



**Australian Government**

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

# **TDMMR3407B OPERATE DECK MACHINERY**

**Revision Number: 1**

## TDMMR3407B OPERATE DECK MACHINERY

### Modification History

Not applicable.

### Unit Descriptor

UNIT DESCRIPTOR:

**This unit involves the skills and knowledge required of an Integrated Rating to operate deck machinery installed on a commercial vessel, including anchoring equipment, mooring equipment, cargo hatch covers, cranes and derricks, lifeboat davits, gangways and pilot ladders, ventilators and breathers, and fairleads and rollers.**

### Application of the Unit

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

### Licensing/Regulatory Information

|   |   |
|---|---|
| <b>Licensing/legislative requirements</b> | 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

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| <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  |
|--|---|
| <b>1 Operate deck machinery</b>                        | <ul style="list-style-type: none"> <li>a Pre-operational checks of deck machinery and associated systems are carried out in accordance with safety requirements and shipboard practices</li> <li>b Operation of deck machinery is performed in accordance with manufacturer's specifications and instructions and safety requirements</li> <li>c Any operational problems encountered in the use of deck machinery on the vessel are reported and/or rectified in accordance with procedures</li> <li>d Malfunctioning equipment is identified and the nature of the fault is investigated and the outcomes reported in accordance with procedures</li> <li>e Post-operational checks of deck machinery and associated systems are carried out in accordance with safety requirements and shipboard practices</li> <li>f Records of equipment status and identified defects and malfunctions are completed in accordance with procedures</li> </ul> |
| <b>2 Carry out routine planned maintenance of deck</b> | <ul style="list-style-type: none"> <li>a Maintenance arrangements for deck machinery on the vessel are carried out in accordance with survey requirements and manufacturer's specifications</li> <li>b Operational problems or faults with the vessel's deck</li> </ul>   |

| <b>ELEMENT</b>   | <b>PERFORMANCE CRITERIA</b>  |
|--|--|
| <b>machinery</b>   | <p>machinery are identified and the causes identified</p> <p>c Any restrictions to operations arising from identified malfunctions of the deck machinery are justified and reported as required</p>  |
| <b>ELEMENT</b>   | <b>PERFORMANCE CRITERIA</b>  |
| <b>2 Carry out routine planned maintenance of deck machinery (continued)</b> | <p>d Routine lubrication and other preventative maintenance of deck machinery is carried out in accordance with manufacturer's instructions</p> <p>e Faulty deck machinery, equipment and parts are identified, reported and repaired or replaced as per manufacturer's instructions and procedures</p> <p>f Required adjustments to the deck machinery are carried out in accordance with manufacturer's specifications</p> <p>g Records of preventative and remedial maintenance carried out on deck machinery are completed in accordance with procedures</p>   |
| <b>3 Apply safety and hazard control procedures</b>                          | <p>a Safety, hazard minimisation and pollution control procedures and regulations are followed at all times during the operation of deck machinery</p> <p>b Operational and maintenance hazards related to deck machinery use and maintenance are identified and action is taken to minimise or eliminate risk to personnel, vessel and the environment</p> <p>c Action is taken in the event of failure or emergency to ensure the isolation and security of the deck machinery and maintain the safety of the vessel and personnel involved</p> <p>d Vessel's emergency and contingency plans are followed in the event of a failure or emergency involving deck machinery</p> |

## Required Skills and Knowledge

### REQUIRED KNOWLEDGE

*This describes the knowledge required for this unit*

- 1 Applicable sections of the relevant maritime regulations
- 2 Relevant OH&S and pollution control legislation and codes of practice
- 3 Principal design, safety features and component parts of deck machinery
- 4 Procedures for operating and carrying out planned maintenance of deck machinery
- 5 Procedures for isolating defective deck machinery or components
- 6 Repair and/or replacement procedures for deck machinery and components
- 7 Principles and procedures of machinery lubrication as they relate to deck machinery on a vessel, including:
  - a application of grease
  - b changing of gearbox lubricating oil
  - c lubrication of a steel wire rope
  - d applications and use of 'denso' tape
  - e changing of lubricating and hydraulic oil

## REQUIRED KNOWLEDGE

- 8 Procedures for the replacement of flexible hoses in deck machinery
- 9 Procedures for using hand and power tools for typical maintenance operations on deck machinery
- 10 Maintenance and repair hazards and problems and appropriate preventative and remedial action and solutions
- 11 Safety, environmental and hazard control precautions and procedures relevant to the operation and maintenance of deck machinery
- 12 Safe procedures for handling heavy machinery and component parts during maintenance of deck machinery
- 13 Purpose and content of material safety data sheets
- 14 Maritime communication techniques needed during the use and maintenance of deck machinery on a vessel
- 15 Maintenance records that must be maintained on a commercial vessel

## REQUIRED SKILLS

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

- 1 Use basic verbal and other forms of communication skills required during the operation of deck machinery
- 2 Read, interpret and apply manuals and standard operating procedures related to the operation and servicing of deck machinery
- 3 Complete any required records related to the operation of deck machinery on a vessel
- 4 Work safely and collaboratively with others during the operation of deck machinery on a vessel
- 5 Select and use relevant tools and equipment as per instructions
- 6 Recognise faulty equipment and take appropriate action as per operating instructions
- 7 Recognise routine problems and hazards while operating deck machinery and take appropriate action

## REQUIRED SKILLS

- 8 Adapt to differences in vessels, equipment and standard operating procedures
- 9 Follow required work schedule as per company requirements

## Evidence Guide

### Evidence Guide

### TDMMR3401B OPERATE DECK MACHINERY

*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> <ol style="list-style-type: none"> <li>a Use and carry out planned routine maintenance of deck machinery</li> <li>b Identify typical problems related to the deck machinery operation and maintenance and take appropriate action in conjunction with other vessel personnel</li> <li>c Ensure the exercise of all required safety, environmental and hazard control precautions and procedures during deck machinery operation and maintenance</li> <li>d Communicate effectively with others during the operation and maintenance of deck machinery</li> </ol> |
| <p><b>2 Evidence required for demonstration of consistent performance</b></p>                 | <ol 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:             <ol style="list-style-type: none"> <li>1 using and carrying out planned routine maintenance of deck machinery</li> </ol> </li> </ol>   |

**Evidence Guide****TDMMR3401B OPERATE DECK  
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- 2 identifying and operational and maintenance problems and determining appropriate courses of action
  - 3 ensuring the application of safety precautions relevant to use and maintenance of deck machinery
- c Shows evidence of application of relevant workplace procedures, including:
- 1 relevant sections of maritime regulations
  - 2 ISM Safety Management Code procedures
  - 3 OH&S regulations, pollution control and hazard prevention policies and procedures
  - 4 job procedures and work instructions
  - 5 relevant deck machinery manufacturer's guidelines relating to operation routine maintenance procedures
  - 6 environmental protection procedures when carrying out maintenance operations
- d Action is taken promptly to report and/or rectify defective or malfunctioning deck machinery, equipment and components in accordance with manufacturer's instructions and established procedures
- 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



**Evidence Guide (continued)****TDMMR3407B OPERATE DECK  
MACHINERY****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 participate in a range of exercises, case studies and other simulated practical and knowledge assessments that demonstrate the skills and knowledge to use and carry out planned routine maintenance of deck machinery on a vessel; and/or
  - b use and carry out planned routine maintenance of deck machinery on an operational commercial or training vessel

## Range Statement

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| <b>Range Statement</b><br><b>TDMMR3407B OPERATE DECK MACHINERY</b> |
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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> | 1 in compliance with the relevant regulatory requirements for the operation and maintenance of deck machinery  |
| <b>b. Work is performed:</b>        | 1 within established operational requirements, with responsibility for own outputs in relation to specified quality standards and limited responsibility for within a team in achieving the specified quality and quantity of outcomes |
| <b>c. Work involves:</b>            | 1 the operation and planned routine maintenance of deck machinery on a vessel  |

#### 2. WORKSITE ENVIRONMENT

|  |   |
|--|---|
| <b>a Vessel may include:</b>   | 1 any Australian or international commercial vessel   |
| <b>b Operation and maintenance of the deck machinery may be carried out:</b> | 1 by day or night<br>2 while underway<br>3 during berthing and unberthing operations<br>4 while anchoring or mooring<br>5 while in port |

**Range Statement****TDMMR3407B OPERATE DECK  
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|                                   |   |
|-----------------------------------|---|
|                                   | 6 while moored or at anchor   |
| <b>c Maintenance may include:</b> | 1 planned maintenance systems<br>2 operational checks<br>3 recording<br>4 reporting<br>5 isolation<br>6 cleanliness |

**Range Statement (continued)****TDMMR3407B OPERATE DECK  
MACHINERY**

| <b>VARIABLE</b>                                   | <b>SCOPE</b>  |
|---|---|
| <b>c Maintenance may include:<br/>(continued)</b> | 7 use of correct tools, parts, and lubricants<br>8 worksite preparation   |
| <b>d Deck machinery may include:</b>              | 1 anchoring windlasses<br>2 mooring equipment<br>3 cargo hatch covers<br>4 cranes and derricks<br>5 lifeboat davits<br>6 gangways and pilot ladders |

**Range Statement (continued)****TDMMR3407B OPERATE DECK  
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|  |   |
|--|---|
|  | 7 ventilators and breathers   |
|  | 8 fairleads and rollers   |
| <b>e Hydraulic Components of deck machinery may include:</b> | 1 pump<br>2 reservoir<br>3 rams<br>4 motors<br>5 filters<br>6 coolers<br>7 valves,<br>8 control valves and relief valves<br>9 pipes and hoses   |
| <b>f Maintenance tools and equipment may include:</b>        | 1 hand and power tools<br>2 greasing and lubrication tools<br>3 protective clothing and equipment, including: <ul style="list-style-type: none"> <li>i eye and ear protection</li> <li>ii safety boots and helmet</li> <li>iii dust and fume masks</li> </ul> |

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| VARIABLE  | SCOPE  |
|---|--|
| <b>g Hazards when operating and maintaining deck machinery may include:</b> | <ol style="list-style-type: none"> <li>1 rotating and moving parts</li> <li>2 high pressure systems</li> <li>3 slippery deck</li> <li>4 sharp tools and implements</li> <li>5 power tools</li> <li>6 electrical circuits</li> <li>7 cleaning chemicals</li> <li>8 oil</li> <li>9 pollution</li> <li>10 heat</li> <li>11 cables and ropes</li> <li>12 faulty machinery equipment handling equipment and lifting gear</li> <li>13 using equipment beyond safe working limits</li> <li>14 poor housekeeping procedures</li> <li>15 non-compliance with safe working procedures</li> </ol> |
| <b>h Documentation and records may include:</b>                             | <ol style="list-style-type: none"> <li>1 ISM Code safety management system plans, procedures, checklists and instructions</li> <li>2 planned maintenance system</li> <li>3 OH&amp;S regulations and policy</li> </ol>  |

**Range Statement****TDMMR3407B OPERATE DECK MACHINERY**

|   |   |   |
|---|---|---|
|   | 4 | maintenance records   |
|   | 5 | deck machinery manufacturer's instructions, specifications and recommended procedures                             |
|   | 6 | relevant Australian standards   |
| <b>i Applicable legislation, regulations and codes may include:</b> | 1 | sections of the IMO STCW 95 Convention and Code and AMSA Marine Orders related to deck operations and maintenance |
|   | 2 | relevant Commonwealth, State and Territory OH&S and pollution control legislation                                 |

**Unit Sector(s)**

Not applicable.

**Field**

Field R Carry Out Operations on Equipment and Systems

**Relationship to other units**

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