



Australian Government

MARD002 Manage operations and maintenance on vessels limited by tonnage or near coastal operations

Release: 1

MARD002 Manage operations and maintenance on vessels limited by tonnage or near coastal operations

Modification History

Release 1. New unit of competency.

Application

This unit involves the skills and knowledge required to manage the operations of a commercial ocean-going vessel limited by tonnage or near coastal operations. It includes administration of vessel stability, cargo operations and planned maintenance system in compliance with Australian and international regulations and guidelines, protection of the marine environment and the safety of the vessel and people on board.

This unit applies to people who work in the maritime industry as Master or Chief Mate on a vessel of up to 500 gross tonnage (GT) or as a Watchkeeper on a vessel up to 3000 GT or as Master or Chief Mate on vessels up to 3000 GT operating in near coastal waters.

The unit is consistent with the relevant sections of STCW 95 and Marine Orders under the Australian Navigation Act 2012.

This unit has links to legislative and certification requirements.

Pre-requisite Unit

Not applicable.

Competency Field

D – Administration and Human Resources

Unit Sector

Not applicable.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Manage maintenance of vessel stability and safety parameters

- 1.1 Vessel dynamic stability is interpreted and analysed
- 1.2 Vessel stability is correctly maintained in normal and adverse operational conditions
- 1.3 Vessel safety parameters are correctly maintained within normal operational limits during cargo operations

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| 2 Administer planning of cargo operations on vessel limited by tonnage or near coastal operations | 2.1 | Impact of cargo operations on vessel stability is managed |
| | 2.2 | Draft survey is conducted and used |
| | 2.3 | Appropriate procedures are administered for all cargo operations |
| 3 Administer planned maintenance system | 3.1 | Vessel routine preventative maintenance plan is correctly interpreted and implemented |
| | 3.2 | Arrangements are made for maintenance activities to be carried out at required times |
| | 3.3 | Repairs to vessel hull or equipment and/or repair or replacement of equipment or components are organised according to procedures |
| 4 Dock or slip vessel limited by tonnage or near coastal operations | 4.1 | Type of slipway, dock or vessel lifting facility is identified and suitability for type of hull assessed |
| | 4.2 | Hull data is correctly interpreted and recorded |
| | 4.3 | Appropriate plan is prepared for procedures to be taken onboard vessel prior to, during and on completion of proposed slipping or docking operations |
| | 4.4 | Cradle is correctly prepared prior to slipping of vessel |
| | 4.5 | Appropriate precautions are taken prior to slipping and refloating of vessel and when shoring/supporting vessel |
| | 4.6 | Vessel is correctly refloated after slipping and maintenance operations |
| 5 Carry out inspection and maintenance procedures on vessel limited by tonnage or near coastal operations | 5.1 | Inspections of vessel hull, equipment and components are carried out according to company maintenance schedules and vessel manufacturer instructions |
| | 5.2 | Deterioration of vessel structure and fittings is identified and appropriate maintenance action is initiated according to work health and safety (WHS)/occupational health and safety (OHS) and pollution control requirements, company procedures and manufacturer instructions |
| | 5.3 | Lubricants, marine preservatives or finishes are applied correctly using appropriate application equipment according to WHS/OHS requirements, company procedures and manufacturer instructions |

	5.4	Problems in application of lubricants, marine preservatives, finishes and other maintenance materials and chemicals are identified and reported, and appropriate remedial action is initiated
	5.5	Records of maintenance and lubrication work carried out are completed according to procedures
6 Administer correct selection and use of maintenance equipment and materials	6.1	Tools and equipment are correctly identified and used according to WHS/OHS requirements
	6.2	Maintenance materials are obtained
	6.3	Defective equipment and materials are identified and reported

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Specifies different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Vessel include one or more of the following:	• vessel up to 500 GT operating in international waters • vessel up to 3000 GT operating in near coastal waters
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Deterioration of vessel structure and fittings include one or more of the following:	• corrosion of hull fittings and equipment • decay of timber surfaces • osmosis and underwater blistering of painted and fibreglass finishes
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Unit Mapping Information

This is a new unit. This unit is equivalent to MARD5002A Manage operations and maintenance on vessels limited by tonnage or near coastal operations.

Links

Companion Volume implementation guides are found in VETNet -

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

Assessment Requirements for MARD002 Manage operations and maintenance on vessels limited by tonnage or near coastal operations

Modification History

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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 operational management of vessel while underway, when berthed or moored, when slipped or in dry dock, during routine or unplanned events
- communicating effectively with other personnel when managing operations and maintenance of vessel limited by tonnage or near coastal operations
- communicating with multilingual crew using established techniques
- complying with relevant maritime regulations
- identifying problems that can occur when managing operations and maintenance of vessel and initiating appropriate action
- interpreting and following all safety management procedures and precautions when managing operations and maintenance of vessel limited by tonnage or near coastal operations
- interpreting and monitoring application procedures for managing operations and maintenance of vessel limited by tonnage or near coastal operations
- monitoring selection and use of publications, materials, tools and other equipment involved in managing operations and maintenance of vessel limited by tonnage or near coastal operations
- preparing appropriate reports on outcomes of inspection and maintenance activities
- providing leadership to other shipboard personnel when managing operations and maintenance of vessel limited by tonnage or near coastal operations
- reading and interpreting:
 - safety data sheets (SDS)/material safety data sheets (MSDS)
 - vessel and machinery specifications, gross and net tonnage, machinery design drawings, machine drawings, operational manuals, specifications, and electrical and control circuit diagrams
- recognising and adapting appropriately to cultural differences in the workplace, including modes of behaviour and interactions among crew and others
- taking appropriate precautions to prevent pollution of marine environment
- taking prompt action to report and/or rectify operational and maintenance problems.

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:

- applicable legislation, regulations and codes of practice
- documents and records, including:
 - relevant maritime regulations
 - company maintenance procedures
 - instructions of relevant maritime authorities related to operations and maintenance of vessels
 - maintenance schedules and records
 - vessel and equipment manufacturer instructions, specifications and recommended procedures
 - stability and cargo documents pertaining to vessel limited by tonnage or near coastal operations
- maintenance records that must be kept on vessel to meet requirements of company and regulatory authorities
- nature and causes of corrosion of marine surfaces and structures, and available methods for its control
- operational management and maintenance:
 - routine maintenance inspections
 - administering repairs of minor faults and imperfections in painted surfaces and managing preparation of marine surfaces prior to application of prescribed marine coating
 - identifying deterioration of vessel structure and fittings
 - identifying faulty equipment or fittings and arranging for repair or replacement
 - managing application of lubricants to moving parts of vessel equipment
 - managing vessel stability both normal and adverse operational conditions
 - managing vessel cargo operation procedures
- principal features of structure of vessel, with a basic understanding of properties and application of materials used in vessel construction
- procedures for:
 - checking and inspecting vessel stability during a range of operational conditions, including loading and discharging of cargo as part of routine procedures to ensure compliance with company requirements and established safety rules and regulations
 - initiating and coordinating repair and/or replacement procedures on board vessels
- publications, tools and equipment required for operational management and maintenance:
 - cargo and stability calculators and publications
 - electric and pneumatic power tools such as grinders, sanders, drills and hand tools, including chipping hammers and scrapers
 - marine preservative finish application equipment such as brushes, spay guns, rollers and greasing and lubrication tools
 - rinsing and storing equipment

- protective clothing and equipment (eye and ear protection, safety boots, dust and fume masks)
- relevant sections of applicable maritime regulations
- relevant work health and safety (WHS)/occupational health and safety (OHS) and pollution control legislation and policies
- safety, environmental and hazard control precautions and procedures relevant to inspection and maintenance operations
- slipping and docking procedures suitable for various types of hull forms, including communication techniques used
- typical problems relating to slipping and maintaining vessels and appropriate action and solutions.

Assessment Conditions

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

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

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.

Resources for assessment must include access to:

- tools, equipment, machinery, materials and personal protective equipment currently used in industry
- applicable documentation such as legislation, regulations, codes of practice, workplace procedures and operational manuals
- range of relevant exercises, case studies and/or simulations.

Links

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