



Australian Government

Department of Education, Employment and Workplace Relations

TDMMR4507B PROVIDE SUPPORT IN COMPLETING CARGO AND BUNKERING OPERATIONS

Revision Number: 1

TDMMR4507B PROVIDE SUPPORT IN COMPLETING CARGO AND BUNKERING OPERATIONS

Modification History

Not applicable.

Unit Descriptor

UNIT DESCRIPTOR:

This unit involves the skills and knowledge required of an Integrated Rating to provide support to the responsible officer in the completion of a range of cargo operations on board a commercial vessel, including carrying out hatch cover operations, cleaning and preparing cargo spaces, lashing cargo, assisting in tanker cargo operations, and assisting in routine bunkering operations.

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 Carry out hatch cover operations	- a Assistance is provided in hatch opening and closing operations in accordance with established procedures and under the supervision of the responsible officer - b Carry out checks and routine maintenance on hatch securing and opening devices and machinery in accordance with established procedures and under the supervision of the responsible officer - c Assistance is provided in securing hatch covers for sea in accordance with established procedures and under the supervision of the responsible officer
2 Clean and prepare cargo spaces	- a Assistance is provided in cleaning and preparation of a cargo space in accordance with established procedures and under the supervision of the responsible officer - b Assistance is provided in the opening, checking, cleaning and sealing of a bilge and the dismantling of a strum box
3 Lash cargo	- a Assistance is provided in the lashing of cargo in accordance with established procedures and under the supervision of the responsible officer - b Appropriate precautions are taken during cargo lashing procedures to avoid cargo damage

ELEMENT	PERFORMANCE CRITERIA
	c Faulty and defective lashing and securing gear and equipment is identified, marked and reported to the responsible officer

ELEMENT	PERFORMANCE CRITERIA
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4 Assist in tanker cargo operations	a Assistance is provided in the setting up the valve and pipework system of a tanker in preparation for loading and discharging as directed by the supervising officer b Assistance is provided in the routine checks and maintenance of the inert gas and ventilation systems on a tanker under the supervision of the responsible officer c Assistance is provided in tank cleaning and gas freeing operations in accordance with established procedures and under the supervision of the responsible officer d Assistance is provided in port arrival procedures in preparation for cargo handling operations as directed by the supervising officer e Assistance is provided in the gauging and sampling of a tank and the monitoring of liquid cargo in accordance with established procedures and under the supervision of the responsible officer F Assistance is provided in the topping off a tank and tank changeover operations as per established procedures and under the supervision of the responsible officer g Assistance is provided in the securing the vessel for sea following tanker cargo handling operations
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5 Assist in bunkering operations	a Assistance is provided in carrying out pre-bunkering activities in accordance with established procedures and under the supervision of the responsible officer b A checklist for bunkering activities is completed in accordance with established procedures and under the supervision of the responsible officer
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ELEMENT	PERFORMANCE CRITERIA
	c Routine bunkering activities are carried out as directed by the supervising officer d Assistance is provided in containment of spills in accordance with established procedures and under the supervision of the responsible officer e Assistance is provided in emergency response in accordance with established procedures and under the supervision of the responsible officer F Assistance is provided in carrying out post-bunkering activities as directed by the supervising officer
6 Follow safety and hazard control procedures	a All required safety precautions and regulations are followed when carrying out cargo handling operations b Operational hazards are identified and action is taken in conjunction with the officers, engineers and other members of the crew to minimise or eliminate risk to personnel, vessel and the environment
ELEMENT	PERFORMANCE CRITERIA
6 Follow safety and hazard control procedures (continued)	c Where relevant, procedures and precautions necessary for entry into confined spaces on a vessel are correctly followed d Shipboard emergency and contingency plans are followed in the event of a failure or emergency during cargo handling operations

Required Skills and Knowledge

REQUIRED KNOWLEDGE

This describes the knowledge required for this unit.

- 1 Relevant OH&S and pollution control legislation and policies
- 2 Cargo handling and bunkering procedures on board a vessel
- 3 Functions and responsibilities of the officers and crew members during cargo and bunkering operations on board a vessel
- 4 Procedures for various cargo and bunkering operations on a vessel, including:
 - a carrying out hatch cover operations
 - b cleaning and preparing cargo spaces
 - c lashing and securing of various types of cargo
 - d bunkering operations (as required of an integrated rating)
 - e setting up the valve and pipework system of a tanker (as required of an integrated rating)
 - f tank cleaning and gas freeing operations on a tanker (as required of an integrated rating)
- 5 Hazards and related safety precautions when carrying out cargo and bunkering operations
- 6 Special hazards and precautions for cargo operations on board tankers, including:
 - a tank layouts and valve and pipeline systems on various types of tankers
 - b physical properties of oils, gases and chemicals carried in bulk
 - c basic principles of toxicity
 - d causes of explosions on tankers and related preventative measures
 - e safety, environmental, reactive, corrosive and other hazards associated with tanker and bulk cargoes and related hazard control methods
 - f procedures and policies for the use of personal protection clothing and equipment (PPE)
 - g procedures for the use of escape/evacuation equipment

REQUIRED KNOWLEDGE

- h procedures for the prevention of air and water pollution
 - i procedures to be taken in the event of an accidental cargo spillage of liquid cargo on a tanker
- 7 Techniques and precautions required when lashing various types of cargo carried on vessels
 - 8 Basic environmental protection measures during cargo and bunkering operations
 - 9 Communication techniques and equipment used during cargo and bunkering operations on board a vessel

REQUIRED SKILLS

This describes the basic skills required for this unit.

- 1 Use basic verbal and other communication skills required when providing support in completing cargo and bunkering operations on a vessel
- 2 Read, interpret and apply basic instructions and standard operating procedures relevant to cargo and bunkering operations on a vessel
- 3 Read, interpret and apply security and environmental protection measures during cargo and bunkering operations
- 4 Work safely and collaboratively with others when providing support in completing cargo and bunkering operations on a vessel
- 5 Select and safely use tools and equipment as per operating instructions
- 6 Recognise routine problems and hazards that may occur during cargo and bunkering operations on a vessel and take appropriate action
- 7 Follow special hazard control procedures and precautions for cargo operations on board tankers
- 8 Store tools and equipment after use as per standard operating procedures
- 9 Adapt to differences in vessels, equipment and standard operating procedures
- 10 Follow required work schedule as per company requirements
- 11 Lash various types of cargo carried on vessels

Evidence Guide

Evidence Guide (continued)

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Evidence 2 required for demonstration of consistent performance (continued)	e Work is completed systematically with required attention to detail 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: a demonstrate the ability to assist in routine cargo and bunkering tasks on board a vessel through appropriate case studies, practical exercises and simulated situations; and/or b assist in routine cargo and bunkering tasks on board an operational commercial or training vessel

Range Statement

Range Statement TDMMR4507B PROVIDE SUPPORT IN COMPLETING CARGO AND BUNKERING OPERATIONS
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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
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1. GENERAL CONTEXT

a. Work must be carried out:	1 in compliance with relevant maritime regulatory requirements
b. Work is performed:	1 as an integrated rating under the supervision of the responsible officers with some accountability and responsibility for self in achieving the prescribed outcomes
c. Work involves:	1 the application of established procedures and techniques to the cargo and bunkering tasks falling within the limits of responsibility of an integrated rating on a vessel
d. Work requires:	1 the following of orders and instructions of the officer on watch

2. WORKSITE ENVIRONMENT

a Vessel may include:	1 any Australian or international commercial vessel
b Assistance in cargo operations may be provided:	1 by day or night in both normal and emergency situations 2 under any possible conditions of weather and loading 3 while underway

Range Statement

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- 4 while in port
- 5 while berthed, moored or at anchor

Range Statement (continued)

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VARIABLE	SCOPE
c Dry cargo may include:	1 general cargo stored in a cargo space or on a hatch 2 deck cargo 3 cargo containers 4 vehicles and trailers 5 equipment and stores 6 bulk cargo
d Bunkering tasks may include:	1 carrying out pre-bunkering activities 2 completing a checklist for bunkering activities 3 routine bunkering activities 4 containment of spills 5 emergency response 6 carrying out post-bunkering activities
e Operational hazards for dry cargo	1 moving heavy loads using unsafe lifting procedures 2 unsecured cargo, deck machinery, components or equipment

Range Statement (continued)

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include:	3 slippery deck 4 moving and rotating machinery 5 faulty lifting/lashing gear and equipment 6 using equipment beyond safe working limits 7 poor housekeeping procedures 8 working in confined spaces 9 non-compliance with safe working procedures
f Operational hazards for tanker and bunkering operations may include:	1 sources of ignition leading to explosion and fire 2 electrostatic generation leading to discharge 3 environmental hazards to air and water 4 reactivity hazards, including effects of self-reaction, temperature and effects of air, water, impurities and other chemicals and reagents 5 spills or release of toxic fluids, vapours and gases, involving skin contact and inhalation

Range Statement (continued)

TDMMR4507B PROVIDE SUPPORT IN COMPLETING CARGO AND BUNKERING OPERATIONS

VARIABLE	SCOPE
f Operational hazards for tanker and bunkering operations may include: (continued)	6 corrosion hazards to personnel, vessel structures and equipment 7 working in confined spaces

Range Statement (continued)

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g Documentation and records may include:

- 1 ISM Code safety management system plans, procedures, checklists and instructions
- 2 orders and instructions of the officer on watch
- 3 vessel and company procedures

h Applicable legislation, regulations and codes may include:

- 1 relevant sections of IMO STCW 95 Convention and Code
- 2 relevant sections of AMSA Marine Orders
- 3 ISM Code
- 4 relevant international, Commonwealth, State and Territory OH&S legislation

Evidence Guide

TDMMR4507B PROVIDE SUPPORT IN COMPLETING CARGO AND BUNKERING OPERATIONS

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.

1 Critical aspects of evidence required to demonstrate competency in this unit

- Assessment must confirm appropriate knowledge and skills to:
- a Assist in carrying out hatch cover operations,
 - b Assist in cleaning and preparing cargo spaces
 - c Assist in the lashing of cargo
 - d Assist in tanker cargo operations
 - e Assist in bunkering operations
 - f Apply all required safety, environmental and hazard control precautions and procedures during cargo and bunkering operations

Evidence Guide

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	g Communicate effectively with others during cargo and bunkering operations
2 Evidence required for demonstration of consistent performance	a Performance is demonstrated consistently over a period of time and in a suitable range of contexts b Consistently applies underpinning knowledge and skills when: 1 carrying out hatch cover operations, 2 cleaning and preparing cargo spaces 3 lashing cargo 4 assisting in tanker cargo operations 5 assisting in bunkering operations 6 exercising all required safety, environmental and hazard control precautions and procedures during cargo and bunkering operations 7 communicating effectively with others during cargo and bunkering operations c Shows evidence of application of relevant workplace procedures, including: 1 ISM Code and associated vessel's safety management system and procedures 2 OH&S regulations and hazard prevention policies and procedures 3 job procedures and work instructions 4 instructions and orders of officers on the vessel d Action is taken promptly to report operational incidents and problems in accordance with established procedures

Unit Sector(s)

Not applicable.

Field

Field MF 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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