



Australian Government

MARN005 Maintain seaworthiness of a vessel

Release: 1

MARN005 Maintain seaworthiness of a vessel

Modification History

Release 1. New unit of competency.

Application

This unit involves the skills and knowledge required to maintain the seaworthiness of a vessel.

This unit applies to people working in the maritime industry as a Watchkeeper Deck, a Master up to 500 gross tonnage (GT), or a Master up to 80 metres Near Coastal.

This unit has links to legislative and certification requirements.

Pre-requisite Unit

Not applicable.

Competency Field

N – Seamanship

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.

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| 1 Check weather tight and watertight integrity of vessel | 1.1 Structural members of vessel are investigated to establish weather tight and watertight requirements of vessel |
| | 1.2 Inspections of vessel are planned according to regulatory and organisational requirements |
| | 1.3 Checks are completed to confirm weather tight and watertight integrity of vessel at all times |
| | 1.4 Defects and damage to vessel are identified and reported according to organisational procedures |
| 2 Take action to meet environmental changes | 2.1 Anticipated sea and weather conditions are analysed to identify situations that may jeopardise vessel weather tight and watertight integrity |

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| | 2.2 | Effect of severe wind and rolling in associated sea conditions on vessel weather tight and watertight integrity is recognised |
| | 2.3 | Effect of water on deck on vessel weather tight and watertight integrity is ascertained |
| | 2.4 | Appropriate action is taken to maintain vessel weather tight and watertight integrity according to organisational procedures |
| 3 Maintain records | 3.1 | Relevant documents and records are completed and maintained as required according to regulatory and organisational requirements |
| | 3.2 | Relevant documents are sent to appropriate bodies and copies are filed according to regulatory and organisational requirements |
| | 3.3 | Documents are stored according to regulatory and organisational requirements |

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.

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| Structural members of vessel include one or more of the following: | <ul style="list-style-type: none">• bulkheads including the collision bulkhead• frames• freeboard deck• hatch and tank openings |
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	• longitudinal and transverse girders • shell plating • tank tops • various types of keel arrangements • watertight and weather tight compartments
Inspections of vessel includes one or more of the following:	• inspection of hull and fittings during dry-docking • inspections required after completion of maintenance work • inspections required after docking prior to refloating • inspections to be made after any situation which may have caused damage to the vessel • pre sailing inspections • routine inspections
Defects and damage include one or more of the following:	• corrosion to operating or structural parts of the vessel • damage to the vessel through cargo shift • hatch cover seals • structural damage through collision, grounding or fire • watertight door seals and closing arrangements
Situations that may jeopardise vessel weather tight and watertight integrity include one or more of the following:	• collision, grounding or fire • failure to conduct appropriate inspections • heavy weather damage
Appropriate actions include one or more of the following:	• avoiding adverse weather • checking the security of the vessel • closing openings • ensuring appropriate equipment is in readiness for damage control • ensuring free surface is minimised in ballast and fuel tanks • ensuring freeing ports allow water taken on deck to clear • ensuring passenger distribution does not exceed allowed limits • ensuring stores, cargo and equipment are properly stowed and lashed • establishing procedures for restoring or managing weather tight and watertight integrity during an emergency • maintaining the stability condition within approved limits

- testing of tanks and other watertight areas

Relevant documents and records include one or more of the following:

- equipment manufacturer instructions
- logbooks, including oil record and garbage log books as applicable
- organisational operation orders under the International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM) Code
- plans and drawings
- relevant maritime regulations and legislative requirements
- stability data manual

Unit Mapping Information

This is a new unit. This unit is equivalent to MARN5001A Maintain seaworthiness of a vessel.

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 MARN005 Maintain seaworthiness of a vessel

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:

- completing required records
- reading and interpreting vessel specifications and drawings
- taking actions to ensure and maintain the weather tight and watertight integrity of vessel.

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:

- application of appropriate safety, environment and hazard control procedures
- characteristics of stress and the principal stresses acting on a vessel
- corrosion control methods
- damage control measures that may be required to maintain the integrity of the hull
- fundamental actions to be taken in the event of partial loss of intact buoyancy
- fundamentals of watertight integrity
- maintenance procedures contained in the safety management system
- one's surroundings and changes to these surroundings
- principal materials used in the construction of a vessel
- principal structured members and layout of a vessel and the proper names for various parts
- principles and procedures to ensure the watertight integrity of vessel hull
- procedures for checking and inspecting vessel seaworthiness
- stability, trim and stress tables, diagrams and stress calculating equipment
- work health and safety (WHS)/occupational health and safety (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 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.

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