MAR50120 Diploma of Marine Engineering

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 3 Near Coastal
- Engineer Watchkeeper (STCW Engineer Watchkeeper Unlimited)
- Electro-Technical Officer (STCW Electro-Technical Officer Unlimited).

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 3 Near Coastal as defined in Marine Order 505 (Certificates of competency – National Law) 2013.

- This qualification is currently cited as meeting some of the requirements for certification by AMSA as an Engineer Watchkeeper (STCW Engineer Watchkeeper Unlimited) or Electro-Technical Officer (STCW Electro-Technical Officer 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 AMSA certificate of competency as an Engineer Class 3 Near Coastal as defined in Marine Order 505 (Certificates of competency – National Law) 2013.

AMSA certification of competency will require:

- completing an approved program of study that meets Engineer Class 3 Near Coastal at Diploma level (MAR50120 Diploma of Marine Engineering - Engineer Class 3 Near Coastal)
- holding or have held certificates of competency as defined in National Standards for Commercial Vessels (NSCV) Part D
- qualifying sea service as defined in the NSCV Part D
- meeting the medical and eyesight requirements specified in NSCV Part D
- having passed a final AMSA assessment

- meeting any other regulatory requirements as defined in the NSCV Part D.

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

AMSA certification of competency will require:

- completing an approved program of study that meets regulation STCW A-III/1 (MAR50120 Diploma of Marine Engineering - Engineer Watchkeeper)
- 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 Electro-Technical Officer (STCW Electro-Technical Officer Unlimited) as defined in Marine Orders and STCW.

AMSA certification of competency will require:

- completing an approved program of study that meets regulation STCW A-III/6 (MAR50120 Diploma of Marine Engineering - Electro-Technical Officer)
- holding or have held certificates of competency or trade certificate 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 3 Near Coastal** = 19 core units.

- **Engineer Watchkeeper** = 28 units: 19 core units, plus all units from Group A.

- **Electro-Technical Officer** = 32 units: 19 core units, plus all units from Group B.

- **Electro-Technical Officer and Engineer Watchkeeper** = 34 units: 19 core units, plus all units from Group B, plus 2 units from Group A: MARL043 Apply basic principles of marine engineering thermodynamics and MARL044 Apply basic principles of marine mechanics.

AMSA specialisation – Group C

- **Engineer Class 3 Near Coastal Specialist** = 21 units: 19 core units, plus 2 units from Group C.

- **Engineer Watchkeeper Specialist** = 30 units: 19 core units, plus all units from Group A, plus 2 units from Group C.

- **Electro-Technical Officer Specialist** = 34 units: 19 core units, plus all units from Group B, plus 2 units from Group C.

- **Electro-Technical Officer and Engineer Watchkeeper Specialist** = 36 units: 19 core units, plus all units from Group B, plus 2 units from Group A: MARL043 Apply basic principles of marine engineering thermodynamics and MARL044 Apply basic principles of marine mechanics, plus 2 units from Group C.

Core units

Controlling the Operation of the Ship and Care for Persons on Board at the Operational Level (Part A)

HLTAID011   Provide first aid

MARF031   Apply leadership and team working capability

MARF035   Contribute to fire prevention and firefighting (basic firefighting)

MARF037   Follow vessel security procedures (security awareness training)

MARF041   Observe personal safety and social responsibility (PSSR)

MARF043   Operate survival craft, rescue boats and lifesaving appliances (proficiency in survival craft)

MARF044	Prevent, control and fight fires on board a vessel (advanced firefighting)
MARF046	Survive at sea in the event of vessel abandonment and personal survival techniques (PST)
MARF047	Monitor compliance with legislative requirements
MARJ008	Ensure compliance with pollution prevention requirements
RIIWHS202E	Enter and work in confined spaces

Marine Engineering at the Operational Level Mathematics (Part A)

| MARL045 | Apply basic principles of naval architecture |
| MARL061 | Perform basic marine engineering calculations |

Marine Engineering at the Operational Level (Part A)

MARL054	Demonstrate basic knowledge of marine auxiliary boilers
MARL055	Demonstrate basic knowledge of marine auxiliary machinery and equipment
MARL057	Demonstrate basic knowledge of marine diesel engines and systems

Electrical, Electronic and Control Engineering at the Operational Level (Part A)

| MARL056 | Demonstrate basic knowledge of marine control systems and automation |
| MARL058 | Demonstrate basic knowledge of marine electrical systems |

Maintenance and Repair at the Operational Level (Part A)

| MARL060 | Demonstrate knowledge of ships and ship routines |

GROUP A: Engineer Watchkeeper

Marine Engineering at the Operational Level Mathematics (Part B)

| MARL043 | Apply basic principles of marine engineering thermodynamics |
| MARL044 | Apply basic principles of marine mechanics |

Marine Engineering at the Operational Level (Part C)

| MARL059 | Demonstrate basic knowledge of marine steam turbines and main boilers |

Maintenance and Repair at the Operational Level (Part B)

| MARB038 | Maintain and repair marine electrical and electronic equipment |

Electrical, Electronic and Control Engineering at the Operational Level (Part B)

MARB044	Operate and maintain ship power systems exceeding 1,000 volts
MARL042	Apply basic principles of marine electrotechnology

Controlling the Operational of the Ship and Care for Persons on Board at the Operational Level (Part B)

MARA012	Contribute to basic cargo operations on liquefied gas tankers
MARA013	Contribute to basic cargo operations on oil and chemical tankers (basic oil and chemical)
MARF032	Apply medical first aid on board ship

GROUP B: Electro-Technical Officer

Controlling the Operation of the Ship and Care for Persons on Board at the Operational Level (Part B)

MARA012	Contribute to basic cargo operations on liquefied gas tankers
MARA013	Contribute to basic cargo operations on oil and chemical tankers (basic oil and chemical)
MARF032	Apply medical first aid on board ship

Maintenance and Repair at the Operational Level

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

Electrical, Electronic and Control Engineering at the Operational Level (Part C)

MARL038	Apply advanced principles of marine electrotechnology
MARL049	Demonstrate advanced knowledge of marine control systems and automation

Marine Engineering at the Operational Level (Part C)

MARL059	Demonstrate basic knowledge of marine steam turbines and main boilers

Maintain and Repair at the Operational Level (Part B)

| MARB038 | Maintain and repair marine electrical and electronic equipment |

Electrical, Electronic and Control Engineering at the Operational Level (Part D)

MARB044	Operate and maintain ship power systems exceeding 1,000 volts
MARL042	Apply basic principles of marine electrotechnology
MARL051	Demonstrate advanced knowledge of marine electrical systems

GROUP C: 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
MARB039	Maintain and repair shipboard machinery and equipment
MARC046	Employ tools, equipment and materials in a shipboard context
MARC056	Operate roll-on and roll-off machinery and equipment on board a vessel
MARF034	Carry out fast rescue craft operations
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 MAR50115 Diploma of Maritime Operations (Engineer Watchkeeper) and MAR50613 Diploma of Maritime Operations (Marine Engineering Class 3 Near Coastal).

Links

Companion Volume implementation guide can be found in VetNet - https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=772efb7b-4cce-47fe-9bbd-ee3b1d1eb4c2