



Australian Government

**Assessment Requirements for MARC054
Operate propulsion transmission systems
up to 1500 kW**

Release: 1

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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:

- carrying out necessary calculations associated with managing propulsion transmission systems, including:
 - calculating gearbox ratios
 - propeller slip
 - theoretical distance
- maintaining records of operating and maintaining propulsion transmission systems and any related safety incidents
- monitoring various gauges and evaluating performance of propulsion transmission systems
- operating propulsion transmission system in a safe and controlled manner to manufacturer technical specifications.

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:

- basic reverse/reduction propulsion transmission systems operation
- bearings
- characteristics of propulsion transmission systems, including operational limits
- construction and materials of propulsion transmission systems
- fault identification on propulsion transmission systems
- lubricating and cooling systems for propulsion transmission systems
- manufacturer instructions for operating propulsion transmission systems
- maritime regulations, rules and instructions
- methods for controlling and managing the operation of shipboard propulsion transmission systems
- problems associated with propulsion transmission systems and appropriate preventative and remedial actions and solutions
- procedures for monitoring and evaluating performance of propulsion transmission systems
- propeller and intermediate shaft systems

- propeller shape, design and materials
- propeller types and arrangements, including fixed pitch and controllable pitch propellers
- propulsion transmission systems, including:
 - control system
 - gearbox and reduction gear arrangements
 - intermediate bearings
 - propeller types and arrangements
 - shafting arrangements
 - stern tube and their systems
 - transmission system
- recognising operational faults and problems that may occur with propulsion transmission systems and taking appropriate preventative and remedial actions
- relevant work health and safety (WHS)/occupational health and safety (OHS) legislation and policies
- seals and glands
- shafting materials
- steerable/rudder propellers
- stern and jet water drive
- stern tube bearing systems, including lubrication, materials and components
- types of gear trains.

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
- applicable documentation, such as legislation, regulations, codes of practice, workplace procedures and operational manuals
- tools, equipment, machinery, materials and personal protective equipment (PPE) currently

used in industry.

Links

Companion Volume implementation guide can be found in VetNet -

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