



**Australian Government**

**Department of Education, Employment and Workplace Relations**

**TDMMR5507B PERFORM  
SEAMANSHIP, RIGGING AND LIFTING  
OPERATIONS ON BOARD A SMALL  
DOMESTIC VESSEL**

**Release: 1**

## **TDMMR5507B PERFORM SEAMANSHIP, RIGGING AND LIFTING OPERATIONS ON BOARD A SMALL DOMESTIC VESSEL**

### **Modification History**

Not applicable.

### **Unit Descriptor**

UNIT DESCRIPTOR:

**This unit involves the seamanship skills, knowledge and techniques required when performing routine operations and using lifting and rigging equipment on a domestic commercial vessel in accordance with safe working practices.**

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### **Application of the Unit**

<b>Application of the unit</b>	The unit has application in qualifications for a Master 5 and Master 4, i.e. Certificate III in Transport&Distribution (Coastal Maritime Operations - Master Class 5) and Certificate IV in Transport&Distribution (Coastal Maritime Operations - Master Class 4).
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### **Licensing/Regulatory Information**

<b>Licensing/legislative requirements</b>	The unit is consistent with the relevant sections of State and Territory regulations dealing with basic seamanship, rigging and lifting operations on a coastal vessel.
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### **Pre-Requisites**

Not applicable.

### **Employability Skills Information**

Not applicable.

## Elements and Performance Criteria Pre-Content

<i>Elements describe the essential outcomes of a unit of competency.</i>	<i>Performance Criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the Evidence Guide.</i>
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## Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
<p>.</p> <p><b>1 Use and maintain ropes and wire</b></p>	<p>.</p> <p>a Knots, hitches and bends using fibre and synthetic ropes are correctly made and used in the course of deck operations on board a vessel</p> <p>b Eye splices and short splices are made in fibre and synthetic ropes in accordance with established nautical practice</p> <p>c Rope, wire and cables are used and maintained in accordance with company procedures and manufacturer's instructions</p> <p>d Breaking strain and safe working loads of ropes are determined and applied as load limits in the course of deck operations</p> <p>e Lines are made up in preparation for berthing of vessel</p> <p>f Lines are handled as directed to assist in berthing and unberthing a vessel</p> <p>g A warping drum is used to heave in surge and veer lines</p> <p>h Berthing lines are turned up and secured to bitts, staghorns and cleats as required</p> <p>i Moorings and hawsers are safely handled as per established nautical practice</p>

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<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
<p><b>2 Operate lifting gear</b></p>	<ul style="list-style-type: none"> <li>a Lifting gear is checked and prepared for operation prior to use</li> <li>b Defective lifting gear is identified and isolated, reported and maintained in accordance with shipboard practices and recognised standards</li> <li>c Loads are correctly rigged using appropriate ropes and rigging gear in accordance with procedures and safety requirements</li> <li>d Maximum and safe working load limits are determined and are not exceeded when lifting equipment and loads using ropes, chains and rigging in accordance with shipboard procedures</li> <li>e Lifting gear is safely operated to carry out deck operations in accordance with requirements and manufacturer's instructions</li> <li>f Portable ladders are correctly used and maintained</li> <li>g Equipment used when working aloft is correctly maintained and stored</li> </ul>
<p><b>3 Perform tasks aloft and over vessel's side</b></p>	<ul style="list-style-type: none"> <li>a Site and equipment for working aloft are prepared in accordance with shipboard practices and recognised standards</li> <li>b Required precautions are taken when working aloft or over the side</li> <li>c Chairs, stages, safety harnesses and appropriate safety equipment are used in accordance with shipboard practices and recognised standards</li> </ul>

ELEMENT	PERFORMANCE CRITERIA
<b>4 Lash and secure stores, cargo and access ways to a small vessel</b>	<ul style="list-style-type: none"> <li>a Lashing equipment is inspected and maintained in accordance with shipboard practices and recognised standards</li> <li>b Faulty lashing equipment is identified and isolated, reported and maintained in accordance with shipboard practices and recognised standards</li> <li>c Cargo is lashed and secured in accordance with shipboard practices and recognised standards</li> <li>d Appropriate consideration is given to the effects of vessel's motion on stowed cargo when lashing cargo</li> <li>e Lashing equipment used is correctly stored after use</li> <li>f Personnel access ways are rigged and secured in accordance with shipboard practices and recognised standards</li> </ul>

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ELEMENT	PERFORMANCE CRITERIA
<b>5 Secure a small vessel for sea</b>	<ul style="list-style-type: none"> <li>a Anchors, cables and deck fittings are correctly identified and selected for use when required</li> <li>b Accommodation spaces and personnel facilities on board the vessel are checked for cleanliness, hygiene and tidiness and correctly secured for sea in accordance with established procedures and tourism or operational standards</li> <li>c Equipment and items on deck and in equipment and galley spaces are secured in accordance with regulatory requirements</li> <li>d Watertight integrity of vessel is checked and appropriate action is taken to prepare for prevailing and forecast weather and sea conditions</li> <li>e Anchor tasks are carried out in accordance with established nautical practice</li> </ul>

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
	f Vessel is prepared and anchored in varying weather conditions g Anchor is weighed and vessel proceed in those same conditions

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## **Required Skills and Knowledge**

### **REQUIRED KNOWLEDGE**

*This describes the knowledge required for this unit*

- 1 Relevant sections of maritime regulations
- 2 Relevant OH&S legislation and policies
- 3 Types of knots, bends and hitches in common use, their characteristics, applications and limitations, and methods of tying them using synthetic and fibre rope of varying construction and size
- 4 Procedures for splicing synthetic and fibre ropes
- 5 Breaking strain and safe working load for ropes and equipment
- 6 Principles of rope deterioration and care and maintenance requirements for different types of rope and wire
- 7 Principles and limitations of lifting equipment and components
- 8 Procedures for checking and operating lifting equipment, including slinging of loads and various lifting fittings and arrangements
- 9 Precautions and procedures for working aloft and over the side on a coastal vessel
- 10 Maintenance and storage procedures for equipment used when working aloft or over the side
- 11 Procedures for rigging and preparing personnel access ways
- 12 Principles and procedures for the lashing and securing of cargo, including the inspection and maintenance requirements for lashing equipment
- 13 Maritime communication techniques
- 14 Names of lines used from various parts of a vessel and the various ways a vessel is made fast to a wharf

## **REQUIRED KNOWLEDGE**

- 15 Procedures for berthing and unberthing a small vessel
- 16 Methods of securing a vessel before it puts to sea
- 17 Procedures for stowing galley appliances, food utensils, containers and supplies for sea
- 18 Procedures for checking and securing personnel accommodation and facilities prior to putting to sea

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## **REQUIRED SKILLS**

*This describes the basic skills required for this unit.*

- 1 Use basic verbal communication skills required when performing basic rigging and lifting operations on a small domestic vessel
- 2 Read, interpret and apply basic instructions relevant to rigging and lifting operations on a small domestic vessel
- 3 Work safely and collaboratively with others during rigging and lifting operations on a small domestic vessel
- 4 Select and use rigging and lifting ropes and equipment as per operating instructions
- 5 Recognise routine problems during rigging and lifting operations on a small domestic vessel and take appropriate action
- 6 Adapt to changes in equipment and procedures in the workplace
- 7 Follow required work schedule as per company requirements
- 8 Tie required knots and demonstrate rope handling skills
- 9 Perform eye and short splices in three stranded rope
- 10 Sling small loads ready for lifting
- 11 Lash and secure cargo and gangways
- 12 Secure a small vessel for sea



## Evidence Guide

### Evidence Guide

**TDMMR5507B PERFORM SEAMANSHIP, RIGGING AND LIFTING OPERATIONS ON BOARD A SMALL DOMESTIC VESSEL**

*The Evidence Guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.*

<p><b>1 Critical aspects of evidence required to demonstrate competency in this unit</b></p>	<p>Assessment must confirm appropriate knowledge and skills to:</p> <ul style="list-style-type: none"> <li>a Use and maintain ropes and wire</li> <li>b Operate lifting gear</li> <li>c Rig and maintain personnel access ways</li> <li>d Perform tasks aloft and over vessel's side</li> <li>e Lash and secure moveable items</li> <li>f Rig and lash machinery components</li> <li>g Secure a vessel for sea</li> <li>h Exercise all required safety procedures when carrying out rigging operations</li> <li>i Communicate effectively with others during rigging operations</li> </ul>
<p><b>2 Evidence required for demonstration of consistent performance</b></p>	<ul style="list-style-type: none"> <li>a Performance is demonstrated consistently over a period of time and in a suitable range of contexts</li> <li>b Consistently applies underpinning seamanship knowledge and skills when:                             <ul style="list-style-type: none"> <li>1 using and maintaining ropes and wire</li> <li>2 operating lifting gear</li> </ul> </li> </ul>

- 3 rigging and using fishing gear
- 4 performing tasks aloft and over vessel's side
- 5 lashing and securing cargo and moveable items
- 6 applying safety precautions during rigging operations
- c Shows evidence of application of relevant workplace procedures, including:
  - 1 relevant sections of marine regulation
  - 2 safety management system procedures
  - 3 OH&S regulations and hazard prevention policies and procedures
  - 4 job procedures and work instructions
  - 5 relevant manufacturer's guidelines relating to the use of ropes, wires, cables, anchors, deck equipment and machinery, including instructions on equipment capability and limitations
  - 6 on-board housekeeping processes

**Evidence Guide (continued)**

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| <p><b>2 Evidence required for demonstration of consistent performance (continued)</b></p> | <ul style="list-style-type: none"> <li>d Action is taken promptly to report and/or rectify accidents, safety incidents and operational problems in accordance with regulations and procedures</li> <li>e Work is completed systematically with required attention to detail</li> <li>f Recognises and adapts appropriately to cultural differences in the workplace, including modes of behaviour and interactions between crew and others</li> </ul> |
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<p><b>3 Context of assessment</b></p>	<p>a Assessment of competency must comply with the assessment requirements of the relevant maritime regulations</p> <p>b Assessment of this unit must be undertaken within relevant marine authority approved and audited arrangements by a registered training organisation:</p> <p>1 As a minimum, assessment of knowledge must be conducted through appropriate written/oral examinations, and</p> <p>2 Appropriate practical assessment must occur:</p> <p>i at the registered training organisation; and/or</p> <p>ii on an appropriate working or training vessel</p>
<p><b>4 Specific resources required for assessment</b></p>	<p>Access is required to opportunities to:</p> <p>a participate in a suitable range of appropriately simulated seamanship, rigging, lifting and cargo lashing exercises, situations and case studies and associated resources; and/or</p> <p>b assist with seamanship, rigging, lifting and cargo lashing operations on a working vessel</p>

## Range Statement

### Range Statement

**TDMMR5507B PERFORM SEAMANSHIP, RIGGING AND LIFTING OPERATIONS ON BOARD A SMALL DOMESTIC VESSEL**

*The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.*

#### VARIABLE

#### SCOPE

#### 1. GENERAL CONTEXT

*The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.*

<b>a. Work must be carried out:</b>	1 in compliance with the relevant regulations and Australian standards
<b>b. Work is performed:</b>	1 within defined operational procedures, with responsibility for own outputs in relation to specified quality standards
<b>c. Work involves:</b>	1 performing routine rigging operations and using associated equipment in accordance with safe working practices

## 2. WORKSITE ENVIRONMENT

<b>a Vessel may include:</b>	1 any Australian domestic commercial vessel
<b>b Rigging operations may include:</b>	1 using and maintaining ropes, wires and chains 2 splicing natural fibre and synthetic ropes 3 checking and using lifting equipment, ropes, chains and rigging gear when lifting loads 4 lashing cargo 5 securing gangways, brows and ladders for safe access
<b>c Rigging operations may be carried out:</b>	1 by day or night in normal operational situations 2 under normal and adverse conditions of sea and weather 3 while underway 4 during berthing and unberthing operations 5 while anchoring or mooring 6 when berthed

*The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.*

7 adverse weather conditions

**Range Statement (continued)**

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<b>VARIABLE</b>	<b>SCOPE</b>
<b>d Knots and splices may include:</b>	1 figure of eight
	2 reef knot
	3 clove hitch
	4 rolling hitch
	5 sheet bend
	6 sheep shank
	7 bowline
	8 eye splice
	9 short splice
	10 common whipping
	11 sail maker's whipping
	12 common seizing
	13 racking seizing
<b>e Personnel access equipment may include:</b>	1 gangways
	2 brows
	3 Ladders

VARIABLE	SCOPE
<b>f Lifting gear may include:</b>	1 cranes 2 derricks 3 winches 4 hoists 5 grabs 6 spreaders 7 trawl booms 8 pot/trap winches
<b>h Equipment for working aloft and over the side may include:</b>	1 gantlines 2 bosun's chair 3 safety harnesses 4 stage

**Range Statement (continued)**

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VARIABLE	SCOPE
<b>i Cargo to be lashed may include:</b>	1 general cargo such as drums, boxes, cylinders, crates, etc. 2 containers 3 vehicles 4 timber 5 fishing gear

VARIABLE	SCOPE
<b>g Lifting gear components may include:</b>	<ol style="list-style-type: none"> <li>1 shackles and hooks</li> <li>2 slings</li> <li>3 blocks and tackles</li> <li>4 hoists</li> <li>5 eyebolts</li> <li>6 beam clamps</li> <li>7 trolleys</li> <li>8 pot/trap lines</li> <li>9 long lines</li> <li>10 set lines</li> <li>11 trawl wires</li> <li>12 chains</li> </ol>
<b>j Sources of information and documentation may include:</b>	<ol style="list-style-type: none"> <li>1 safety management system procedures</li> <li>2 shipboard rigging procedures</li> <li>3 OH&amp;S regulations</li> <li>4 manufacturer's instructions and recommended procedures</li> <li>5 relevant Australian and international standards and regulations</li> <li>6 cargo securing manual</li> </ol>
<b>k Applicable regulations and legislation may include:</b>	<ol style="list-style-type: none"> <li>1 safety management system</li> <li>2 relevant international, Commonwealth, State and Territory OH&amp;S legislation</li> </ol>

## Unit Sector(s)

Not applicable.

## Field

Field R Carry Out Operations on Equipment and Systems

## Relationship to other units

<b>Relationship to other units</b>	The unit may be assessed in conjunction with other units that relate to the functions of the occupation(s) concerned.
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