



Australian Government

**Assessment Requirements for MARL033
Demonstrate advanced knowledge of
marine diesel engines and systems**

Release: 1

Assessment Requirements for MARL033 Demonstrate advanced knowledge of marine diesel engines and systems

Modification History

Release 1. New unit of competency.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least one occasion and include:

- accessing diagnostic information related to marine diesel engines and systems
- applying relevant work health and safety/occupational health and safety (WHS/OHS) requirements and work practices
- assessing own work outcomes and maintaining knowledge of current codes, standards, regulations and industry practices
- explaining operation of marine diesel engines and systems, and imparting complex information and ideas verbally, in writing and visually
- identifying and applying relevant solutions for addressing problems associated with marine diesel engines and systems
- identifying and interpreting complex diagnostic information and performing mathematical calculations related to operating, repairing and maintaining marine diesel engines and systems
- identifying methods, procedures and materials needed for operating, maintaining and repairing marine diesel engines and systems
- reading and interpreting manuals, technical specifications, safety data sheets/material safety data sheets and manufacturer guides related to operating, repairing and maintaining marine diesel engines and systems.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- basic principles of diesel engine operation
- causes of vibration
- combustion diagnostic equipment faults
- components of diesel engines
- cooling systems for main and auxiliary diesel engines
- crankcase and air-line explosions, scavenge and uptake fires
- diesel engine:
 - components
 - lubrication requirements
 - lubrication systems
 - propulsion and power generation
 - starting and manoeuvring
- diesel fuel systems
- fuel injection and pressure charging systems
- manoeuvring systems of diesel engines
- pressure charging diesel engines, including common service faults, actions to rectify faults, emergency operation and isolation procedures
- properties and characteristics of fires
- safe working practices associated with diesel engine maintenance, operation and repair
- scavenge and uptake fires, air-line, crankcase and gearbox explosions
- starting methods of diesel engines
- turbocharger operation
- WHS/OHS requirements and work practices.

Assessment Conditions

Assessors must satisfy National Vocational Education and Training Regulator (NVR)/Australian Quality Training Framework (AQTF) assessor requirements.

Assessment must satisfy the National Vocational Education and Training Regulator (NVR)/Australian Quality Training Framework (AQTF) standards.

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.

Assessment must occur in workplace operational situations or where these are not available, in simulated workplace operational situations or an industry-approved marine operations site that replicates workplace conditions where advanced knowledge of marine diesel engines and systems can be demonstrated.

Resources for assessment include access to:

- applicable documentation including workplace procedures, regulations, codes of practice and operation manuals

- diagrams, specifications and other information required for performing basic calculations related to marine diesel engines and systems
- technical reference library with current publications on marine diesel engines and systems
- tools, equipment and personal protective equipment currently used in industry.

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

Links

Companion Volume implementation guides are found in VETNet -

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