



Australian Government

Department of Education, Employment and Workplace Relations

TDMMR307B OPERATE FUEL, FRESH AND SEA WATER, BILGE AND FIRE PUMPING SYSTEMS INSTALLED IN A VESSEL

Release: 1

TDMMR307B OPERATE FUEL, FRESH AND SEA WATER, BILGE AND FIRE PUMPING SYSTEMS INSTALLED IN A VESSEL

Modification History

Not applicable.

Unit Descriptor

UNIT DESCRIPTOR:

This unit involves the skills and knowledge required of a Master 5 or Skipper 3 to operate fuel, fresh and sea water, bilge and fire pumping systems installed in a small commercial vessel.

Application of the Unit

Application of the unit	The unit has applications in the qualification for a Master 5/Skipper 3 as per relevant sections of Part D of the National Standard for Commercial Vessels (NSCV), i.e. Certificate III in Transport&Distribution (Coastal Maritime Operations - Master Class 5).
--------------------------------	---

Licensing/Regulatory Information

Licensing/legislative requirements	The unit is consistent with the relevant sections of State and Territory maritime regulations and NSCV/USL Code for a Master 5/Skipper 3.
---	---

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>
--	--

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1 Operate pumping equipment	<ul style="list-style-type: none"> a Pumping arrangements are operated in accordance with manufacturer's specifications b Any operational problems encountered in the use of pumping arrangements on the vessel are reported and/or rectified in accordance with established procedures
2 Maintain pumping equipment	<ul style="list-style-type: none"> a A planned maintenance program for pumping systems on the vessel is prepared which fulfils all survey requirements b Checks of the vessel's pumping arrangements are carried out in accordance with planned maintenance program and manufacturer's instructions c Any operational problems or faults with the vessel's pumping arrangements are identified and appropriate maintenance action initiated d Lubricants are applied to moving parts of pumps and related equipment within pumping arrangements in accordance with manufacturer's instructions e Faulty pumps, related equipment and parts are identified, reported and repaired or replaced in accordance with manufacturer's instructions f Required adjustments to the pumping arrangements are carried out in accordance with manufacturer's specifications g Records of maintenance work carried out are completed in accordance with established procedures

Required Skills and Knowledge

REQUIRED KNOWLEDGE

This describes the knowledge required for this unit.

- 1 Relevant sections of State and Territory regulations, NSCV and USL Code dealing with responsibilities of a Master 5/Skipper 3
- 2 Relevant OH&S legislation and policies
- 3 Principal operational and safety features and component parts of pumping arrangements used on small vessels
- 4 Purpose and specific operational features and issues for the various pumping functions involved in the pumping arrangements on a small vessel, including:
 - a pumping of fuel
 - b pumping of fresh, sea, ballast and fish tank water
 - c bilge pumping, including emergency systems
 - d fire water pumping
- 5 Basic component parts, operation and survey requirements of pumping arrangements on a typical small vessel
- 6 Colour coding used to identify pumping systems on a small vessel
- 7 Procedures for operating typical pumping arrangements found on small vessels
- 8 Problems that may be experienced concerning the operation and maintenance of pumping arrangements on small vessels and appropriate precautions, action and solutions
- 9 Safety, operational, environmental and hygiene issues, precautions and procedures for:
 - a avoidance of contamination of fuel or drinking water
 - b keeping bilges clean
 - c maintaining an adequate supply of water for firefighting during emergencies while maintaining the stability of the vessel
 - d avoidance of contamination of the marine environment

REQUIRED KNOWLEDGE

- 10 Procedures for the checking, testing and inspecting pumping arrangements as part of a planned routine maintenance program
- 11 Repair and/or replacement procedures for pumping arrangements on board small vessels
- 12 Procedures for using hand and power tools for typical maintenance operations on pumping arrangements on small vessels
- 13 Safety, environmental and hazard control precautions and procedures relevant to inspection and maintenance of pumping arrangements on small vessels
- 14 Maintenance records that must be maintained on a small vessel

TDMMR307B OPERATE FUEL, FRESH AND SEA WATER, BILGE AND FIRE PUMPING SYSTEMS INSTALLED IN A VESSEL
--

REQUIRED SKILLS

This describes the basic skills required for this unit.

- 1 Use verbal communication skills required when operating and maintaining fuel, fresh and sea water, bilge and fire pumping systems installed in a vessel of less than 24 m in length
- 2 Read, interpret and apply operating and service manuals and instructions for operating and maintaining fuel, fresh and sea water, bilge and fire pumping systems, including all required OH&S procedures and precautions
- 3 Identify pumping systems on vessel drawings and identify, locate and trace them on board the vessel
- 4 Read and interpret material safety data sheets
- 5 Observe and interpret visual condition and indications of performance of the fuel, fresh, sea, ballast and fish tank water, bilge and fire pumping systems
- 6 Complete any required operational and servicing records
- 7 Work safely and collaboratively with others when operating and maintaining fuel, fresh, sea, ballast and fish tank water, bilge and fire pumping systems
- 8 Select and use relevant tools and equipment as per instructions
- 9 Recognise faulty equipment and take appropriate action as per operating

REQUIRED SKILLS

instructions

- 10 Recognise routine problems when operating and maintaining fuel, fresh and sea water, bilge and fire pumping systems and take appropriate action
- 11 Adapt to differences in vessels, fuel, fresh and sea water, bilge and fire pumping systems and related operating and servicing procedures
- 12 Operate fuel, fresh and sea water, bilge and fire pumping systems on a small vessel of less than 24 m in length

Evidence Guide

Evidence Guide

TDMMR307B OPERATE FUEL, FRESH AND SEA WATER, BILGE AND FIRE PUMPING SYSTEMS INSTALLED IN 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> <ol style="list-style-type: none"> a Operate and maintain pumping arrangements on a small vessel b Identify problems related to the operation and maintenance of pumping arrangements and take appropriate action c Exercise all required safety, environmental and hazard control precautions and procedures during inspection and maintenance operations d Communicate effectively with others when operating and maintaining pumping arrangements
<p>2 Evidence required for demonstration of consistent</p>	<ol 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

performance

when:

- 1 carrying out planned routine maintenance tests and checks of pumping arrangements on a small vessel
- 2 identifying and evaluating maintenance problems and determining appropriate courses of action
- 3 initiating and coordinating maintenance activities for pumping arrangements on a small vessel
- 4 applying safety precautions relevant to the operation and maintenance of pumping arrangements on a small vessel

c Shows evidence of application of relevant workplace procedures, including:

- 1 relevant maritime regulations
- 2 OH&S regulations and hazard prevention policies and procedures
- 3 job procedures and work instructions
- 4 manufacturer's guidelines relating to operational and routine maintenance procedures for pumping arrangements
- 5 environmental protection procedures when operating and maintaining pumping arrangements

d Action is taken promptly to report and/or rectify defective pumping arrangements, equipment and components

e Work is completed systematically with required attention to detail

Evidence Guide (continued)

TDMMR307B OPERATE FUEL, FRESH AND SEA WATER, BILGE AND FIRE PUMPING SYSTEMS INSTALLED IN A VESSEL

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 among crew and others
3 Context of assessment	<p>a Assessment of competency must comply with the assessment requirements of the relevant maritime regulations</p> <p>b Assessment of this unit must be undertaken within relevant marine authority approved and audited arrangements by a registered training organisation:</p> <ol style="list-style-type: none"> 1 As a minimum, assessment of knowledge must be conducted through appropriate written/oral examinations, and 2 Appropriate practical assessment must occur: <ol style="list-style-type: none"> i at the registered training organisation; and/or ii on an appropriate working or training vessel
4 Specific resources required for assessment	<p>Access is required to opportunities to:</p> <p>a participate in a range of exercises, case studies and other simulated practical and knowledge assessments that demonstrate the skills and knowledge to operate and carry out operations and maintenance on pumping arrangements on a small vessel; and/or</p> <p>b operate and carry out maintenance on pumping arrangements on an operational commercial or training small vessel</p>

Range Statement

Range Statement

TDMMR307B OPERATE FUEL, FRESH AND SEA WATER, BILGE AND FIRE PUMPING SYSTEMS INSTALLED IN 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

a. Work must be carried out:	1 in compliance with the relevant sections of State and Territory marine regulations, NSCV and USL Code
b. Work is performed:	1 within defined operational procedures, with responsibility for own outputs and limited responsibility for others in achieving the operation and maintenance of the pumping arrangements for a small vessel
d. Work requires:	1 preparing and implementing a planned maintenance program for pumping arrangements on a vessel up to 24 metres in length

2. WORKSITE ENVIRONMENT

a Vessel may include:	1 any commercial vessel up to 24 metres in length
b Operation and maintenance of the pumping	1 while underway 2 when berthed, moored or anchored

The Range Statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

may be carried out:	3 when slipped or in dry dock
c Pumping systems may include:	<ul style="list-style-type: none"> 1 fire systems 2 bilge systems 3 sea water for ballast and fish tanks 4 fuel systems 5 fresh water systems 6 deck wash

Range Statement (continued)

TDMMR307B OPERATE FUEL, FRESH AND SEA WATER, BILGE AND FIRE PUMPING SYSTEMS INSTALLED IN A VESSEL

VARIABLE	SCOPE
d Tank operations may include:	<ul style="list-style-type: none"> 1 sounding 2 filling 3 pumping 4 venting
e Maintenance may include:	<ul style="list-style-type: none"> 1 routine maintenance inspections 2 identification of any faults or operational problems 3 identification of faulty equipment or fittings and arranging for repair or replacement 4 application of lubricants to moving parts of pumps and related equipment within a vessel's pumping arrangements

VARIABLE	SCOPE
f Maintenance tools and equipment may include:	<ol style="list-style-type: none"> 1 hand and power tools 2 greasing and lubrication tools 3 protective clothing and equipment such as: <ol style="list-style-type: none"> i eye and ear protection ii safety boots iii dust and fume masks
g Documentation and records may include:	<ol style="list-style-type: none"> 1 relevant sections of State and Territory marine regulations, NSCV and USL Code 2 planned maintenance procedures 3 maintenance schedules and records 4 manufacturer's instructions, specifications and recommended procedures 5 notices and instructions of relevant maritime authorities related to the maintenance of vessels
h Applicable legislation, regulations and codes may include:	<ol style="list-style-type: none"> 1 relevant sections of State and Territory marine regulations, NSCV and USL Code 2 relevant 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 may be assessed in conjunction with other units that relate to the functions of the occupation(s) concerned.
------------------------------------	---