



Australian Government

MARN3002A Use seamanship skills on board a vessel

Release 1

MARN3002A Use seamanship skills on board a vessel

Modification History

Release 1

This is the first release of this unit.

Unit Descriptor

This unit involves the skills and knowledge required to apply practical seamanship skills as part of operations on board a vessel.

Application of the Unit

This unit applies to an Integrated Rating to assist the responsible officer in a range of seamanship activities as required on a range of vessels.

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 Use and maintain ropes and wires | <ul style="list-style-type: none">1.1 <i>Knots, splices, stoppers, whippings and servings</i> are created and used in the course of operations on board a vessel1.2 Ropes are spliced neatly and securely according to their correct application and rope ends are whipped where appropriate to maintain good condition1.3 Breaking strain and safe working loads of rope and wire is determined and applied as load limits in the course of operations on board a vessel1.4 Wear and damage to rope and wire is recognised1.5 Rope and wire is maintained and stored according to organisational procedures |
| 2 Secure vessel at anchor | <ul style="list-style-type: none">2.1 <i>Anchor and equipment</i> is prepared for use according to instructions2.2 Control of the cable is maintained within safe operating limits during anchoring operations2.3 Anchor and equipment are secured on completion of anchoring operations as instructed for the anticipated forecast conditions2.4 Anchoring area is kept free of loose ropes, wires and debris during all operations |
| 3 Secure vessel at a berth | <ul style="list-style-type: none">3.1 <i>Mooring lines and associated equipment</i> are handled safely at all times3.2 Mooring area is kept free of loose ropes, wires and debris throughout operations3.3 Rope stoppers are correctly applied to transfer mooring lines when securing the vessel or tug3.4 Securing a tug using tug or ships lines is carried out safely and tug lines are monitored at all times3.5 Tension on ropes is maintained at an appropriate level for the stage and nature of the operation3.6 Tension on shore-power leads and other umbilicals is monitored |
| 4 Lash and secure stores, cargo and access ways | <ul style="list-style-type: none">4.1 <i>Lashing equipment</i> is inspected, maintained and correctly stored after use according to organisational procedures4.2 Cargo is stowed according to recognised principles and organisational |

- procedures relating to the transport and handling of dangerous goods
- 4.3 Cargo is lashed and secured according to recognised principles and organisational procedures
 - 4.4 Equipment and items on deck and in galley spaces are secured according to organisational procedures
 - 4.5 Personnel access ways are rigged and secured according to organisational procedures
 - 4.6 Accommodation spaces and personnel facilities on board vessel are checked and correctly secured for sea according to organisational procedures
- 5 Rig and unrig safely**
- 5.1 Bosun's chairs and staging are rigged and unrigged, and safety for use is ensured
 - 5.2 Pilot ladders and hoists are rigged and safety for use is ensured
 - 5.3 Gangways and other access ways are rigged
 - 5.4 **Deck equipment** is rigged and unrigged
- 6 Conduct fuelling and oil transfer operations**
- 6.1 All personal protective equipment is accessed and used
 - 6.2 Safety boundary for the fuelling and transferring operations is established
 - 6.3 Spill prevention systems are correctly deployed
 - 6.4 Tank levels are correctly measured and reported pre and post fuelling and transferring operations
 - 6.5 Fuelling and transferring operations are performed safely, and associated valves and pipelines are secured on completion to avoid spillages
 - 6.6 Appropriate action is taken to handle incidents arising during fuelling and transferring operations according to organisational procedures and regulatory requirements
 - 6.7 Effective communication is maintained with crew during fuelling and transferring operations to ensure the safety and integrity of the vessel and crew

Required Skills and Knowledge

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

Required Skills:

- Correctly coil and stow ropes
- Correctly measure and report tank levels
- Operate anchoring equipment under various conditions such as anchoring, weighing anchor, securing for sea and in emergencies
- Perform:
 - eye splice and a short splice
 - appropriate whippings on ropes and line
- Prepare and throw a heaving line
- Rig and unrig bosun's chairs, staging and pilot ladders
- Safely handle ropes and wires
- Secure a vessel at its berth according to operational requirements
- Secure from fuelling and transferring operations
- Tie a:
 - figure-eight knot, reef knot, bowline and cod-end knot
 - half hitch, clove hitch, round turn and two half hitches, rolling hitch and timber hitch
- Use knots and hitches and securing arrangements

Required Knowledge:

- Anchoring principles and methods for different conditions
- Capacities, safe working loads and breaking strengths of mooring equipment
- Correct application of common knots and hitches
- Dangers of working with ropes under tension
- Different types of anchors and where they can be most effectively used
- Function of mooring and tug lines and how each line functions as part of an overall system
- Maintenance of different types of rope, wire and chain
- Methods of securing cargo including vehicles, stores and equipment on a vessel before it puts to sea
- Preparations for fuelling and transfer operations
- Principles of safe handling and transport of dangerous cargo
- Procedures and events for the use of anchors in various operations
- Procedures and order of events for making fast and letting go mooring, tug lines and wires
- Procedures for connecting and disconnecting fuelling and transfer hoses

- Procedures relating to incidents that may arise during fuelling and transferring operations
- Procedures relating to the rigging and unrigging of:
 - bosun's chairs and staging
 - pilot ladders, hoists, rat-guards and gangways
- Routine and emergency operation of anchors
- Use of sea anchors
- 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:

- lashing and securing moveable equipment, especially on deck, in holds and freezers
- anchoring a vessel in varying weather conditions
- rigging a sea anchor to control a specified rate and direction of drift and/or angle to sea
- ensuring currency of relevant legislative and regulatory knowledge.

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 applying seamanship skills aboard a vessel can 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 performing seamanship skills

Guidance information for assessment

- direct observation of the candidate applying relevant WHS/OHS requirements and work practices.

Holistic assessment with other units relevant to the industry 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.

Knots, splices, stoppers, whippings and servings must include:

- Bowline
- Clove hitch
- Cod-end knot
- Figure-eight knot
- Half hitch
- Reef knot
- Rolling hitch
- Round turn and two half hitches
- Sheet bend
- Timber hitch

Anchor and equipment may include:

- Anchors and cables
- Anchor buoy
- Anchor securing arrangements
- Anchor windlass
- Sea anchor

Mooring lines and associated equipment must include:

- Bitts
- Bollards
- Capstan
- Chocks
- Mooring wires
- Synthetic and fibre lines
- Tug lines and wires
- Winches
- Windlass

Lashing equipment may include:

- Chains
- Ropes
- Tensioning device
- Webbing
- Wires

Deck equipment must include:

- Bow and stern cargo doors
- Gangways
- Hatch covers
- Hoists
- Pilot ladders
- Rat-guards
- Side doors

Incidents may include:

- Failure of communications systems
- Leakage from faulty valves and hoses
- Tank overflow

Unit Sector(s)

Not applicable.

Competency Field

Seamanship