



**Australian Government**

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

# **TDMMA907B PREPARE A CARGO PLAN FOR CARGO LOADING AND UNLOADING OPERATIONS WITHIN THE LIMITS OF RESPONSIBILITY OF A MASTER 4**

Release: 1



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## TDMMA907B PREPARE A CARGO PLAN FOR CARGO LOADING AND UNLOADING OPERATIONS WITHIN THE LIMITS OF RESPONSIBILITY OF A MASTER 4

### Modification History

Not applicable.

### Unit Descriptor

**UNIT DESCRIPTOR:**

**This unit involves the skills and knowledge required to prepare a cargo operations plan for within the limits of responsibility of a Master 5 and Master 4 on a commercial vessel and a Skipper 3 and Skipper 2 on a fishing vessel, i.e. vessels of less than 80 metres in length operating within inshore limits (15 nm) and less than 35 metres within Australian Coastal Middle Water (600 nm). This includes the procedures for loading, unloading and distributing cargo on the vessel, appropriate emergency procedures for incidents involving dangerous and hazardous cargoes, suitable procedures for cargo monitoring and specifications for safety procedures that conform with maritime practice and OH&S requirements.**

**This unit has s retitled but covers the same functions as previous unit TDMMA901A *Prepare a cargo plan for cargo loading and unloading operations***

### Application of the Unit

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| <b>Application of the unit</b> | The unit has applications in the qualifications for a Master 5, Master 4, Skipper 3 and Skipper 2 on commercial or fishing vessel, 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

|                                           |                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| <b>Licensing/legislative requirements</b> | The unit is consistent with the relevant maritime regulations, including the International Ship and Port Facility Security (ISPS) Code describing mandatory minimum requirements for a Master 5, Master 4, Skipper 3 and a Skipper 2. This includes applicable sections of State/Territory maritime licensing and regulatory requirements and the National Standard for Commercial Vessels (NSCV) and the USL Code. |
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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 Develop plan for safe cargo operations</b></p> | <p>.</p> <p>a The cargo to be loaded or unloaded is identified and its characteristics and dimensions established</p> <p>b Relevant regulations, procedures and instructions pertaining to the type of cargo to be loaded and unloaded are accessed and interpreted prior to developing plan for cargo operations</p> <p>c The conditions of assignment of load-lines, their maintenance and use are correctly interpreted and applied</p> |

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| <b>1 Develop plan for safe cargo operations (continued)</b>                        | <ul style="list-style-type: none"> <li>d Required communications between the vessel and the shore terminal prior to loading are specified in the cargo operations plan</li> <li>e Procedures for making allowances for the longitudinal stresses acting on vessel's hull for the planned cargo configurations and distributions are in accordance with maritime practice and company guidelines</li> <li>f Procedures for calculating the trim and stability of the vessel during loading/unloading operations are in accordance with maritime practice and company guidelines</li> <li>g Techniques to be used for cargo identification, inspection, calculations and handling are outlined in the plan, including any special procedures for dangerous and hazardous cargoes</li> <li>h The vessel's cargo operations plan is prepared and interpreted in accordance with established procedures</li> </ul>                                                                 |
| <b>2 Incorporate safety and hazard control procedures in cargo operations plan</b> | <ul style="list-style-type: none"> <li>a Appropriate tests and inspections on cargo handling equipment are included in the plan in accordance with regulations</li> <li>b Cargo handling hazards are identified and action is planned to minimise or eliminate risk to personnel, cargo, vessel and the environment</li> <li>c Specifications are provided for safety and hazard minimisation procedures and regulations to be followed at all times during cargo handling operations</li> <li>d Where relevant, precautions and procedures necessary for gas freeing a tank and for the entry of personnel into a tank are correctly specified in the plan</li> <li>e Where relevant, procedures and precautions necessary for entry into a pump room or other confined spaces on a vessel are correctly specified in the plan</li> <li>f Information is provided in the plan of procedures to be taken in the event of a cargo handling incident or emergency to</li> </ul> |

|                                                |                                                                                                                                                                                                            |
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|                                                | secure the cargo and the vessel and maintain the safety of the vessel and persons involved                                                                                                                 |
| <b>3 Complete cargo handling documentation</b> | <p>a Cargo operations plan is documented and stored in accordance with company procedures and maritime requirements</p> <p>b Cargo operations plan is communicated to others using appropriate methods</p> |

## Required Skills and Knowledge

### REQUIRED SKILLS AND KNOWLEDGE

#### REQUIRED KNOWLEDGE

*This describes the knowledge required for this unit.*

- 1 Relevant State and Territory maritime regulations, including the International Ship and Port Facility Security (ISPS) Code
- 2 Relevant OH&S and cargo handling legislation and policies
- 3 Procedures and documentation required in the event of a safety incident during cargo operations
- 4 Typical operational characteristics of different types of shipboard and terminal-based cargo handling and securing equipment and facilities
- 5 Methods for handling various types of cargo
- 6 Basic ways of restricting vessel's stress levels within permitted limits during cargo operations on a small vessel
- 7 Effects of different types of cargo operations on vessel's trim and stability
- 8 Procedures for calculating the maximum deadweight available to a vessel that needs to subsequently enter various seasonal load-line zones
- 9 Procedures for calculating the stresses on lifting gear used in cargo handling operations
- 10 Typical cargo handling hazards and problems and appropriate preventative and remedial action and solutions
- 11 Effects on cargo handling of wind and weather
- 12 Cargo identification codes, including IMDG code and Bulk Cargo Code
- 13 Ballast management issues and procedures
- 14 Typical types and sizes of shipping containers

## REQUIRED SKILLS AND KNOWLEDGE

- 15 Basic procedures for determining a vessel's displacement by draught survey
- 16 Factors that affect the reading of a vessel's draught
- 17 Procedures for determining the forces acting on equipment used to lash cargo
- 18 Basic procedures for estimating the longitudinal stresses acting on a vessel's hull using both manual and computer techniques
- 19 Cargo handling communication techniques
- 20 Cargo handling documentation requirements, including documentation to limit claims on cargo carried

## REQUIRED SKILLS

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

- 1 Read and interpret and apply instructions, regulations, procedures and information relevant to the preparation of a cargo plan for cargo loading and unloading operations
- 2 Communicate effectively with others when preparing a cargo plan for cargo loading and unloading operations
- 3 Work collaboratively with other shipboard personnel when preparing a cargo plan
- 4 Take appropriate initiatives related to the preparation of a cargo plan
- 5 Interpret and apply security and safety practices and regulations when preparing a cargo plan for cargo loading and unloading operations
- 6 Modify activities dependent on differing workplace contingencies, risk situations and environments
- 7 Identify and solve problems associated with the preparation of a cargo plan and take appropriate action based on available information
- 8 Monitor and anticipate problems related to the preparation of a cargo plan, and take appropriate action

- 9 Adapt to differing types of vessels, port facilities, cargoes and equipment

## Evidence Guide

### Evidence Guide

#### EVIDENCE GUIDE

*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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| <b>1 Critical aspects of evidence required to demonstrate competency in this unit</b> | <p>Assessment must confirm appropriate knowledge and skills to:</p> <ul style="list-style-type: none"> <li>a Plan cargo loading and unloading operations across a representative range of typical cargo handling contexts for a vessel up to 80 metres in length:</li> <li>b Ensure compliance with all required safety, environmental and hazard control precautions and procedures when planning the handling of cargo during loading/unloading and stowage operations</li> <li>c Identify typical cargo handling problems and hazards and plan for appropriate action</li> <li>d Communicate effectively with others when developing a cargo operations plan</li> </ul> |
| <b>2 Evidence required for demonstration of consistent performance</b>                | <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 knowledge and skills when                             <ul style="list-style-type: none"> <li>1 planning cargo loading and unloading operations</li> <li>2 identifying and evaluating cargo handling problems and determining appropriate courses of action</li> </ul> </li> </ul>                                                                                                                                                                                                 |

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|   | <ol style="list-style-type: none"> <li>3 determining stress levels that may occur during cargo loading and unloading operations</li> <li>4 assessing operational capability of cargo handling equipment</li> <li>5 specifying safety precautions to be used during cargo loading and unloading operations</li> </ol>                                                                                                                                     |
| c | Shows evidence of application of relevant workplace procedures, including: <ol style="list-style-type: none"> <li>1 relevant maritime regulations</li> <li>2 OH&amp;S regulations and hazard prevention policies and procedures</li> <li>3 job procedures and work instructions</li> <li>4 relevant manufacturer's guidelines relating to the use of cargo handling machinery, including instructions on equipment capability and limitations</li> </ol> |
| d | Action is taken promptly to report and/or rectify accidents and safety incidents in accordance with statutory requirements and company procedures                                                                                                                                                                                                                                                                                                        |

**Evidence Guide (continued)**

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**2 Evidence required for demonstration of consistent performance (continued)**

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| 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**

- |   |                                                                                                                                                      |
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| 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: |

|                                                     |                                                                                                                                                                                                                                                                                                                                                                                      |
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|                                                     | <ol style="list-style-type: none"> <li>1 As a minimum, assessment of knowledge must be conducted through appropriate written/oral examinations, and</li> <li>2 Appropriate practical assessment must occur: <ol style="list-style-type: none"> <li>i at the registered training organisation; and/or</li> <li>ii on an appropriate working or training vessel</li> </ol> </li> </ol> |
| <b>4 Specific resources required for assessment</b> | <p>Access is required to opportunities to:</p> <ol style="list-style-type: none"> <li>a monitor and supervise suitably simulated cargo loading/unloading operations over an appropriate range of cargo handling situations, weather and operational conditions; and/or</li> <li>b monitor and supervise the actual cargo loading/unloading operations of a vessel</li> </ol>         |

## 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

|                                     |                                                                                                          |
|-------------------------------------|----------------------------------------------------------------------------------------------------------|
| <b>a. Work must be carried out:</b> | <ol style="list-style-type: none"> <li>1 in compliance with the relevant maritime regulations</li> </ol> |
|                                     |                                                                                                          |

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| <b>b. Work is performed:</b> | 1 within a defined range of operations and routine procedures, with responsibility for own outputs and some responsibility for others                                                                                    |
| <b>c. Work involves:</b>     | 1 the conduct of routine procedures for the planning of cargo loading and unloading operations on board a vessel and the specification of solutions to a defined range of typical cargo loading and unloading situations |
| <b>d. Work requires:</b>     | 1 some discretion and judgement in anticipating and allowing for possible cargo loading and unloading problems, safety hazards and contingencies and the actions to be taken in these eventualities                      |

## 2. WORKSITE ENVIRONMENT

|                                                                     |                                                                                                                                                                   |
|---------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>a Cargo loading and unloading plan may relate to:</b>            | 1 any Australian commercial vessel up to 80 metres in length                                                                                                      |
| <b>b Cargo loading and unloading operations may be carried out:</b> | 1 by day or night in both normal and emergency situations<br>2 under any possible conditions of weather<br>3 at various shoreside loading and discharge terminals |
| <b>c Types of cargo may include:</b>                                | 1 general cargo<br>2 containers<br>3 various types of solid bulk materials<br>4 various types of bulk liquids                                                     |

### Range Statement (continued)

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| VARIABLE                                         | SCOPE                                                                                                                                                                                                                                                                              |
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| <b>c Types of cargo may include: (continued)</b> | 5 special and abnormal cargo such as: <ul style="list-style-type: none"> <li>i refrigerated cargo and containers</li> <li>ii pig iron, ingots and steel billets</li> <li>iii mineral concentrates</li> <li>iv dangerous or hazardous cargo</li> <li>v extra heavy cargo</li> </ul> |
| <b>d Cargo handling equipment may include:</b>   | 1 block and tackle<br>2 single swinging derricks<br>3 union purchase derricks<br>4 shipboard cranes<br>5 terminal-based cranes<br>6 pumps, valves and hoses                                                                                                                        |
| <b>e Cargo handling hazards may include:</b>     | 1 faulty cargo handling equipment<br>2 damaged cargo<br>3 cargo handling operations in poor weather or sea conditions<br>5 incorrectly stowed cargo<br>6 incorrectly lashed or secured cargo<br>7 using equipment beyond safe working limits                                       |

**f Documentation and records may include:**

- 1 relevant regulations
- 2 cargo handling operational orders and instructions
- 3 relevant sections of Australian USL Code
- 4 vessel/shore safety checklist
- 5 cargo handling procedures
- 6 cargo handling equipment manufacturer's instructions and recommended procedures
- 7 instructions of relevant maritime authorities

**Range Statement (continued)**

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**g Applicable legislation, regulations and codes may include:**

- 1 relevant sections of State and Territory maritime regulations, including the International Ship and Port Facility Security (ISPS) Code and the NSCV/Australian USL Code
- 2 relevant Commonwealth, State and Territory OH&S legislation
- 3 relevant Commonwealth, State and Territory environmental protection legislation

**Unit Sector(s)**

Not applicable.

## Field

Field MA Handling Cargo and Vessel Security

## 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. |
|------------------------------------|-----------------------------------------------------------------------------------------------------------------------|