



Australian Government

Department of Education, Employment and Workplace Relations

TDMMR107B OPERATE AND MAINTAIN STEERING GEAR ARRANGEMENTS

Revision Number: 1

TDMMR107B OPERATE AND MAINTAIN STEERING GEAR ARRANGEMENTS

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 and maintain steering gear arrangements on 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).
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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.
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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 Operate steering gear arrangements	- a Steering gear is operated in accordance with manufacturer's instructions - b Problems encountered in the use of steering gear arrangements on the vessel are reported and/or rectified in accordance with established procedures
2 Maintain steering gear arrangements	- a Maintenance program for the steering gear arrangements on the vessel is prepared which fulfils all survey requirements - b Checks of the vessel's steering gear are carried out in accordance with planned maintenance procedures and manufacturer's instructions - c Any operational problems or faults with the vessel's steering gear are identified and appropriate maintenance action initiated - d Lubricants are applied to moving parts of steering gear in accordance with manufacturer's instructions - e Faulty steering gear equipment and parts are identified, reported and repaired or replaced in accordance with manufacturer's instructions and established procedures - f Required adjustments to the steering gear arrangements are carried out in accordance with manufacturer's specifications - g Records of maintenance work carried out are completed in

ELEMENT	PERFORMANCE CRITERIA
	accordance with planned 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 design and safety features and component parts of steering gear arrangements used on small vessels
- 4 Basic principles of hydraulics
- 5 Procedures for operating typical steering gear arrangements found on small vessels
- 6 Procedures for the checking and inspecting of steering gear arrangements as part of routine maintenance procedures
- 7 Basic component parts, operation and survey requirements of steering gear arrangements on a small vessel
- 8 Repair and/or replacement procedures for steering gear arrangements and related components on board small vessels
- 9 Procedures for using hand tools for typical maintenance operations in steering gear arrangements on small vessels
- 10 Requirements for, and operation of, emergency steering systems
- 11 Safety, environmental and hazard control precautions and procedures relevant to inspection and maintenance of steering gear arrangements on small vessels
- 12 Maritime communication techniques needed during slipping and maintenance operations
- 13 Problems that may be experienced related to the operation and maintenance of steering gear arrangements and appropriate action and solutions
- 14 Maintenance records that must be maintained on a small vessel

REQUIRED SKILLS

This describes the basic skills required for this unit.

REQUIRED SKILLS

- 1 Use verbal communication skills required when operating and maintaining steering gear arrangements on a small vessel of less than 24 m in length
- 2 Read, interpret and apply operating and service manuals and instructions for operating and maintaining steering gear arrangements and related equipment, including all required OH&S procedures and precautions
- 3 Read and interpret material safety data sheets
- 4 Observe and interpret visual condition and indications of performance of the steering gear arrangements and related equipment
- 5 Complete any required operational and servicing records
- 6 Work safely and collaboratively with others when operating and maintaining steering gear arrangements and related equipment
- 7 Select and use relevant tools and equipment as per instructions
- 8 Recognise faulty equipment and take appropriate action as per operating instructions
- 9 Recognise routine problems when operating and maintaining steering gear arrangements and related equipment and take appropriate action
- 10 Adapt to differences in vessels, steering gear arrangements and related operating and servicing procedures
- 11 Operate steering gear arrangements on a small vessel of less than 24 m in length

Evidence Guide

Evidence Guide

TDMMR107B OPERATE AND MAINTAIN STEERING GEAR ARRANGEMENTS

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.

Evidence Guide**TDMMR107B OPERATE AND MAINTAIN STEERING GEAR ARRANGEMENTS**

1 Critical aspects of evidence required to demonstrate competency in this unit	Assessment must confirm appropriate knowledge and skills to: - a Operate and maintain steering gear arrangements on a small vessel - b Identify problems related to the steering gear operation and maintenance 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 steering gear arrangements
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 routine maintenance checks on steering gear arrangements 2 identifying and evaluating maintenance problems and determining appropriate courses of action 3 initiating and coordinating steering gear maintenance activities 4 applying safety precautions relevant to maintenance operations - c Shows evidence of application of relevant workplace procedures, including: 1 relevant sections of State and Territory marine regulations, NSCV and USL Code 2 OH&S regulations and hazard prevention policies and procedures 3 job procedures and work instructions

Evidence Guide**TDMMR107B OPERATE AND MAINTAIN STEERING GEAR ARRANGEMENTS**

- 4 relevant steering gear manufacturer's guidelines relating to routine maintenance procedures
- 5 environmental protection procedures when carrying out maintenance operations
- d Action is taken promptly to report and/or rectify defective steering gear equipment and components in accordance with 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 among crew and others

Evidence Guide (continued)**TDMMR107B OPERATE AND MAINTAIN STEERING GEAR ARRANGEMENTS**

Context of assessment 3	- 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
Specific resources required 4	Access is required to opportunities to: a participate in a range of exercises, case studies and other

Evidence Guide (continued)**TDMMR107B OPERATE AND MAINTAIN STEERING GEAR ARRANGEMENTS****for assessment**

simulated practical and knowledge assessments that demonstrate the skills and knowledge to operate and carry out maintenance on steering gear arrangements on a small vessel; and/or

- b operate and carry out maintenance on steering gear on an operational commercial or training small vessel

Range Statement**Range Statement****TDMMR107B OPERATE AND MAINTAIN STEERING GEAR ARRANGEMENTS**

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 steering gear arrangements for a small vessel

Range Statement**TDMMR107B OPERATE AND MAINTAIN STEERING GEAR ARRANGEMENTS**

- d. Work requires:** 1 preparing and implementing a planned steering gear maintenance program for a vessel up to 24 metres in length

2. WORKSITE ENVIRONMENT

a Vessel may include:	1 any commercial vessel of less than 24 metres in length
b Operation of the steering gear arrangements may be carried out:	1 when on passage 2 while manoeuvring 3 while preparing to get underway
c Maintenance may include:	1 routine maintenance inspections 2 identification of any faults or operational problems 3 repairs of minor faults and imperfections in painted surfaces 4 identification of faulty equipment or fittings and arranging for repair or replacement 5 application of lubricants to moving parts of steering gear
d Maintenance tools and equipment may include:	1 hand tools 2 greasing and lubrication tools 3 protective clothing and equipment such as: i eye and ear protection

Range Statement (continued)**TDMMR107B OPERATE AND MAINTAIN STEERING GEAR ARRANGEMENTS**

VARIABLE	SCOPE
d Maintenance tools and equipment may include:	ii safety boots iii dust and fume masks
e Documentation and records may include:	1 planned maintenance procedures 2 maintenance schedules and records 3 steering gear manufacturer's instructions, specifications and recommended procedures 4 notices and instructions of relevant maritime authorities related to the maintenance of vessels
f Applicable legislation, regulations and codes may include:	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.
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