



Australian Government

MAR60120 Advanced Diploma of Marine Engineering (Class 1)

Release 1

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Modification History

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

Qualification Description

This qualification is suitable for people working in the maritime industry seeking an Australian Maritime Safety Authority (AMSA) certification in the capacity of:

- Engineer Class 1 (STCW Chief Engineer Unlimited)
- Engineer Class 2 (STCW Second Engineer Unlimited)

on ships powered by main propulsion machinery of any propulsion power in any operating area.

Please note: RTO to insert on the testamur the job role and specialisation, if applicable, selected from the group choice below

Licensing/Regulatory Information

Legislative and regulatory requirements are applicable to this qualification:

- This qualification is currently cited as meeting some of the requirements for certification by AMSA as an Engineer Class 1 (STCW Chief Engineer Unlimited) or Engineer Class 2 (STCW Second Engineer Unlimited) as defined in Marine Orders and the International Convention on Standards of Training Certification and Watchkeeping for Seafarers (STCW).

This qualification is required to obtain an AMSA certificate of competency as an Engineer Class 1 (STCW Chief Engineer Unlimited) as defined in Marine Orders and STCW.

AMSA certification of competency will require:

- completing an approved program of study that meets regulations STCW A-III/1 and A-III/2 (MAR60120 Advanced Diploma of Marine Engineering Class 1)
- holding or have held certificates of competency as defined in Marine Order 72
- qualifying sea service as defined in Marine Order 72
- completing STCW short courses as defined in Marine Order 72
- holding a valid AMSA certificate of medical fitness
- having passed a final AMSA assessment
- meeting any other regulatory requirements as defined in Marine Order 72.

This qualification is required to obtain an AMSA certificate of competency as an Engineer Class 2 (STCW Second Engineer Unlimited) as defined in Marine Orders and STCW.

AMSA certification of competency will require:

- completing an approved program of study that meets regulations STCW A-III/1 and A-III/2 (MAR60120 Advanced Diploma of Marine Engineering Class 1)
- holding or have held certificates of competency as defined in Marine Order 72
- qualifying sea service as defined in Marine Order 72
- completing STCW short courses as defined in Marine Order 72
- holding a valid AMSA certificate of medical fitness
- having passed a final AMSA assessment
- meeting any other regulatory requirements as defined in Marine Order 72.

Seafarers seeking certification should check requirements with AMSA.

Entry Requirements

There are no entry requirements for this qualification.

Packaging Rules

Total number of units

- **Engineer Class 1 (Motor)** = 14 units: 13 core units, plus one unit from Group A
- **Engineer Class 1 (Steam)** = 14 units: 13 core units, plus one unit from Group B
- **Engineer Class 1 (Motor and Steam)** = 15 units: 13 core units, plus all units from Group C

AMSA specification

- **Engineer Class 1 (Motor) Specialist** = 17 units: 13 core units, plus unit from Group A, plus 3 units from Group D
- **Engineer Class 1 (Steam) Specialist** = 17 units: 13 core units, plus unit from Group B, plus 3 units from Group D
- **Engineer Class 1 (Steam and Motor) Specialist** = 18 units: 13 core units, plus all units from Group C, plus 3 units from Group D

Core units

Controlling the operation of the ship and care for persons on board at the management level

MARD006 Monitor and control compliance with legislative requirements

MARF039 Manage safety and security of vessel, crew and passengers

MARF045 Provide leadership and managerial capability

Electrical, electronic and control engineering at the management level

MARB044 Operate and maintain ship power systems exceeding 1,000 volts

MARL038 Apply advanced principles of marine electrotechnology

MARL049 Demonstrate advanced knowledge of marine control systems and automation

MARL051 Demonstrate advanced knowledge of marine electrical systems

Marine engineering at the management level (mathematics)

MARL039 Apply advanced principles of marine engineering thermodynamics

MARL040 Apply advanced principles of marine mechanics

Marine engineering at the management level (Part A)

MARL047 Demonstrate advanced knowledge of marine auxiliary boilers

MARL048 Demonstrate advanced knowledge of marine auxiliary machinery and systems

Maintenance and repair at the management level

MARL041 Apply advanced principles of trim, stability and stress

MARL053 Demonstrate advanced knowledge of ship operations and maintenance

GROUP A: Motor

Marine engineering at the management level (Part B)

MARL050 Demonstrate advanced knowledge of marine diesel engines and systems

GROUP B: Steam

Marine engineering at the management level (Part C)

MARL052 Demonstrate advanced knowledge of marine steam turbines and main boilers

GROUP C: Motor and Steam

Marine engineering at the management level (Part D)

MARL050 Demonstrate advanced knowledge of marine diesel engines and systems

MARL052 Demonstrate advanced knowledge of marine steam turbines and main boilers

GROUP D: Specialist Electives

MARA011 Contribute to basic operations of ships in polar waters

MARA014 Contribute to basic operations of a ship subject to IGF Code

MARA018 Manage advanced chemical tanker cargo operations

MARA019 Manage advanced liquefied gas tanker cargo operations

MARA020 Manage advanced oil tanker cargo operations

MARA021 Manage advanced operations of a ship subject to IGF Code

MARB037 Maintain and repair bridge navigation equipment and ship communication systems

MARB040 Maintain control and safety systems of hotel equipment

MARB049 Use internal communication systems, operate computers and computer networks on ships

MARC056 Operate roll-on and roll-off machinery and equipment on board a vessel

MARF032 Apply medical first aid on board ship

MARF034 Carry out fast rescue craft operations

MARF038 Manage provision of medical care on board a vessel

MARF040 Manage ship security (Ship Security Officer)

MARN012 Manage advanced operations of ships in polar waters

Qualification Mapping Information

This qualification replaces and is equivalent to MAR60115 Advanced Diploma of Maritime Operations (Marine Engineering Class 2) and MAR60215 Advanced Diploma of Maritime Operations (Marine Engineering Class 1).

Links

Companion Volume implementation guide can be found in VetNet -

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

