



Australian Government

MARO003 Transmit and receive information by the global maritime distress and safety system

Release: 2

MARO003 Transmit and receive information by the global maritime distress and safety system

Modification History

Release 2. Change to RoC to include current terminology Mapping information has been corrected.

Release 1. New unit of competency.

Application

This unit involves the skills and knowledge required to transmit and receive information by global maritime distress and safety system (GMDSS) subsystems and equipment.

This unit applies to those in charge of or performing radio duties on a ship required to participate in the GMDSS.

This unit has links to legislative and certification requirements.

Pre-requisite Unit

Not applicable.

Competency Field

O – Watchkeeping

Unit Sector

Not applicable.

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

1 Operate GMDSS subsystems and equipment to send and receive messages

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|-----|---|
| 1.1 | GMDSS communication equipment is operated to send and receive various types of signals according to manufacturer instructions, established GMDSS procedures and regulatory requirements |
| 1.2 | GMDSS procedures appropriate for the sea area concerned are correctly applied according to regulatory requirements |
| 1.3 | Regulations and procedures applicable to vessel stations equipped with GMDSS communication equipment and digital selective calling facilities are applied during radio |

		communication
	1.4	Work health and safety/occupational health and safety (WHS/OHS) procedures and hazard control strategies are applied when operating radio equipment according to vessel International Management Code for the Safe Operation of Ships and for Pollution Prevention (ISM) Code safety management system
2 Maintain radio equipment	2.1	Routine maintenance checks are conducted on GMDSS equipment according to manufacturer specifications and organisational procedures
	2.2	Out-of-specification performance and faults are investigated using fault finding techniques
	2.3	Identified faults and defective equipment and component parts are rectified or replaced according to manufacturer specifications and organisational procedures
3 Provide radio services during emergencies	3.1	Emergencies are correctly identified according to organisational procedures
	3.2	Organisational procedures are conformed with when taking initial action on becoming aware of an emergency or abnormal situation
	3.3	Communications are established with others using GMDSS communication equipment to facilitate the emergency response process
	3.4	Contact is maintained at all times with others to keep them briefed on the emergency response process
	3.5	Radio procedures as defined in the international and national radio regulations and safety of life at sea (SOLAS) convention and the IAMSAR Manual are applied during the emergency
4 Maintain records	4.1	Records are completed and maintained as required according to regulatory and organisational requirements
	4.2	Relevant records are sent to appropriate bodies and copies are filed according to regulatory and organisational requirements
	4.3	Documents are stored according to regulatory and organisational requirements

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

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|---|---|
| GMDSS communication equipment must include: | <ul style="list-style-type: none">• antennas• batteries• digital selective calling (DSC) equipment• electrical and radio cable connections• electrical fuses• emergency position indicating radio beacon (EPIRB)• enhanced group calling (EGC) receiver• medium frequency/high frequency (MF/HF) equipment• Narrow Band Direct Printing (NBDP)• navigational telex (NAVTEX) receiver• search and rescue radar transponder r (RADAR-SART)• very high frequency (VHF) equipment• AIS search and rescue transmitter (AIS-SART) |
| Regulations must include: | <ul style="list-style-type: none">• IMO STCW 95 Code concerning radio communication• Australian Maritime Safety Authority (AMSA) Marine Orders• SOLAS Convention Chapter IV• ITU Radio• Regulations |
| Routine maintenance checks must include: | <ul style="list-style-type: none">• battery checks including specific gravity• equipment testing |
| Emergencies include one or more of the following: | <ul style="list-style-type: none">• abandon ship• assisting vessels in distress• fire on board ship• partial or full breakdown of radio installations• rescuing persons from the water |
| Records include one of the following: | <ul style="list-style-type: none">• radio communication log• records of radio communication |

Unit Mapping Information

This unit replaces and is equivalent to MARO5002A Transmit and receive information by the Global Maritime Distress and Safety System.

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=772efb7b-4cce-47fe-9bbd-ee3b1d1eb4c2>

Assessment Requirements for MARO003 Transmit and receive information by the global maritime distress and safety system

Modification History

Release 2. Change to Performance Evidence (PE) and Knowledge Evidence (KE) to include current terminology. Clarification of guidance information in PE, KE and Assessment Conditions.

Release 1. New unit of competency.

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least one occasion and include:

- applying work health and safety/occupational health and safety (WHS/OHS) procedures when operating GMDSS subsystems and equipment
- communicating effectively with others when using GMDSS subsystems and equipment
- conducting operational checks on GMDSS subsystems and equipment
- keeping records of radio communications
- operating GMDSS subsystems and equipment according to manufacturer instructions
- reading and interpreting instructions for the use of GMDSS subsystems and equipment
- recognising typical faults with GMDSS subsystems and equipment, and taking appropriate action
- using the international phonetic alphabet and figure code.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- basic principles and features of marine radio communications including:
 - correct use of frequencies, frequency bands and modes of emission
 - frequencies for routine call and reply
 - distress, urgency and safety communication
 - definition of coverage and sea areas for digital selective calling (DSC)
 - radio calling, replying and relaying procedures
 - purpose of silence periods when operating radio equipment
 - limitations on the performance of different types of marine radio equipment
 - purpose for and procedures for the monitoring of calling and working frequencies

- methods of communicating vessel position
- different types of marine radio equipment, their features, applications, operating characteristics and operating procedures
- hazards associated with radio transmission and the repair and maintenance of radio equipment and related hazard control measures
- international and national radio regulations applicable to mobile marine communication
- maintenance strategies and requirements for GMDSS equipment as defined in the International Convention for the Safety of Life at Sea (SOLAS) and Radio Regulations and STCW
- means to prevent the transmission of false distress alerts
- operational checks including checking radio performance; testing fuses; measuring capacity of batteries and the specific gravity of the electrolyte; measuring on and off load voltage
- principles of radio propagation including:
 - basic propagation mechanisms at LF, MF, HF and VHF
 - maximum usable frequency (MUF)
 - optimum working frequency (OWF)
 - frequency bands
 - classes of emission
 - duplex, simplex paired frequencies and ITU channels
- procedures for:
 - keeping records of radio communication
 - transmitting and decoding the international phonetic alphabet and figure code
 - using various GMDSS systems and services including Inmarsat services (B, C, M); enhanced group calling system (EGC); MF/HF radio with NBDP; DSC facilities and usage; EGC receiver; maritime safety information (MSI) services; navigational telex (NAVTEX) system; SafetyNET system
- prohibitions on connecting non-GMDSS equipment to reserve source of supply
- radio communication problems and appropriate actions and solutions
- radio equipment faults, defects and related fault finding techniques
- requirements of ship reporting systems
- types, applications and features of basic antenna systems used in marine radio communications
- use of radio medical services.

Assessment Conditions

Assessors must satisfy National Vocational Education and Training Regulator (NVR)/Australian Quality Training Framework (AQTF) assessor requirements.

Assessment must satisfy the National Vocational Education and Training Regulator (NVR)/Australian Quality Training Framework (AQTF) standards.

Assessment must occur in workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated workplace operational situations that reflect workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- tools, equipment, machinery, materials and personal protective equipment currently used in industry
- applicable documentation such as legislation, regulations, codes of practice, workplace procedures and operational manuals
- range of relevant exercises, case studies and/or simulations.

Links

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