



Australian Government

MARJ5002A Inspect and report defects and damage to vessel

Release 1

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Modification History

Release 1

This is the first release of this unit.

Unit Descriptor

This unit involves the skills and knowledge required to inspect and report defects and damage to vessels.

Application of the Unit

This unit has application for a Watchkeeper Deck and Master < 500 GT.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.

Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

- | | |
|---------------------------|--|
| 1 Plan inspections | 1.1 <i>Elements of the vessel structure</i> critical to the safety of the vessel are identified |
| | 1.2 Location of <i>defects and damage</i> caused by <i>vessel operations and the</i> |

environment are ascertained

- 1.3 **Parts of the vessel** to be inspected for defects and damage are identified
 - 1.4 Inspections are scheduled to ensure all parts are covered within a given time
 - 1.5 Damage control plan is developed to ensure the seaworthiness of the vessel
- 2 Check condition of vessel in normal and emergency situations**
- 2.1 Organisational procedures for **coverage** and frequency of tests and inspections on the vessel are complied with
 - 2.2 Watertight integrity is checked and appropriate action is taken to prepare for prevailing and forecast weather and sea conditions
 - 2.3 Degree to which vessel is secured is appropriate to prevailing and forecast conditions
 - 2.4 Defects and damage are reliably detected and appropriate action is taken to rectify the situation
 - 2.5 Irregularities beyond own ability to rectify are recognised in time to enable remedial action to be taken
- 3 Prepare reports**
- 3.1 **Reports** are completed and maintained as required according to regulatory and organisational requirements
 - 3.2 Relevant reports 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

Required Skills and Knowledge

This section describes the skills and knowledge required for this unit.

Required Skills:

- Adhere to procedures to distinguish between normal and defective or damaged parts of vessel
- Develop damage control plans
- Identify those elements of the vessel structure that are critical to vessel safety
- Inspect and report defects and damage to cargo spaces, hatch covers and ballast tanks
- Interpret and follow procedures for the coordination of planned maintenance processes
- Prepare appropriate reports on inspection and maintenance outcomes

Required Knowledge:

- Causes of corrosion to cargo spaces and ballast tanks, and how corrosion can be identified and prevented
- Construction, layout and subdivision of a vessel, including freeboard and bulkhead deck, watertight compartments, weather tight compartments, the bulkhead of the vessel and collision bulkhead
- Corrosion control measures
- Damage control measures that may be required to maintain the integrity of a hull in a range of typical emergency situations
- How to ensure reliable detection of defects and damages
- Parts of the vessel to be inspected each time in order to cover all parts within a given period
- Planned maintenance systems for vessel and associated maintenance inspection procedures
- Principal features of vessel structure
- Principal stresses that act on vessel structure
- Principles and procedures to ensure watertight integrity of vessel hull in both normal and emergency situations
- Procedures for checking and inspecting vessel seaworthiness
- Properties and application of materials used to construct vessels
- Purpose of the enhanced survey program
- Typical vessel construction features and stress characteristics
- Where to look for damage and defects most commonly encountered due to loading and unloading operations, corrosion, severe weather conditions
- Work health and safety (WHS)/occupational health and safety (OHS) requirements and work practices

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, the required skills and knowledge, the range statement and the Assessment Guidelines for the Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

The evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the Elements, Performance Criteria, Required Skills, Required Knowledge and include:

- developing effective planning documents
- being aware of own ability and limits to rectify irregularities and faults.

Context of and specific resources for assessment

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

Resources for assessment include access to:

- industry-approved marine operations site where inspecting and reporting defects and damage to a vessel may be conducted
- tools, equipment and personal protective equipment currently used in industry
- relevant regulatory and equipment documentation that impacts on work activities
- range of relevant exercises, case studies and/or other simulated practical and knowledge assessments
- appropriate range of relevant operational situations in the workplace.

In both real and simulated environments, access is required to:

- relevant and appropriate materials and equipment
- applicable documentation including workplace procedures, regulations, codes of practice and operation manuals.

Method of assessment

Practical assessment must occur in an:

- appropriately simulated workplace environment and/or
- appropriate range of situations in the workplace.

A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate to this unit:

- direct observation of the candidate inspecting and reporting defects and damage to a vessel
- direct observation of the candidate applying relevant WHS/OHS requirements and work practices.

Guidance information for

Holistic assessment with other units relevant to the industry

assessment

sector, workplace and job role is recommended.

In all cases where practical assessment is used it should be combined with targeted questioning to assess Required Knowledge.

Assessment processes and techniques must be appropriate to the language and literacy requirements of the work being performed and the capacity of the candidate.

Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below.

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|--|--|
| Elements of the vessel structure may include: | <ul style="list-style-type: none">• Ballast tanks• Bulkheads• Cargo holds• Cargo tanks• Frames• Fresh water tanks |
| Defects and damage may include: | <ul style="list-style-type: none">• Cargo operation damage• Damage to structures through heavy weather• Damage caused by corrosion• Defects to ballast water tank vents |
| Vessel operations and the environment may include: | <ul style="list-style-type: none">• Loading and unloading operations• Severe weather conditions |
| Parts of the vessel may include: | <ul style="list-style-type: none">• Cargo holds• Deck structures• Hatch covers• Machinery spaces• Ventilators and fire closing devices |
| Coverage may include: | <ul style="list-style-type: none">• Areas requiring inspection under the planned maintenance schedule and survey requirements |
| Reports may include: | <ul style="list-style-type: none">• Defects and damage reports to management• Inspection records• Maintenance reports• Survey reports |

Unit Sector(s)

Not applicable.

Competency Field

Environment