



Australian Government

Department of Education, Employment and Workplace Relations

TDMMR4707B USE AND CARE FOR HAND AND POWER TOOLS ON A VESSEL

Revision Number: 1

TDMMR4707B USE AND CARE FOR HAND AND POWER TOOLS ON A VESSEL

Modification History

Not applicable.

Unit Descriptor

UNIT DESCRIPTOR:

This unit involves the skills and knowledge required to use and care for hand and power tools used by Integrated Ratings on board commercial vessels.

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 Select appropriate tools for work	<ul style="list-style-type: none"> a Work requirements are interpreted in accordance with the instructions of the supervising engineer b Appropriate hand and power tools are selected for the tasks required c Selected hand and power tools are checked for their serviceability d Defective tools are identified and reported and appropriate action is taken for their repair or replacement in accordance with established procedures e Blunt or worn tools are identified and appropriate action taken to replace, sharpen or rectify the relevant blade, drill bit, or other tool component or attachment in accordance with established procedures and manufacturer's instructions f Instructions for the use of the tools are accessed and interpreted if required
2 Use hand and power tools	<ul style="list-style-type: none"> a Work area, work pieces and tools are prepared for the required tasks in accordance with the engineer's instructions and established practice b Other personnel in the work area are made aware of the work being carried out as required by safety management procedures c Where relevant, work is marked out using appropriate marking out tools in accordance with established procedures d Hand and power tools are used for the tasks as directed and in accordance with established procedures and

ELEMENT	PERFORMANCE CRITERIA
	<p>manufacturer's instructions</p> <p>e Desired outcomes for the work are achieved to job specifications, including finish, tension, size, shape, etc. as required</p>

ELEMENT	PERFORMANCE CRITERIA
<p>3 Follow safety and hazard control procedures</p>	<p>a All required safety precautions, procedures and regulations are followed when using hand and power tools</p> <p>b Operational hazards are identified when using hand and power tools and action is taken in conjunction with others to minimise or eliminate risk to self, other personnel, the vessel and the environment</p>
<p>4 Care for hand and power tools</p>	<p>a Tools are used only for their intended purposes in accordance with manufacturer's instructions and established procedures</p> <p>b Tools are cleaned and stored after use in accordance with manufacturer's instructions and established procedures</p> <p>c Where relevant, tools are sharpened in accordance with manufacturer's instructions and established procedures</p> <p>d Where relevant, tools are adjusted, tightened and/or lubricated in accordance with manufacturer's instructions and established procedures</p> <p>e Grinding wheels are dressed and made true in accordance with manufacturer's instructions and established procedures</p> <p>f Defective or worn tools and tool components are identified, marked as required and reported, and appropriate action is taken for their repair or replacement in accordance with established procedures</p>

Required Skills and Knowledge

REQUIRED KNOWLEDGE

This describes the knowledge required for this unit.

- 1 ISM Code safety management procedures as they relate to the use of hand and power tools on board a vessel
- 2 Relevant OH&S and pollution control legislation and policies
- 3 Types, names and identifying features of various hand and power tools carried on a vessel
- 4 Established procedures for the use and care of hand or power tools required for work tasks that may be carried out by an integrated rating
- 5 Hazards and related safety precautions when using hand or power tools on board a vessel
- 6 Typical work specifications and drawings used on a vessel
- 7 Standard procedures for marking out work to specifications and measuring and checking the quality of finished work, including the correct use of:
 - a rules and tapes
 - b squares
 - c scribes
 - d dividers
 - e trammels
 - f adjustable gauge
 - g centre punch hammers
 - h callipers
 - i vernier callipers and micrometer

REQUIRED KNOWLEDGE

- 8 Procedures for identifying a glazed, loaded or untrue grinding wheel condition
- 9 Procedures for dressing and/or truing a grinding wheel
- 10 Characteristics and identifying features of common engineering drill bits
- 11 Environmental protection measures when carrying out basic engineering tasks

REQUIRED SKILLS

This describes the basic skills required for this unit.

Use basic verbal and other communication skills required when using and caring for hand and power tools carried on a vessel

- 2 Read, interpret and apply basic instructions and standard operating procedures relevant to using and caring for hand and power tools carried on a vessel
- 3 Read and interpret work specifications and drawings
- 4 Work safely and collaboratively with others when using and caring for hand and power tools
- 5 Select and safely use tools and equipment as per operating instructions
- 6 Recognise routine problems that may occur when using and caring for hand and power tools carried on a vessel and take appropriate action
- 7 Clean, sharpen or adjust tools as per standard operating procedures
- 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 Mark out work to specifications, and measure and check the quality of finished work
- 12 Identify a glazed, loaded or untrue grinding wheel condition and take appropriate action
- 13 Dress and true a grinding wheel

Evidence Guide

Evidence Guide

TDMMR4707B USE AND CARE FOR HAND AND POWER TOOLS ON 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.

<p>1 Critical aspects of evidence required to demonstrate competency in this unit</p>	<p>Assessment must confirm appropriate knowledge and skills to:</p> <ul style="list-style-type: none"> a Select appropriate hand and power tools to complete assigned tasks b Use hand and power tools as per procedures and manufacturer's instructions c Care for hand and power tools in accordance with established procedures and manufacturer's instructions d Ensure the exercise of all required safety, environmental and hazard control precautions and procedures when using hand and power tools to complete assigned tasks e Take appropriate action if a hand or power tool is found to be defective or worn
<p>2 Evidence required for demonstration of consistent performance</p>	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> 1 selecting appropriate hand and power tools to complete assigned tasks 2 using and caring for hand and power tools 3 ensuring the exercise of all required safety, environmental and hazard control precautions and procedures when using hand and power tools in accordance to complete assigned tasks 4 taking appropriate action where a hand or power tool has

Evidence Guide

TDMMR4707B USE AND CARE FOR HAND AND POWER TOOLS ON A VESSEL

- been found to be defective or worn
- 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 tool manufacturer's instructions
 - 4 established job procedures and work instructions
 - 5 following housekeeping processes
- d Action is taken promptly to report incidents and problems involving the use of hand and power tools
- 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)

TDMMR4707B USE AND CARE FOR HAND AND POWER TOOLS ON A VESSEL

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:

Evidence Guide (continued)

TDMMR4707B USE AND CARE FOR HAND AND POWER TOOLS ON A VESSEL

	<ul style="list-style-type: none"> i at the registered training organisation; and/or ii on an appropriate working or training vessel
<p>4 Specific resources required for assessment</p>	<p>Access is required to opportunities to:</p> <ul style="list-style-type: none"> a demonstrate the ability to the use and care of hand or power tools required for work tasks that may be carried out by an integrated rating on board a vessel through appropriate practical exercises and simulated situations; and/or b use and care for hand or power tools required for work tasks that may be carried out by an integrated rating on an operational commercial or training vessel

Range Statement

Range Statement

TDMMR4707B USE AND CARE FOR HAND AND POWER TOOLS ON A 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

<p>a. Work must be carried out:</p>	<p>1 in compliance with relevant maritime and safety regulatory requirements</p>

Range Statement

TDMMR4707B USE AND CARE FOR HAND AND POWER TOOLS ON A VESSEL

b. Work is performed:	1 under the direction of a supervising engineer, with some accountability and responsibility for self in achieving the prescribed outcomes
c. Work involves:	1 the use and care of hand and power tools required for the range of shipboard tasks that may be carried out by an integrated rating on board a vessel
d. Work requires:	1 the following of the orders and instructions of the supervising engineer

2. WORKSITE ENVIRONMENT

a Vessel may include:	1 any Australian or international commercial vessel
b Hand and power tools that may be used by an integrated rating on board a vessel may include:	<p>1 hand tools such as:</p> <ul style="list-style-type: none"> i spanners, screwdrivers and pliers ii vice grip iii punches iv torque wrenches v hammers and chisels vi files vii snips viii hacksaws and nibblers ix drill bits x taps

Range Statement

TDMMR4707B USE AND CARE FOR HAND AND POWER TOOLS ON A VESSEL

2 power tools such as:

Range Statement (continued)

TDMMR4707B USE AND CARE FOR HAND AND POWER TOOLS ON A VESSEL

**b Hand and power tools that may be used by an integrated rating on board a vessel may include:
(continued)**

- i portable and pedestal power drills
 - ii drilling jigs
 - iii portable and pedestal grinders
 - iv jig saws
 - v shears
 - vi power nibblers
- 3 gauges such as:
- i screw pitch
 - ii radius
 - iii feeler
 - iv thickness
 - v form
- 4 marking out and measuring tools such as:
- i rules
 - ii tapes
 - iii squares
 - iv scribes
 - v dividers
 - vi trammels

Range Statement (continued)

TDMMR4707B USE AND CARE FOR HAND AND POWER TOOLS ON A VESSEL

- vii adjustable gauge
- vii centre punch hammers
 - i
- ix callipers
- x vernier callipers
- xi micrometers
- 5 Care of tools may include:
 - i cleaning and sharpening (where relevant)
 - ii storing
 - iii using tools in accordance with manufacturer's instructions and established procedures and only for their intended purpose

Range Statement (continued)

TDMMR4707B USE AND CARE FOR HAND AND POWER TOOLS ON A VESSEL

VARIABLE	SCOPE
<p>c Safety precautions when using and caring for hand and power tools may include:</p>	<ul style="list-style-type: none"> 1 using personal protection clothing and equipment such as: <ul style="list-style-type: none"> i eye and ear protection ii boots iii masks 2 following manufacturer's instructions 3 following ISM Code safety management procedures as they apply to the use of hand and power tools

Range Statement (continued)

TDMMR4707B USE AND CARE FOR HAND AND POWER TOOLS ON A VESSEL

	<p>4 identifying hazards and using appropriate hazard minimisation strategies</p>
<p>d Operational hazards when using and caring for hand and power tools may include:</p>	<p>1 sharp blades</p> <p>2 moving and rotating blades and attachments</p> <p>3 electric shock</p> <p>4 unsecured machinery, components or equipment</p> <p>5 sparks in areas where flammable and explosive substances are stored</p> <p>6 using tools beyond safe working limits</p> <p>7 poor housekeeping procedures</p> <p>8 non-compliance with safe working procedures</p>
<p>e Documentation and records may include:</p>	<p>1 ISM Code safety management system plans, procedures, checklists and instructions</p> <p>2 orders and instructions of the supervising engineer</p> <p>3 instructions of manufacturer of tools and equipment</p> <p>4 vessel and company procedures</p>
<p>f Applicable legislation, regulations and codes may include:</p>	<p>1 ISM Code</p> <p>2 relevant international, Commonwealth, State and Territory OH&S legislation</p>

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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