



Australian Government

Department of Education, Employment and Workplace Relations

TDMME707B USE ENGLISH IN WRITTEN AND ORAL FORM TO PERFORM ENGINEERING DUTIES

Revision Number: 1

TDMME707B USE ENGLISH IN WRITTEN AND ORAL FORM TO PERFORM ENGINEERING DUTIES

Modification History

Not applicable.

Unit Descriptor

UNIT DESCRIPTOR:

This unit involves the skills and knowledge required to use English in written and oral form to perform engineering duties on board a commercial vessel, including communicating with others; reading and interpreting engineering publications, specifications, instructions and other documents; reading and interpreting equipment performance indications, using available tools to communicate between the bridge, engine control room and main engine room; and using a computer to enter and retrieve engineering information.

Application of the Unit

Application of the unit	The unit has application in qualifications for Engineer Watchkeepers and Marine Engineers Classes 1 and 2, i.e. Diploma of Transport&Distribution(Marine Engineering - Engineer Watchkeeper), Advanced Diploma of Transport&Distribution(Marine Engineering Class 1) and Advanced Diploma of Transport&Distribution(Marine Engineering Class 2).
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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, describing requirements for a Chief Engineer on a vessel of unlimited propulsion power or more operating in international waters.
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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 Read, interpret and apply information in engineering publications and documentation	- a Engineering publications and other documentation used when performing engineering watchkeeping duties are read and correctly interpreted, and required information is extracted and appropriately applied to work activities in accordance with established marine engineering practice - b Information in engineering publications and other documentation used in day-to-day work is correctly accessed, read and interpreted and applied to work activities - c Engineering specifications and drawings are correctly read and interpreted, and the information applied during engineering duties in accordance with established marine engineering practice
ELEMENT	PERFORMANCE CRITERIA
2 Obtain, interpret and apply engineering information	- a Readings on gauges, instrumentation, computer screens and other performance indicators are correctly made and interpreted - b Engineering information, procedures, instructions and

ELEMENT	PERFORMANCE CRITERIA
during engineering duties	directions are obtained, interpreted and applied in the course of engineering duties c Standard drawing symbols and appropriate instrumentation and process control terms are correctly used when describing the actions and functions of marine equipment and plant d Engineering drawings and control loops are correctly sketched as required in the course of typical engineering duties e Engineering information is correctly entered into a computer using a keyboard and other relevant peripheral equipment f Engineering information is correctly accessed and retrieved from a computer using a keyboard and other relevant peripheral equipment g Engineering reports and completing running sheets and other engineering documentation relevant to the performance of engineering duties are correctly and accurately completed in English
3 Use tools to communicate between bridge, engine control room and main engine room	a The various available tools are correctly used to communicate between the bridge, engine control room and main engine room b Appropriate records of engineering communication are completed in accordance with company procedures and regulatory requirements
4 Communicate with officers, crew and others when performing engineering duties	a Written and verbal communication with others in the performance of officer's duties is clear and precise, uses established marine engineering vocabulary and follows established communication practice b Misunderstandings in English communication are avoided using appropriate confirmation techniques and established communication practice c Messages concerning vessel safety and operations involving written or verbal communication are read or received, clarified, correctly interpreted and applied to engineering

ELEMENT	PERFORMANCE CRITERIA
	activities
	d Appropriate techniques are used when communicating in English with multilingual crew to ensure that communication is effective and messages are clearly understood

ELEMENT	PERFORMANCE CRITERIA
4 Communicate with officers, crew and others when performing engineering duties (continued)	e Training, instruction and feedback on work performance is effectively provided to engine room crew in accordance with vessel procedures and established engineering practice f Various forms of non-verbal communication are appropriately used when working and communicating with others in the course of engineering duties

Required Skills and Knowledge

REQUIRED KNOWLEDGE

This describes the knowledge required for this unit.

- 1 National and international regulations, IMO Conventions and Codes, including AMSA Marine Orders applicable to the operation, maintenance and repair of plant, machinery and equipment on vessels of unlimited propulsion power
- 2 Relevant OH&S legislation, policies and procedures
- 3 Principles of effective communication
- 4 Standard nautical vocabulary as described in IMO Standard Marine Communication Phrases
- 5 Established written, verbal and non-verbal marine engineering communication practices
- 6 Protocols and procedures for communicating with others on board vessel
- 7 Established engineering practice for the operation, checking, maintenance and repair of marine plant, machinery, equipment and systems
- 8 Relevant OH&S and anti-pollution legislation, codes of practice, policies and procedures
- 9 Marine engineering communication techniques, including barriers to effective communication and how to overcome them
- 10 The various tools typically available for communication between the bridge, engine control room and main engine room
- 11 Relevant industrial award requirements as they relate to shipboard engineering personnel responsibilities, obligations and entitlements
- 12 Techniques for communicating effectively with a multilingual crew
- 13 Typical communication problems and appropriate action and solutions

REQUIRED SKILLS

This describes the basic skills required for this unit.

- 1 Give and receive verbal orders, instructions, and information provided by senior crew members

REQUIRED SKILLS

- 2 Read and interpret written orders, instructions, and information provided by senior crew members
- 3 Read and interpret engineering specifications and drawings
- 4 Read and interpret engineering information available through gauges, computer screens and various performance indicators
- 5 Use the standard nautical vocabulary as described in the IMO Standard Marine Communication Phrases publication
- 6 Recognise and interpret non-verbal communication
- 7 Interpret and apply established communication practices, including standard marine terms and phrases
- 8 Identify and solve problems and barriers that may arise during communication and take appropriate action based on available information
- 9 Communicate with multilingual crew where applicable using established techniques
- 10 Select and use appropriate communication and bridge equipment

Evidence Guide

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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.

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| 1 Critical aspects of evidence required to demonstrate competency in this unit | Assessment must confirm appropriate knowledge and skills to: <ol style="list-style-type: none">a Effectively and accurately communicate with others in English using written, verbal and non-verbal methodsb Use established marine engineering vocabulary when communicating with others on board a vesselc Read and interpret engineering publications, specifications, |
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Evidence Guide

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	instructions and other documents relevant to officer's duties d Use available tools to communicate between the bridge, engine control room and main engine room e Use a computer to enter and retrieve engineering information during duties f Use effective communication when providing training, instruction and feedback on work performance to engine room crew g Communicate effectively with multilingual crew when performing duties h Identify typical communication problems and take appropriate action
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: - obtaining, interpreting and applying information during engineering duties - communicating with others, including passengers, on board vessel during normal engineering duties and emergency situations - identifying and evaluating communication problems and determining appropriate courses of action - identifying and implementing improvements to communication methods - assessing the effectiveness of communication c Shows evidence of application of relevant workplace procedures, including: - relevant sections of maritime regulations

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- 2 OH&S regulations and hazard prevention policies and procedures
- 3 ISM Code safety management system procedures, quality procedures and work instructions on the operation of shipboard plant, machinery and equipment

Evidence Guide (continued)

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2 Evidence required for demonstration of consistent performance (continued)

- 4 job procedures and work instructions
- 5 relevant vessel manufacturer's instructions and specifications relating to shipboard plant, machinery and equipment and directions on equipment capability and limitations
- 6 environmental protection procedures
- d Action is taken promptly to report and/or rectify communication problems in accordance with statutory requirements and company 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

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

Evidence Guide (continued)

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	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 communicate effectively during engineering duties in a range of typical operational situations that may occur on board a vessel of unlimited propulsion power; and/or - b communicate during engineering duties on an operational commercial or training vessel of unlimited propulsion power

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

Range Statement

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a. Work must be carried out:	1 in compliance with mandatory rules and regulations and IMO Conventions and Codes, including the relevant sections of the AMSA Marine Orders, and ensuring that applicable codes, guidelines and standards recommended by IMO, the classification societies and maritime industry organisations are taken into account
b. Work is performed:	1 relatively independently within broad operational requirements, with limited accountability and responsibility for self and others in achieving the prescribed outcomes
c. Work involves:	1 the application of English communication principles and established marine engineering practice to the use and interpretation of engineering publications, manuals and instructions across a wide and often unpredictable variety of operational engineering contexts on board vessel. Defined accountability and responsibility for self and others in achieving the effective communication and understanding is involved
d. Work requires:	1 some responsibility for maintaining own ability and that of others to effectively use English in written and oral form, when performing engineering duties. This includes applications in the course of supervision and control of personnel, hazard minimisation, interpreting engineering performance of plant and equipment, and responding to operational situations and related decision making

2. WORKSITE ENVIRONMENT

Range Statement

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a Communication in English may be demonstrated:	1 during engineering duties on board any Australian or international commercial vessel
b Effective communication in English may be required:	1 by day or night in both normal and emergency situations 2 under any possible conditions of sea, weather and loading 3 while underway

Range Statement (continued)

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VARIABLE	SCOPE
b Effective communication in English may be required: (continued)	4 during berthing and unberthing operations 5 while anchoring or mooring 6 during engineering maintenance operations 7 when in dry dock
c Communication in English may include:	1 reading and interpreting engineering publications, instruction manuals and manufacturer's specifications 2 reading and interpreting engineering drawings and charts, including electric, electronic, pneumatic and hydraulic circuit diagrams and drawings 3 applying standard drawing symbols together with appropriate instrumentation and process control terms when describing the actions and functions of marine equipment and plant 4 orally giving and receiving information, instructions and

Range Statement (continued)

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	directions in the course of engineering duties 5 writing engineering reports and completing running sheets and other engineering documentation relevant to the performance of engineering duties 6 entering information into a computer using a keyboard and other relevant peripheral equipment 7 retrieving and printing information from a computer using a keyboard and other relevant peripheral equipment 8 sketching engineering drawings and engineering control loops as required in the course of typical engineering duties 9 using the various tools available to communicate between the bridge, engine control room and main engine room 10 providing training, instruction and feedback on work performance to engine room crew
d Documentation and records may include:	1 ISM Code safety management system plans, procedures, checklists and instructions 2 vessel's and company's planned operational and maintenance procedures and instructions 3 vessel's safety and emergency contingency plans and procedures, including relevant sections of the SOLAS Convention 4 anti-pollution and environmental protection regulations and procedures, including relevant sections of the MARPOL Convention 5 marine engineering publications and manuals

Range Statement (continued)

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VARIABLE	SCOPE
d Documentation and records may include: (continued)	6 machinery and vessel manufacturer's specifications, instructions and recommended procedures 7 vessel's survey as it relates to shipboard plant, equipment and machinery 8 relevant sections of national and international regulations, IMO Conventions and Codes, including AMSA Marine Orders and class society rules dealing with shipboard machinery maintenance and repair 9 operational and maintenance logs, running sheets and records, including computer databases of running information and maintenance records 10 instructions of relevant maritime authorities and classification societies concerning shipboard machinery operations, maintenance and repair
h Applicable legislation, regulations and codes may include:	1 relevant sections of national and international regulations, 2 MARPOL and SOLAS Conventions as they relate to engineering operations, maintenance and repair 3 relevant OH&S and anti-pollution legislation 4 relevant international, Commonwealth, State and Territory engineering standards

Unit Sector(s)

Not applicable.

Field

Field E Communication

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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