South African
Maritime Safety Authority

Marine Notice No. 23 of 2006

GMDSS (GOC) Certificates of Competency

TO TRAINING INSTITUTIONS, SHIPOWNERS, MASTERS, SHIP'S OFFICERS, SAMSA EXAMINERS AND PRINCIPAL OFFICERS

Summary

This marine notice sets out requirements for the examination of candidates for the GMDSS (GOC) (Global Maritime Distress and Safety System, General Operator's Certificate). It introduces a standardised form of training and a standardised syllabus for training providers approved to offer such training. It also introduces refresher requirements for persons who do not qualify for "automatic" re-validation of the GMDSS (GOC).

1 The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978 (the "STCW Convention"), Chapter IV, Regulation IV/2 requires all persons in charge of or performing radio duties on a ship operating in the GMDSS to hold appropriate operator certification issued or recognised by the ship's flag state. For certification, a person is required to complete approved training and meet the standard of competence specified in Section A-IV/2 of the STCW Code.

2 In the past local training for the GMDSS (GOC) has not been subject to SAMSA approval. But this has changed recently because of amendments to the SAMSA-issued *Code for South African Maritime Qualifications* adopted on 14 June 2006 by the syllabus committee appointed in terms of regulation 8 of the *Merchant Shipping (Training and Certification) Regulations 1999*. The new standards are set out in Annex 1 to this marine notice.

3 In future only GMDSS (GOC) training conducted by SAMSA-accredited training providers will be accepted for certification purposes. Existing training providers have six months from the date of this marine notice to obtain the appropriate SAMSA accreditation. Accreditation will be conducted by SAMSA-appointed examiners and radio surveyors in accordance with regulation 67 of the *Merchant Shipping (Training and Certification) Regulations 1999*.

Revalidation

4 Regulation I/11 of the STCW Convention requires every person holding a certificate as a radio operator to revalidate their certificate every five years in accordance with Section A-I/11 of the STCW Code. Provision is also made for appropriate refresher training.

Automatic revalidation

5 South African policy on revalidation for persons holding a GMDSS (GOC) is automatic revalidation if the candidate has served in any of the following capacities:

.1 a radio surveyor appointed by SAMSA/ICASA;

.2 a coastal radio station operator employed by Telkom, if the person operates GMDSS equipment;

.3 a technician employed in the day to day maintenance, installation or repair of GMDSS equipment;

.4 a seafarer who has at least one year's seagoing service as a radio operator on vessels fitted with GMDSS equipment.

Refresher training

6 Candidates for revalidation who cannot meet the requirements in 5 above are required to complete SAMSA-approved refresher training in accordance with the standards set out in Annex 2 to this marine notice. These standards, which now form part of the *Code for South African Maritime Qualifications*, were adopted on 14 June 2006 by the syllabus committee appointed in terms of regulation 8 of the *Merchant Shipping (Training and Certification) Regulations 1999*.

7 The terminal examination for refresher training is the same as that for the full GMDSS (GOC), except that questions relating to the propagation of radio waves, frequencies and general theory may be omitted. Candidates have only one attempt to successfully complete refresher training, and candidates who are not successful are required to complete the full GMDSS (GOC) course.

8 Existing training providers offering GMDSS (GOC) refresher training have six months from the date of this marine notice to obtain the appropriate SAMSA accreditation.

Issue of certification

9 The GMDSS (GOC) is issued by ICASA. Upon successful completion of the examination and assessment process, SAMSA will forward a candidate's results to ICASA for issuing of the appropriate certification.

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ANNEX 1 - GMDSS (GOC)

Column 1	Column 2	Column 3	Column 4
COMPETENCE	KNOWLEDGE, UNDERSTANDING AND PROFICIENCY	METHODS FOR DEMONSTRATING COMPETENCE	CRITERIA FOR EVALUATING COMPETENCE
	MODULE 1		
Knowledge of the basic features of the Maritime Mobile Service and the Maritime Mobile-Satellite Service	1 General principles and basic features of the GMDSS system 1.1 Distress, urgency and safety communications. 1.2 Public correspondence 1.3 Port operations and ship movement services 1.4 Intership communications 1.5 On-board communications 2 Types of stations in the GMDSS system. 2.1 Ship stations 2.2 Coast stations 2.3 Pilot stations, port stations etc. 2.4 Aircraft stations 2.5 Rescue co-ordination stations 3 Elementary knowledge of frequencies and frequency bands 3.1 The concept of frequency 3.2 The equivalence between frequency and wavelength 3.3 The unit frequency: Hz, kHz, MHz, GHz 3.4 The sub-division of most significant part of the radio spectrum MF, HF, VHF, UHF, SHF 4 Characteristics of frequencies. 4.1 Different propagation mechanisms: propagation in free space, ground wave ionospheric propagation 4.2 Propagation of MF frequencies 4.3 Propagation of different HF frequencies 4.4 Propagation of VHF and UHF frequencies 5 Knowledge of the role of various modes of communication 5.1 DSC 5.2 Radiotelephony 5.3 NBDP, (Narrow Band Direct Printing) 5.4 Facsimile 5.5 Data 5.6 Morse telegraphy 6 Elementary knowledge of different types of modulation and classes of emission 6.1 Classes of emission 6.2 Carrier frequency and assigned frequency 6.3 Bandwidth of different emissions 6.4 Official designations of emissions (e.g. F1B, J3E, A3E, AIA etc.) 6.5 Unofficial designations of emissions (e.g. TLX, SSB, AM, CW etc.) 7 Frequencies allocated to GMDSS system	By completion of approved education and training and written theoretical examination Assessment of evidence obtained from written examination.	The general principles and basic features of the Maritime Mobile Service and the Maritime Mobile-Satellite Service are understood. The use of the English language for use of the GMDSS system is sufficient for the intended use of the required equipment. Basic principles of radio propagation, frequencies and different mechanisms are understood The general principles and basic features of the different satellite systems are understood. The theory of aerials and maintenance is understood The different types of batteries and the maintenance thereof are understood

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COMPETENCE	KNOWLEDGE, UNDERSTANDING AND PROFICIENCY	METHODS FOR DEMONSTRATING COMPETENCE	CRITERIA FOR EVALUATING COMPETENCE
	MODULE 1		
	7.1 The usage of MF, HF, VHF, UHF and SHF frequencies in the GMDSS system 7.2 The concept of radio channel. Simplex, semi-duplex, duplex. Paired and unpaired frequencies 7.3 Frequency plans and channelling systems 7.3.1 HF telephony 7.3.2 VHF telephony 7.3.3 HF NBDP 7.3.4 MF telephony and NBDP for Region 1 7.3.5 GMDSS distress and safety frequencies 7.3.6 Distress and safety frequencies of the non–GMDSS system 7.3.7 Calling frequencies 8 General principles and basic features of the Maritime Mobile-Satellite Service 8.1 Basic knowledge of satellite communications 8.1.1 INMARSAT Space segment 8.1.2 Modes of communication (i) Telex services (ii) Telephone services (iii) Data and facsimile communications (iv) Store and forward operation 8.1.3 Distress and safety communication 8.1.4 INMARSAT-A/B communication services 8.1.5 INMARSAT-C communication services 8.1.6 INMARSAT-EGC system 8.1.7 INMARSAT-M/Fleet 77 communication services 8.2 Types of station in the mobile-satellite services 8.2.3 Coast Earth stations 8.2.4 Network Co-ordination Stations 8.2.5 Ship earth Stations 9 Antennas 9.1 Isolators 9.2 VHF whip antennas 9.3 MF/HF whip antennas 9.4 MF/HF wire antennas 9.5 Satellite antennas 9.6 Calculation of antenna length 10 Batteries 10.1 Different kinds of batteries and their characteristics 10.2 Charging of batteries 10.3 Maintenance of batteries 10.4 UPS systems 10.5 Maintaining a battery logbook		

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COMPETENCE	KNOWLEDGE, UNDERSTANDING AND PROFICIENCY	METHODS FOR DEMONSTRATING COMPETENCE	CRITERIA FOR EVALUATING COMPETENCE
	MODULE 2		
Detailed practical knowledge and ability to use the basic equipment of the ship station	1 Watchkeeping receivers 1.1 The controls and usage of VHF DSC watch receiver 1.2 The controls and usage of MF DSC watch receiver and MF/HF DSC watch receiver 2 VHF Radio Installation 2.1 Channels 2.2 Controls 2.3 Usage 2.4 DSC 3 MF/HF radio installation 3.1 Frequencies 3.2 Typical controls and usage: 3.2.1 connecting the power 3.2.2 selecting the RX frequency 3.2.3 selecting the TX frequency 3.2.4 selecting the ITU channel number 3.2.5 tuning the transmitter 3.2.6 selecting the class of emission 3.2.7 using volume control and squelch 3.2.8 using clarifier or RX fine tuning 3.2.9 controlling RF gain 3.2.10 using automatic gain control 3.2.11 using the 2182 kHz instant selector 3.2.12 testing the 2182 alarm generator 3.2.13 using the 2182 alarm generator 4 Digital Selective Calling 4.1 Call format specifier 4.1.1 distress call 4.1.2 all ships call 4.1.3 call to individual station 4.1.4 geographic area call 4.1.5 group call 4.1.6 automatic/semi automatic service 4.2 Call address selection with the MMSI number 4.2.1 the nationality identification 4.2.2 group calling identities 4.2.3 coast station identities 4.2.4 ship station identities 4.3 Call categorisation 4.3.1 Distress 4.3.2 Urgency 4.3.3 Safety 4.3.4 other communications 4.4 Call telecommand and traffic information 4.4.1 distress alerts 4.4.2 other calls	By completion of approved education and training, written theoretical examination and assessment of evidence obtained from approved simulator training	The use of the basic equipment of the entire the Maritime Mobile Service and the Maritime Mobile-Satellite Service system and demonstrates a thorough knowledge and ability to use the basic equipment of a ship station. Basic fault finding of radio equipment is understood and rectified.

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	MODULE 2		
	4.4.3 working frequency information 4.5 Test calls 5 Knowledge of the general principles of NBDP and Radio Telex systems. 5.1 NBDP systems 5.1.1 Automatic systems 5.1.2 Semi-automatic systems 5.1.3 Manuel systems 5.1.4 ARQ mode 5.1.5 FEC mode 5.1.6 ISS/ISR arrangement 5.1.7 Master and slave 5.1.8 Radio telex numbering system 5.1.9 Answerback 5.2 Radio Telex equipment 5.2.1 Controls and indicators 5.2.2 Keyboard operation 6 Knowledge and usage of INMARSAT systems. 6.1 INMARSAT-A/B Ship Earth station 6.1.1 Satellite acquisition 6.1.2 Telex services 6.1.3 Telephone services 6.1.4 Data and facsimile communications 6.2 INMARSAT EGC Receiver 6.2.1 Pre-programming an SES for EGC message reception 6.2.2 Selecting operating mode for EGC reception 6.3 INMARSAT-C Ship Earth station 6.3.1 Components of an INMARSAT-C terminal 6.3.2 Entering/updating position 6.3.3 Usage of an INMARSAT-C Ship Earth station 6.3.4 Sending and receiving text messages 7 Fault locating Proficiency in elementary fault localisation by means of built in measuring instruments or software in accordance with the equipment manuals. Elementary fault repair such as replacement of fuses, indicator lamps and the like.		

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	MODULE 3		
Detailed practical knowledge and ability to use the GMDSS system and sub-systems.	1 Global Maritime and Distress Safety System (GMDSS) 1.1 Sea Areas and the GMDSS Master Plan 1.2 Watchkeeping on distress frequencies as defined in the Radio Regulations, the SOLAS Convention and the STCW Convention. 1.3 Functional requirements of ships stations 1.4 Carriage requirements of ships stations 1.5 Sources of energy of ship stations including emergency sources of energy 1.6 Means of ensuring availability of ship station equipment 1.7 Licences, radio safety certificates, radio operator certificates, inspections and surveys 2 IMARSAT usage in the GMDSS 2.1 INMARSAT-A/B/Fleet 77 Ship Earth Station 2.1.1 Distress Communications. (i) Use of the distress facility (ii) Satellite acquisition (iii) Satellite acquisition (iv) Telex and telephony distress calls (v) Procedures for distress calls (vi) Rescue Co-Ordination Centres associated with Coast Earth Stations 2.2 INMARSAT-C Ship Earth Station 2.2.1 Distress and Safety Services (i) Sending a distress alert (ii) Sending a distress priority message (iii) The INMARSAT-C safety services (iv) 2-digit code safety services 2.3 INMARSAT EGC 2.3.1 Purpose of the EGC system 2.3.2 All ships messages and INMARSAT system messages 2.3.3 Classes of INMARSAT-C SES and their EGC reception 3 NAVTEX 3.1 The NAVTEX system 3.1.1 Purpose of NAVTEX 3.1.2 NAVTEX frequencies 3.1.3 Reception range 3.1.4 Message format (transmitter ID, message type, message number) 3.2 NAVTEX receiver 3.2.1 Selection of transmitters 3.2.2 Selection of message type 3.2.3 Messages which cannot be rejected 3.2.4 Use of subsidiary controls and changing paper	By completion of approved education and training, written theoretical examination and assessment of evidence obtained from approved simulator training.	The use of the basic equipment of the entire the Maritime Mobile Service and the Maritime Mobile-Satellite Service and sub systems and demonstrated by a thorough knowledge and ability to use the GMDSS equipment of a ship station. The appropriate local and international legislation and certification appertaining to GMDSS is understood The use and testing of all safety and distress equipment is understood. Communications with non-SOLAS vessels is demonstrated and understood The role of the RCCs is understood

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	MODULE 3		
	4 Emergency Position Indicating Radio Beacons (EPIRBs) 4.1 Satellite EPIRBs 4.1.1 Basic characteristics of operation on 406 MHz 4.1.2 Basic characteristics of operation on 1.6 GHz 4.1.3 Basic characteristics of operation on 121.5 MHz including homing functions 4.1.4 Information contents of a distress alert 4.1.5 Manual usage 4.1.6 Float-free function 4.1.7 Routine maintenance (i) Testing (ii) Checking battery expiry date (iii) Checking the hydrostatic release mechanism expiry date 4.2 VHF-DSC-EPIRB 4.2.1 Basic characteristics of operation on CH70 5 Search and Rescue Transponder (SART) 5.1 The main technical characteristics 5.2 Operation 5.3 Range of a SART transmitter 5.4 Routine maintenance of a SART 6 Portable VHF R/T apparatus 6.1 The main technical characteristics 6.2 Operation 6.3 Range of a VHF transmitter 6.4 Routine maintenance of a portable VHF transceiver 6.5 Expiry dates of Lithium batteries 7 Distress, urgency and safety communication procedures in the GMDSS distress communications 7.1 DSC distress alert 7.1.1 The definition of a distress alert 7.1.2 Transmission of a distress alert 7.1.3 Transmission of a shore to ship distress alert relay 7.1.4 Transmission of a ship to shore distress alert relay 7.1.5 Transmission of a distress alert by a station not itself in distress 7.2 Receipt and acknowledgment of a DSC distress alert 7.2.1 Acknowledgement procedure by radiotelephony 7.2.2 Acknowledgement procedure by NBDP 7.2.3 Receipt and acknowledgement by a Coast station and problems associated with DSC acknowledgement 7.2.4 Receipt and acknowledgement by a ship station 7.3 Handling of distress alerts 7.3.1 Preparations handling distress traffic 7.3.2 Distress traffic terminology		

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	MODULE 3		
	7.4 Testing DSC distress and safety call 7.5 Cancelling false distress alerts 7.6 On-scene communications 7.7 SAR operation 7.8 Urgency and safety communications 7.8.1 The meaning of urgency and safety communications 7.8.2 Procedures for DSC urgency and safety calls 7.8.3 Urgency communications 7.8.4 Radio medical services 7.8.5 Medical transports 7.8.6 Safety communications 7.9 Reception of marine safety information (MSI) 7.9.1 Reception by NAVTEX 7.9.2 Reception by INMARSAT EGC 7.9.3 Reception by HF NBDP 7.9.4 The navigational warning system of the old distress and safety system 7.9.5 The navigational warnings transmitted by radiotelephony 7.10 Protection of distress frequencies 7.10.1 Guard Bands 7.10.2 Tests on distress frequencies 7.10.3 Transmissions during distress traffic 7.10.4 Avoiding harmful interference 7.10.5 Prevention of unauthorised transmissions 7.11 Distress, urgency and safety communication with non-SOLAS ships which use only radiotelephony 7.11.1 Distress signal 7.11.2 Distress call 7.11.3 Distress message 7.11.4 Acknowledgement of a distress message 7.11.5 Distress traffic terminology 7.11.6 Transmission of a distress message by a station in itself in distress 7.11.7 Urgency signal 7.11.8 Medical advice 7.11.9 Safety signal 7.12 Search and rescue operation (SAR) 7.12.1 The role of RCCs 7.12.2 Maritime Search and Rescue Manuel (IAMSAR) 7.12.3 Maritime rescue organisations 7.12.4 Ship reporting systems		

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	MODULE 4		
Miscellaneous skills and operational procedures for general communications	1 Ability to use the English language, both written and spoken, for the satisfactory exchange of communications relevant to the safety of life at sea 1.1 Use of International Code of Signals and the IMO Standard Marine Communication Phrases 1.2 Recognised standard abbreviations and commonly used service codes 1.3 Use of international phonetic alphabet 2 Obligatory procedures and practices 2.1 Effective use of obligatory documents and publications 2.2 Radio record keeping 2.3 Knowledge of the regulations and agreements governing the maritime mobile service and the mobile satellite service 3 Practical and theoretical knowledge and general communication procedures. 3.1 Selection of appropriate communication methods in different situations 3.2 Traffic lists 3.3 Radio telephone call 3.3.1 Method of calling a coast station by radiotelephony 3.3.2 Ordering a manually switched link call 3.3.3 Ending the call 3.3.4 Special facilities of calls 3.3.5 Method of calling a coast station by DSC 3.3.6 Selecting an automatic radiotelephone call 4 Traffic charges 4.1 International charging system 4.2 INMARSAT communication charging system 4.3 AAIC code 4.4 The meaning of land line charge (LL), coast station charges (CC). 4.5 Currencies used in international charging 5 Practical traffic routines 6 World geography, especially the principal shipping routes and related communication routes.	By completion of approved education and training, written theoretical examination and assessment of evidence obtained from approved simulator training.	The use of the English language for use of the Maritime Mobile Service and the Maritime Mobile-Satellite Service is sufficient for the intended use of the required equipment. The candidate shows ability to communicate in both the written and spoken form of the English language relevant to the safety of life at sea. Obligatory procedures and practices with respect to record-keeping are understood

ANNEX 2 - GMDSS (GOC) REFRESHER

Column 1	Column 2	Column 3	Column 4
COMPETENCE	KNOWLEDGE, UNDERSTANDING AND PROFICIENCY	METHODS FOR DEMONSTRATING COMPETENCE	CRITERIA FOR EVALUATING COMPETENCE
	MODULE 1		
Know the recent changes and advances and changes in the GMDSS system. Detailed practical knowledge and ability to use the basic equipment of the ship station. Detailed practical knowledge and ability to use the GMDSS system and sub-systems.	1 Watchkeeping receivers 2 MF/HF radio installation 3 Digital Selective Calling 4 Test calls 5 Knowledge of the general principles of NBDP and Radio Telex systems. 6 Knowledge and usage of INMARSAT systems. 7 Fault locating 8 Global Maritime and Distress Safety System (GMDSS) 9 IMARSAT usage in the GMDSS 10 NAVTEX 11 Emergency Position radio indicating Beacons (EPIRBs) 12 Search and Rescue Transponder (SART) 13 Distress, urgency and safety communication procedures in the GMDSS distress communications	By completion of approved education and training, written theoretical examination and assessment of evidence obtained from approved simulator training on a course of at least 3 days duration excluding the final assessment.	The use of the basic equipment of the entire GMDSS system and demonstrated through knowledge and ability to use the basic equipment of a ship station. The use of the English language for use of the GMDSS system is sufficient for the intended use of the required equipment Basic fault finding of radio equipment is understood and rectified The use of the basic equipment of the entire GMDSS system and demonstrated through knowledge and ability to use the GMDSS equipment of a ship station. The appropriate local and international legislation and certification appertaining to GMDSS is understood The use and testing of all safety and distress equipment is understood. Communications with non-SOLAS vessels is demonstrated and understood The role of the RCCs is understood

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MODULE 2			
Miscellaneous skills and operational procedures for general communications	1 Ability to use the English language, both written and spoken, for the satisfactory exchange of communications relevant to the safety of life at sea 2 Obligatory procedures and practices 3 Practical and theoretical knowledge and general communication procedures 4 Traffic charges	As per module 1	Candidate shows ability to communicate in both the written and spoken form of the English language relevant to the safety of life at sea. Obligatory procedures and practices with respect to record-keeping are understood