



Australian Government

MARO011 Transmit and receive information by the Global Maritime Distress and Safety System (GMDSS)

Release: 1

MARO011 Transmit and receive information by the Global Maritime Distress and Safety System (GMDSS)

Modification History

Release 1. This is the first release of this unit of competency in the MAR Maritime Training Package.

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 people performing radio duties on a ship required to participate in the GMDSS.

This unit applies to people working in the maritime industry in the capacity of:

- Master of a commercial vessel less than 500 gross tonnage (GT)
- Master of a commercial vessel Unlimited
- Watchkeeper Deck.

Licensing/Regulatory Information

This unit is equivalent and delivers the objectives of the following STCW provisions:

- STCW Reg IV/2 and Code Section A-IV/2, Table A-IV/2.

Legislative and regulatory requirements are applicable to this unit.

- This unit is one of the requirements to obtain Australian Maritime Safety Authority (AMSA) certification as a Master of a commercial vessel less than 500 gross tonnage (GT), Master Unlimited or Watchkeeper Deck and to meet regulatory requirements this unit must be delivered consistent with Marine Orders and with the relevant sections of the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW).
- Those regulatory requirements include STCW International Maritime Organization (IMO) model course competencies and areas of knowledge, understanding and proficiency, together with the estimated total hours required for lectures and practical exercises. Teaching staff should note that timings are suggestions only and should be adapted to suit individual groups of trainees depending on their experience, ability, equipment and staff available for training.

Pre-requisite Unit

Not applicable.

Competency Field

O – Watchkeeping

Unit Sector

Not applicable.

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

PERFORMANCE CRITERIA

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

1 Operate GMDSS subsystems and equipment to send and receive messages

- 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 (WHS)/occupational health and safety (OHS) procedures and hazard control strategies and the application of the International Safety Management (ISM) Code are applied

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

- 3.1** Emergencies are correctly identified according to organisational procedures
- 3.2** Organisational procedures are conformed with when taking initial actions in the event 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 Telecommunications Union (ITU), International Convention for the Safety of Life at Sea (SOLAS) and the International Aeronautical and Maritime Search and Rescue (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

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.

Unit Mapping Information

This unit replaces and is equivalent to MARO003 Transmit and receive information by the global maritime distress and safety system.

Links

Companion Volume implementation guide can be found in VetNet -
<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=772efb7b-4cce-47fe-9bbd-ee3b1d1eb4c2>

Assessment Requirements for MARO011 Transmit and receive information by the Global Maritime Distress and Safety System (GMDSS)

Modification History

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Performance Evidence

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

- applying work health and safety/occupational health and safety (WHS/OHS) procedures when operating Global Maritime Distress and Safety System (GMDSS) subsystems and equipment
- communicating effectively with others when using GMDSS subsystems and equipment
- conducting operational checks on GMDSS subsystems and equipment
- keeping a radio logbook of communications using the GMDSS equipment, including the required regulatory entries into the radio logbook
- operating GMDSS subsystems and equipment according to manufacturer instructions
- performing routine maintenance checks, including:
 - antennas
 - battery checks
 - equipment testing
- 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 numeral code.

Knowledge Evidence

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

- different types of marine radio equipment, their features, applications, operating characteristics and operating procedures
- GMDSS components
- GMDSS procedures in response to emergency situations, such as abandon ship, fire, persons in survival craft or piracy at sea
- hazards associated with radio transmission and the repair and maintenance of radio equipment and related hazard control measures

- identification of radio stations
- international and national radio regulations applicable to GMDSS communications, including Australian Maritime Safety Authority (AMSA) Marine Orders, International Telecommunications Union (ITU) and the International Convention for the Safety of Life at Sea (SOLAS) Chapter IV
- maintenance strategies and requirements for GMDSS equipment as defined in SOLAS, radio regulations and the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW)
- means to prevent the transmission of false distress alerts
- miscellaneous skills and operational procedures for general communications
- operational checks, including checking radio performance, measuring capacity of batteries, and measuring on and off load voltage
- principles and features of marine radio communications, including:
 - correct use of frequencies, frequency bands and modes of emission
 - definition of coverage and sea areas for digital selective calling (DSC)
 - distress, urgency and safety communication
 - frequencies for routine call and reply
 - limitations on the performance of different types of marine radio equipment
 - methods of communicating vessel position
 - purpose of and procedures for the monitoring of calling and working frequencies
 - purpose of silence periods when operating radio equipment
 - radio calling, replying and relaying procedures
- principles of radio propagation, including:
 - basic propagation mechanisms at low frequency (LF), medium frequency (MF), high frequency (HF) and very high frequency (VHF)
 - classes of emission
 - duplex, simplex paired frequencies and ITU channels
 - frequency bands
 - maximum usable frequency (MUF)
 - optimum working frequency (OWF)
- procedures for:
 - international phonetic alphabet and numeral code
 - keeping records of radio communication
 - using various GMDSS systems and services, including:
 - current inmarsat services enhanced group calling (EGC) system
 - MF/HF radio with narrow band direct printing (NBDP)
 - DSC facilities and usage
 - Enhanced group call (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
- role and method of use of ship reporting systems
- search and rescue (SAR) operation
- service publications
- statutory framework of the Maritime Mobile Service
- systems used onboard, including:
 - automatic identification system (AIS)
 - ship security alert system
 - ultra-high frequency (UHF) handhelds
- types, applications and features of basic antenna systems used in marine radio communications
- use of radio medical services.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

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.

Practical assessment must occur in a workplace, or realistic simulated workplace, under the normal range of workplace conditions.

Simulations and scenarios may be used where situations cannot be provided in the workplace or may occur only rarely, in particular for situations relating to emergency procedures and adverse weather conditions where assessment would be unsafe, impractical or may lead to environmental damage.

Resources for assessment must include access to:

- applicable documentation, such as legislation, regulations, codes of practice, workplace procedures and operational manuals
- tools, equipment, machinery, materials and relevant personal protective equipment (PPE) currently used in industry, including GMDSS communication equipment.

Links

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