



Australian Government

Department of Education, Employment and Workplace Relations

TDMME507B TRANSMIT AND RECEIVE INFORMATION BY MARINE RADIO OR TELEPHONE

Revision Number: 1

TDMME507B TRANSMIT AND RECEIVE INFORMATION BY MARINE RADIO OR TELEPHONE

Modification History

Not applicable.

Unit Descriptor

UNIT DESCRIPTOR:

This unit involves the skills and knowledge required to transmit and receive information by marine radio or telephone on board a commercial vessel, including using marine VHF and HF radiotelephone in accordance with regulations, carrying out user maintenance and fault finding procedures on radio equipment and power supplies, and operating an emergency position indicating radio beacon (EPIRB) and a search and rescue transponder (SART).

Application of the Unit

Application of the unit	The unit has applications in qualifications for Coxswains and Masters of commercial vessels requiring proficiency in the use of marine radio and telephone equipment to transmit and receive information to and from shore and vessel-based operators.
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Licensing/Regulatory Information

Licensing/legislative requirements	The unit is consistent with the relevant maritime regulations and certification requirements as specified in <i>Marine Orders, Part 6, Marine Radio Qualifications, Issue 5</i>
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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 VHF and HF Radio equipment to transmit and receive messages	- a Types of radiotelephony equipment are selected and operated within limits of specifications - b Radio equipment is operated to transmit and receive various types of signal as per manufacturer's instructions, established radio operation procedures and regulatory requirements - c Regulations and procedures applicable to vessel stations equipped with radiotelephony and digital selective calling (DSC) facilities are applied during radio communication - d OH&S procedures and hazard control strategies are applied when operating radio equipment in accordance with vessel's ISM Code safety management system

ELEMENT	PERFORMANCE CRITERIA
2 Maintain and fault-find radio equipment	a Routine maintenance checks are carried out on radiotelephony equipment in accordance with manufacturer's instructions and specifications and company procedures
ELEMENT	PERFORMANCE CRITERIA
2 Maintain and fault-find radio equipment (continued)	- b Out-of-specification performance and faults in radio equipment are correctly identified and investigated using prescribed fault finding techniques as per established user maintenance procedures and manufacturer's instructions - c Identified faults and defective radio equipment and component parts are rectified or replaced as per manufacturer's instructions and established maintenance procedures
3 Access search and rescue radio facilities	- a Application is made to the appropriate organisation for the provision of the required search and rescue services - b Information required by AUSREP (Australian ship reporting) system is supplied in the required format
4 Deploy and operate an EPIRB and a SART	- a Routine checks are carried out on emergency position indicating radio beacons (EPIRBs) and search and rescue transmitters (SARTs) to confirm their operational capability in accordance with manufacturer's instructions and specifications - b Appropriate action is taken to rectify or replace EPIRBs or SARTs that are found to be malfunctioning or are inoperable in accordance with manufacturer's instructions and company procedures - c Emergency position indicating radio beacons (EPIRBs) and search and rescue transmitters (SARTs) are deployed as required in accordance with manufacturer's instructions and established search and rescue procedures

Required Skills and Knowledge

REQUIRED KNOWLEDGE

This describes the knowledge required for this unit.

- 1 Sections of relevant regulations related to marine radio communication
- 2 Different types of marine radio equipment, their features, applications, operating characteristics and operating procedures
- 3 Basic principles and procedures for marine radio communication
- 4 Purpose for and procedures for the monitoring of calling and working frequencies
- 5 Radio calling, replying and relaying procedures
- 6 Purpose of silence periods when operating radio equipment
- 7 Limitations on the performance of different types of marine radio equipment
- 8 Methods of communicating vessel position
- 9 Hazards associated with radio transmission and the repair and maintenance of radio equipment and related hazard control measures and OH&S regulations.
- 10 A basic understanding of the Australian marine search and rescue system
- 11 Procedures for the transmitting and decoding of the phonetic alphabet excluding the figure code
- 12 Operational checks, including:
 - a checking of radio performance
 - b testing fuses
 - c measuring capacity of batteries and the specific gravity of the electrolyte
 - d measuring on and off load voltage.

REQUIRED KNOWLEDGE

- 13 Typical radio equipment faults and defects and related fault finding techniques and remedial procedures
- 14 Procedures for deploying and operating EPIRBs and SARTs
- 15 Typical radio communication problems and appropriate action and solutions
- 16 Procedures for keeping records of radio communication

REQUIRED SKILLS

This describes the basic skills required for this unit.

- 1 Communicate effectively with others during radio communication
- 2 Read and interpret radio equipment instructions
- 3 Read and interpret marine radio regulations, rules and instructions
- 4 Use the phonetic alphabet
- 5 Keep records of radio communication
- 6 Work collaboratively with other shipboard personnel and passengers
- 7 Recognise typical faults and problems with radio equipment and take appropriate action
- 8 Adapt to changes in radio equipment and related procedures
- 9 Operate radio equipment in accordance with manufacturer's instructions
- 10 Conduct operational checks on radio equipment
- 11 Apply OH&S procedures and precautions when using and checking radio equipment

Evidence Guide

Evidence Guide
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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.

1 Critical aspects of evidence required to demonstrate competency in this unit	Assessment must confirm appropriate knowledge and skills to: - a Operate VHF and HF radio equipment to transmit and receive messages - b Maintain and fault-find radio equipment - c Access search and rescue radio facilities - d Deploy and operate an EPIRB and a SART - e Maintain records of radio communication
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 operating VHF and HF radio equipment to transmit and receive messages 2 maintaining and fault finding radio equipment 3 accessing search and rescue radio facilities 4 deploying and operating an EPIRB and a SART 5 identifying and evaluating radio communication problems and determining appropriate courses of action 6 maintaining records of radio communication - c Shows evidence of application of relevant workplace procedures, including: 1 relevant sections of maritime regulations pertaining to

Evidence Guide

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- radio operation
- 2 OH&S procedures and legislation
- 3 job procedures and work instructions
- 4 guidelines relating to the use of radio communication equipment
- d Action is taken promptly to report radio communication problems 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 between crew and others

Evidence Guide (continued)

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Context of 3 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

Evidence Guide (continued)
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4 Specific resources required for assessment

Access is required to opportunities to:

- a demonstrate performance in suitably simulated radio communication activities and exercises covering a range of normal and emergency radio communication situations that are typically experienced on a vessel; and/or
- b use radio communication in an appropriate range of operational situations on board an operational commercial or training vessel

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

a. Work must be carried out:	1 in compliance with the relevant sections of the Radio Regulations adopted by the World Administrative Radio Conference for the Mobile Service (1987), and maritime regulations
b. Work is performed:	1 relatively independently under broad operational requirements, with limited accountability and responsibility for self and others in achieving the prescribed outcomes

Range Statement

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c. Work involves:	1 the application of principles of marine radiotelephony to accurately transmit and receive messages. Use of correct procedures for transmitting and receiving of signals using HF and VHF equipment, as well as deployment and operation of satellite EPIRBs and SARTs is required. Limited accountability and responsibility for self and others in achieving the outcomes is involved
d. Work requires:	1 the accurate and consistent use and user maintenance of radio equipment to send and receive messages and signals under normal and emergency situations in accordance with international and national radio regulations

2. WORKSITE ENVIRONMENT

a Radio and radiotelephony communication may be carried out:	1 in both normal and emergency situations using shipboard HF and VHF radio equipment, Emergency Position Indicating Radio Beacons (EPIRBs) and SARTs
b Radio and radiotelephony communication may be carried out:	1 by day or night in both normal and emergency situations 2 under any possible conditions of weather 3 while underway 4 while anchored or moored

Range Statement (continued)
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VARIABLE	SCOPE
c Radio equipment may include:	1 radiotelephony transceiving equipment, including - i medium frequency/high frequency equipment (MF/HF) - ii very high frequency equipment (VHF) 2 digital selective calling (DSC) equipment 3 emergency position indicating radio beacon (EPIRB) 4 search and rescue transmitter (SART) 5 batteries 6 aerials 7 electrical and radio cable connections 8 electrical fuses
d Radio communication may include:	1 normal vessel-to-vessel service 2 normal vessel-to-shore service 3 on-demand service 4 auto seaphone service 5 auto seaphone 999 service 6 distress 7 urgency 8 safety 9 navigational

Range Statement (continued)
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	10 medical advice
	11 emergency position signals
e Organisations with whom radio communication may be conducted may include:	1 coast stations 2 limited coast stations 3 private shore stations 4 volunteer coast guard stations. 5 search and rescue coordination centre location and operator 6 state police forces 7 company bases 8 fishing organisations and cooperatives

Range Statement (continued)
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VARIABLE	SCOPE
f Available radio services may include:	1 medical advice services 2 search and rescue 3 AUSREP 4 public correspondence

Range Statement (continued)

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g EPIRB frequencies may include:	1 406 MHz 2 121.5/243 MHz
h Documentation and records may include:	1 sections of IMO STCW 95 Code concerning radio communication 2 sections of AMSA Marine Orders concerning radio communication 3 radiotelephony regulations 4 radio communication log 5 radio equipment manufacturer's specifications and instructions 6 records of radio communication
i Applicable legislation, regulations and codes may include:	1 relevant sections of maritime regulations 2 Radio Regulations adopted by the World Administrative Radio Conference for the Mobile Service (1987). 3 Australian radio communication legislation, including: - i Australian Communications Authority Act - ii Radiocommunications Act (1992) - iii Telecommunications Act - iv Telecommunications (Transitional Provisions&Consequential Amendments) Act

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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