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:

- completing maintenance records
- developing effective planning documents
- implementing safe and environmentally responsible work practices
- interpreting and applying documentation and instructions, including:
 - lubricating oil and cooling water reports
 - manufacturer instructions, including:
 - safety data sheets (SDS)/material safety data sheets (MSDS)
 - work health and safety (WHS)/occupational health and safety (OHS) requirements
- managing legislative compliance and compliance records
- recognising and rectifying operating faults in accordance with manufacturer specifications and fault-finding procedures
- overhauling and maintaining pumps, bilge and seawater systems
- performing maintenance tasks, including:
 - changing filters and oil
 - cleaning coolers and strainers
 - lubrication and topping up oils
- planning and organising application of control techniques for hull damage
- planning and preparing for maintenance, including isolating equipment
- recognising damage to hull of small vessel and taking appropriate actions according to operating instructions
- repairing pipe work
- scheduled survey inspections
- selecting and using correct tools and equipment for maintenance task
- servicing valves.

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:

- appropriate mathematical procedures for estimating and measuring, including calculating time to complete tasks
- breakdowns, including:
 - cooling water system failure
 - engine failure
 - exhaust systems
 - fuel system failure
 - gearbox failure
 - loss of control systems
 - lubricating systems failure
 - power plant failure
 - propeller and shafting arrangements systems
 - pumping systems failure
 - refrigeration plant and its operation
 - steering gear failure
- causes of vibrations and undue wear in power transmission system
- construction, layout and subdivision requirements of a typical vessel, including freeboard and bulkhead deck, watertight compartments, weather tight compartments and bulkheads of vessel
- costs of material, consumables and labour
- dangers associated with back flooding and methods to prevent back flooding
- environmental risks and hazards; safe disposal of waste material; safe use and storage of flammable/explosive liquids, gases, solids and other materials normally carried on board, including spare fuel, lubricants, liquified petroleum gas (LPG) cooking gas and flares
- function of lubricating oil and grease
- inspections to be undertaken on vessel hull during slipping or dry docking
- maintenance procedures and methodologies for:
 - batteries
 - cooling water systems, including treatment
 - fuel systems, including contamination
 - heat exchangers
 - hull maintenance, including use of sacrificial anodes
 - hydraulic systems
 - lubricating oil systems, including contamination
 - power transmission systems
 - oily water separator
 - steering systems

- starter motors, alternators and associated equipment
- material and stress characteristics in constructing a vessel
- methods of corrosion and how to prevent corrosion
- organisational requirements, policies and procedures for organising maintenance programs
- principal features and structure of a vessel
- procedures for recording and reporting workplace information
- special requirements for maintenance, including:
 - asbestos awareness
 - awareness of confined and restricted space operations
 - dry docking
 - handling refrigerant gas within regulatory requirements
- types of tools and equipment, and procedures for their safe use and maintenance
- valve types and construction.

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 and 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, including:
 - hydraulic systems
 - pumps and pumping systems
- applicable documentation, such as legislation, regulations, codes of practice, workplace procedures and operational manuals.

Links

Companion Volume Implementation Guides are found in VETNet -

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