



Australian Government

Department of Education, Employment and Workplace Relations

TDMMR3307B PERFORM RIGGING AND LIFTING OPERATIONS ON BOARD A VESSEL

Revision Number: 1

TDMMR3307B PERFORM RIGGING AND LIFTING OPERATIONS ON BOARD A VESSEL

Modification History

Not applicable.

Unit Descriptor

UNIT DESCRIPTOR:

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

Application of the Unit

Application of the unit	The unit has application in the qualification for an Integrated Rating, i.e. Certificate III in Transport&Distribution(Maritime Operations - Integrated Rating).
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Licensing/Regulatory Information

Licensing/legislative requirements	The unit is consistent with the relevant sections of STCW 95 and Marine Orders under the Australian Navigation Act 1912, describing the specific requirements for Integrated Ratings.
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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
1 Use and maintain ropes and wire	<ul style="list-style-type: none"> a Knots, hitches and bends using fibre and synthetic ropes are correctly made and used in the course of deck operations on board a commercial vessel b Eye splices and short splices are made in fibre and synthetic ropes in accordance with established nautical practice c Rope, wire and cables are used and maintained in accordance with company procedures and manufacturer's instructions
2 Operate lifting gear	<ul style="list-style-type: none"> a Lifting gear is checked and prepared for operation prior to use b Defective lifting gear is identified and isolated, reported and maintained in accordance with shipboard practices and recognised standards c Loads are correctly rigged using appropriate ropes and rigging gear in accordance with procedures and safety requirements d Maximum load limits as determined by the responsible officer are not exceeded when lifting equipment and loads using ropes, chains and rigging in accordance with shipboard procedures e Lifting gear is safely operated to carry out deck operations in accordance with requirements and manufacturer's

ELEMENT	PERFORMANCE CRITERIA
	instructions
ELEMENT	PERFORMANCE CRITERIA
3 Rig and maintain personnel and pilot access ways	<ul style="list-style-type: none"> a Personnel access equipment is correctly rigged in accordance with shipboard practices and recognised standards b The requirements and recommendations for safe access by alternative means such as helicopter or cargo ramps are identified and organised in accordance with shipboard practices and recognised standards
4 Perform tasks aloft and over vessel's side	<ul style="list-style-type: none"> a Site and equipment for working aloft are prepared in accordance with shipboard practices and recognised standards b Required precautions are taken when working aloft or over the side c Chairs, stages, safety harnesses and appropriate safety equipment are used in accordance with shipboard practices and recognised standards d Portable ladders are correctly used and maintained e Equipment used when working aloft is correctly maintained and stored
5 Lash and secure cargo	<ul style="list-style-type: none"> a Lashing equipment is inspected and maintained in accordance with shipboard practices and recognised standards b Faulty lashing equipment is identified and isolated, reported and maintained in accordance with shipboard practices and recognised standards c Cargo is lashed and secured in accordance with shipboard practices and recognised standards

ELEMENT	PERFORMANCE CRITERIA
	d Appropriate consideration is given to the effects of vessel's motion on stowed cargo when lashing cargo e Lashing equipment used is correctly stored after use

Required Skills and Knowledge

REQUIRED KNOWLEDGE

This describes the knowledge required for this unit.

- 1 Applicable sections of relevant 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 natural fibre and synthetic 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
- 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 Legal requirements for the construction of a pilot ladder
- 13 Principles and procedures for the lashing and securing of cargo, including the inspection and maintenance requirements for lashing equipment
- 14 Maritime communication techniques

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 vessel

REQUIRED SKILLS

- 2 Read, interpret and apply basic instructions and standard operating procedures relevant to rigging and lifting operations on a vessel
- 3 Work safely and collaboratively with others during rigging and lifting operations on a 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 vessel and take appropriate action
- 6 Tie required knots and demonstrate rope handling skills
- 7 Adapt to differences in vessels, equipment and standard operating procedures
- 8 Follow required work schedule as per company requirements

Evidence Guide

Evidence Guide

TDMMR3307B PERFORM RIGGING AND LIFTING OPERATIONS ON BOARD A 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.

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| 1 Critical aspects of evidence required to demonstrate competency in this unit | Assessment must confirm appropriate knowledge and skills to: <ol style="list-style-type: none">a Use and maintain ropes and wireb Operate lifting gearc Rig and maintain personnel and pilot access waysd Perform tasks aloft and over vessel's sidee Lash and secure cargof Exercise all required safety and hazard control procedures |
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Evidence Guide

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	<p>g Communicate effectively with others during rigging operations</p>
<p>2 Evidence required for demonstration of consistent performance</p>	<p>a Performance is demonstrated consistently over a period of time and in a suitable range of contexts</p> <p>b Consistently applies underpinning seamanship knowledge and skills when:</p> <ol style="list-style-type: none">1 using and maintaining ropes and wire2 operating lifting gear3 rigging and maintaining personnel and pilot access ways4 performing tasks aloft and over vessel's side5 lashing and securing cargo6 applying safety precautions during rigging operations <p>c Shows evidence of application of relevant workplace procedures, including:</p> <ol style="list-style-type: none">1 relevant sections of marine regulation2 ISM Code safety management system procedures3 OH&S regulations and hazard prevention policies and procedures4 standard operating procedures and work instructions5 relevant manufacturer's guidelines relating to the use of ropes, wires, cables, anchors, deck equipment and machinery, including instructions on equipment capability and limitations6 following on-board housekeeping processes <p>d Action is taken promptly to report and/or rectify accidents, safety incidents and operational problems in accordance with regulations and procedures</p>

Evidence Guide

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- e Work is completed systematically with required attention to detail

Evidence Guide (continued)

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2 Evidence required for demonstration of consistent performance (continued)

- f Recognises and adapts appropriately to cultural differences in the workplace, including modes of behaviour and interactions between crew and others

3 Context of assessment

- a Assessment of competency must comply with the assessment requirements of the relevant maritime regulations
- b Assessment of this unit must be undertaken within relevant marine authority approved and audited arrangements by a registered training organisation:
 - 1 As a minimum, assessment of knowledge must be conducted through appropriate written/oral examinations, and
 - 2 Appropriate practical assessment must occur:
 - i at the registered training organisation; and/or
 - ii on an appropriate working or training vessel

4 Specific resources required for assessment

- Access is required to opportunities to either:
- a a suitable range of appropriately simulated rigging, lifting and cargo lashing exercises, situations and case studies and associated resources; and/or
 - b assist with rigging, lifting and cargo lashing operations on a

Evidence Guide (continued)

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working vessel

Range Statement

Range Statement

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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

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

2. WORKSITE ENVIRONMENT

a Vessel may include:	1 any Australian or international commercial vessel
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Range Statement

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b Rigging operations may be carried out:	<ol style="list-style-type: none"> 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, anchored or moored
c Rigging operations may include:	<ol style="list-style-type: none"> 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 rigging accommodation ladders, gangways and man baskets 5 rigging Pilot ladders, and combined pilot-accommodation ladders and pilot hoists 6 lashing cargo

Range Statement (continued)

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VARIABLE	SCOPE
d Knots and splices may include:	<ol style="list-style-type: none"> 1 figure of eight 2 reef knot 3 clove hitch

Range Statement (continued)

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ON BOARD A VESSEL**

	4 rolling hitch
	5 sheet bend
	6 sheep shank
	7 bowline on the bite
	8 carrick bend
	9 marline spike hitch
	10 eye splice
	11 short splice
	12 common whipping
	13 west country whipping
	14 sail maker's whipping
	15 common seizing
	16 racking seizing
e Personnel access equipment may include:	1 accommodation ladders
	2 gangways
	3 man baskets
	4 brows
	5 pilot ladders
	6 combined pilot accommodation ladders and pilot hoists
f Lifting gear may include:	1 cranes
	2 derricks

Range Statement (continued)

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- 3 winches
- 4 hoists
- 5 grabs
- 6 spreaders

Range Statement (continued)

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VARIABLE	SCOPE
<p>g Lifting gear components may include:</p>	<ul style="list-style-type: none"> 1 shackles 2 hooks 3 slings 4 blocks 5 tackles 6 hoists 7 eyebolts 8 beam clamps 9 trolleys
<p>h Equipment for working aloft and over the side may include:</p>	<ul style="list-style-type: none"> 1 gantlines 2 bosun's chair 3 safety harnesses 4 stage

Range Statement (continued)

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i Cargo to be lashed may include:	<ol style="list-style-type: none"> 1 general cargo 2 containers 3 roll-on-roll-off vehicles 4 timber deck cargo
j Documentation and records may include:	<ol style="list-style-type: none"> 1 ISM Code safety management system procedures 2 shipboard rigging procedures 3 manufacturer's instructions and recommended procedures 4 relevant Australian and international standards and regulations
k Applicable legislation, regulations and codes may include:	<ol style="list-style-type: none"> 1 relevant sections of IMO STCW 95 Convention and Code 2 ISM Code safety management system 3 relevant international, Commonwealth, State and Territory OH&S legislation

Unit Sector(s)

Not applicable.

Field

Field R Carry Out Operations on Equipment and Systems

Relationship to other units

Relationship to other units	The unit must be assessed in conjunction with other units that relate to the functions of the occupation(s) concerned.
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