



**Australian Government**

# **MARC031 Shift mooring lines using mechanical means**

**Release: 1**

# MARC031 Shift mooring lines using mechanical means

## Modification History

Release 1. New unit of competency.

## Application

This unit involves the skills and knowledge required to shift mooring lines using mechanical means, including correctly using capstan and quick release systems.

This unit applies to people working in the maritime industry as a Linesperson.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

## Pre-requisite Unit

Not applicable.

## Competency Field

C – Equipment operations

## Unit Sector

Not applicable.

## Elements and Performance Criteria

### ELEMENTS

Elements describe the essential outcomes.

#### **1 Identify mechanical mooring techniques and their application**

### PERFORMANCE CRITERIA

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

- |     |                                                                                                                |
|-----|----------------------------------------------------------------------------------------------------------------|
| 1.1 | Appropriate mechanical mooring and unmooring techniques and equipment are identified                           |
| 1.2 | Features of mechanical mooring and unmooring equipment are established and their impact on safety is explained |
| 1.3 | Relevant documentation and records are identified and accessed as required                                     |
| 1.4 | Types of berth and terminals where mechanical mooring                                                          |

|                                                             |     |                                                                                                                                                                                  |
|-------------------------------------------------------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                             |     | and unmooring are applied are explained and documented                                                                                                                           |
| <b>2 Prepare equipment</b>                                  | 2.1 | Appropriate personal protective equipment (PPE) is selected and assembled according to work health and safety (WHS)/occupational health and safety (OHS) requirements            |
|                                                             | 2.2 | Equipment is located, selected and made ready according to organisational procedures                                                                                             |
|                                                             | 2.3 | Routine pre-operational checks are carried out on tools and equipment according to manufacturer specifications and organisational requirements                                   |
|                                                             | 2.4 | Adjustments are made to achieve safe and efficient operation                                                                                                                     |
|                                                             | 2.5 | Inability to start equipment is reported promptly and accurately to appropriate personnel                                                                                        |
| <b>3 Respond to hazardous situation</b>                     | 3.1 | Hazards associated with mechanical mooring and unmooring are identified                                                                                                          |
|                                                             | 3.2 | Risk is assessed and hazard control measures are applied to level of responsibility, or referred to appropriate person for further action according to organisational procedures |
|                                                             | 3.3 | Inability to start equipment is reported promptly and accurately to appropriate personnel                                                                                        |
| <b>4 Operate mechanical mooring and unmooring equipment</b> | 4.1 | Appropriate safety procedures are followed and PPE is used to undertake mooring and unmooring operations according to organisational procedures                                  |
|                                                             | 4.2 | Tools and equipment are operated in a safe and controlled manner within defined operating limits to achieve optimum safety and efficiency                                        |
|                                                             | 4.3 | Malfunctions are promptly identified and appropriate action is taken in a malfunction or emergency                                                                               |
|                                                             | 4.4 | Action is taken to rectify basic operational faults to maintain optimum safety and efficiency                                                                                    |
|                                                             | 4.5 | Irregularities or malfunctions are reported to appropriate personnel                                                                                                             |
| <b>5 Complete mechanical mooring and shut down</b>          | 5.1 | Equipment is shut down according to manufacturer specifications and organisational procedures                                                                                    |
|                                                             | 5.2 | Defective, damaged or malfunctioning equipment is                                                                                                                                |

**equipment**

recorded and reported according to organisational procedures

- 5.3 All required documentation is completed according to organisational procedures

## Foundation Skills

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

## Range of Conditions

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

Non-essential conditions can be found in the Companion Volume Implementation Guide.

- Safety procedures include:
- checking:
    - own personal fitness and medical wellbeing
    - whereabouts of edge of wharf
    - whereabouts of other members of mooring and unmooring team
  - confirming availability of a personal flotation device on arrival at mooring and unmooring operation
  - keeping clear of snapback zone and demarcated areas
  - keeping work area hazard-free
  - obtaining and using required PPE (such as safety footwear, safety helmet, suitable gloves, safety vest and reflective clothing, personal life jacket vest, safety glasses)
  - removing rings from fingers to avoid them being caught on steel wire ropes
- Berth and terminals may include one or more of the following:
- liquefied natural gas (LNG) carrier berths
  - oil berths
  - liquid petroleum gas (LPG) berths
  - bulk liquids berths
  - coal/iron ore berths
  - RoRo terminals
  - container terminals
- Relevant documentation and records include one or more of the following:
- mooring and unmooring plans, procedures, checklists and instructions
  - relevant maritime authority instructions

Mooring and unmooring operations include:

- relevant sections of maritime regulations concerning mooring and unmooring operations
- reports and records of mooring and unmooring operations or any safety incident
- rope and equipment manufacturer instructions and procedures
- safety instructions and procedure
- landing a gangway
- placing or removing brow onto gangway
- positioning lines launch
- positioning mooring lines
- preparing a berth
- receiving mooring lines under a vessel
- receiving heaving line from:
  - a launch
  - a vessel
- returning heaving line to a vessel
- unmooring and letting go a vessel
- working:
  - by day or night
  - in normal and emergency situations
  - under any permissible conditions of weather
  - at various shore-side terminals and wharves
  - buoys

## Unit Mapping Information

No equivalent unit.

## 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 MARC031 Shift mooring lines using mechanical means

## Modification History

Release 1. New unit of competency.

## Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least one occasion and include:

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements and work practices
- communicating effectively with other personnel when mooring and unmooring a vessel
- complying with relevant maritime regulations and International Maritime Organization (IMO) Conventions and Codes, including the relevant sections of the Australian Maritime Safety Authority (AMSA) Marine Orders as they apply to mooring and unmooring operations on ocean-going vessels
- ensuring behaviour reflects relevant current legislative and regulatory requirements
- following work instructions
- following all orders carefully and systematically
- implementing port and vessel security procedures
- initiating timely action in response to defects or damage
- interpreting and follow procedures for mooring and unmooring operations, including safety instructions and precautions
- operating mechanical mooring equipment appropriately and correctly
- receiving mooring lines correctly
- recognising dangers, hazards and problems before and during mooring and unmooring operations, and taking appropriate action to report and/or rectify them
- taking proper care of ropes and mechanical mooring equipment
- using capstans and quick release systems correctly
- working effectively as a member of a mooring and /or unmooring team.

## Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- communications techniques and equipment required during mooring and unmooring operations
- continuous measurement of mooring loads
- correct order of mooring lines
- correct process/technique for receiving mooring lines
- dangers associated with mooring systems:
  - being hit by a heaving line
  - being thrown down from a vessel
  - stepping inside the bight of a line
  - being struck by a parting line
  - mixing rings and wire rope
  - falling off the edge of the wharf into the water
  - back strain from carrying a line, heaving on a line
  - 'snap back' when a line breaks
  - trip hazards such as crane lines
- factors that affect mooring and unmooring operations, including the effects of wind, weather, tides, sea conditions, currents, draft changes and surges from passing vessels on mooring and unmooring operations
- hazards and problems, and appropriate preventative and remedial action and solutions
- maritime regulations applicable to mooring and unmooring vessels
- mooring load monitoring systems
- operation, features and application of integrated capstans
- operation, features and application of quick release systems
- operational characteristics of different types of lines and equipment
- operational procedures and layouts of various types of shore-side loading and discharging terminals and wharves
- personal protective equipment (PPE) required for use during mooring and unmooring operations
- procedures for assessing stresses on lines and gear used in mooring and unmooring operations
- reason for and correct method of, dipping mooring line
- relevant manufacturer guidelines relating to use of machinery, including instructions on equipment capability and limitations
- relevant sections of Standards of Training, Certification & Watchkeeping (STCW) 95 and AMSA Marine Orders
- remote control systems for remote hook release
- safety drills and equipment used for lines launch
- snapback zone and demarcated areas
- standard nautical terms in relation to mooring activities and related equipment
- technique for releasing fowled mooring lines under wharfs and around ship anchors
- various types of hook assembly and their application
- WHS/OHS codes of practice, policies and procedures.

## Assessment Conditions

As a minimum, assessors must satisfy applicable regulatory requirements, which include requirements in the *Standards for Registered Training Organisations* current at the time of assessment.

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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.

Assessment must occur in workplace operational situations where mechanical mooring and unmooring can be undertaken. Where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

Resources for assessment must include access to:

- applicable documentation such as legislation, regulations, codes of practice, workplace procedures and operational manuals
- tools, equipment, machinery, materials and personal protective equipment currently used in industry including:
  - counterbalanced hooks
  - docking aid system
  - integrated capstans
  - mooring instrumentation
  - quick release hooks
  - quick release systems
  - single and multiple hook assemblies.

## Links

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