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MSC.1/Circ.803/Rev.1
16 May 2022

**PARTICIPATION OF NON-SOLAS SHIPS IN THE
GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS) AND
GUIDANCE ON THE DEVELOPMENT OF TRAINING MATERIALS FOR
GMDSS OPERATORS ON NON-SOLAS SHIPS**

1 The Maritime Safety Committee, at its 105th session (20 to 29 April 2022), having considered a proposal by the Sub-Committee on Navigation, Radiocommunications and Search and Rescue (NCSR), at its eighth session (19 to 23 April 2021), approved the revised:

- .1 *Guidelines for the participation of non-SOLAS ships in the GMDSS; and*
- .2 *Guidance on the development of training materials for GMDSS operators on non-SOLAS ships,*

as set out in annexes 1 and 2, respectively.

2 This circular is intended to assist Administrations with developing national measures aimed at facilitating participation of ships in the GMDSS and ships to which chapter IV of the 1974 SOLAS Convention and chapter IV of the 1978 STCW Convention do not apply (herein in the annex referred to as "non-SOLAS ships").

3 Member Governments are invited to apply the Guidelines set out in annex 1 to non-SOLAS ships insofar as they deem them reasonable and practicable.

4 Member Governments are also invited to take into consideration the Guidance set out in annex 2 when developing training materials for GMDSS operators on non-SOLAS ships.

5 This circular supersedes MSC/Circ.803, as from 1 January 2024.

ANNEX 1

GUIDELINES FOR THE PARTICIPATION OF NON-SOLAS SHIPS IN THE GMDSS

1 Every ship while at sea should maintain, when practicable, a continuous listening watch, which shall be kept at the position from which the ship is normally navigated on:

- .1 VHF channel 16; and
- .2 appropriate frequency or frequencies for urgency and safety communications for the area in which the ship is navigating.

2 The following functional requirements of the GMDSS are considered appropriate to allow effective participation of non-SOLAS ships in the GMDSS with respect to distress and safety communications to:

- .1 provide safety for own ship:
 - .1 transmitting ship-to-shore distress alerting;
 - .2 transmitting ship-to-ship distress alerting;
 - .3 transmitting and receiving on-scene communications including appropriate SAR coordinating communications;
 - .4 receiving navigational and meteorological warnings and urgent information;
 - .5 transmitting and receiving communications relating to the navigation, movements and needs of ships;
 - .6 transmitting and receiving urgency and safety radiocommunications; and
 - .7 transmitting locating signals;
- .2 assist other ships in distress:
 - .1 receiving shore-to-ship distress alert relays;
 - .2 receiving ship-to-ship distress alerting; and
 - .3 receiving urgency and safety radiocommunications.

3 If a non-SOLAS ship carries VHF DSC or MF/HF DSC equipment with a radiotelephone capability operating on GMDSS frequencies or a ship earth station (SES) of a recognized mobile satellite service, such equipment can be utilized to perform most of the functions described above.

4 The use of cellular telephones is not recommended as an alternative to GMDSS distress and safety communications. Geographical coverage limitations and availability of cellular communications infrastructure could prevent an RCC or nearby ships from being alerted to a distress or safety situation. Also, RCCs will be unable to call ships in the vicinity of a casualty.

5 It should further be made clear that the use of the amateur radio service is not recommended as an alternative to GMDSS distress and safety communications. Furthermore, the use of equipment for the amateur radio service, despite being comparatively cheap and able to perform some voice and data communications, is subject to acceptance by the Administration in order to protect the service.

6 It is recommended that non-SOLAS ships should carry an EPIRB with a built-in GNSS receiver, which is floating free or can be manually activated. Every type of EPIRB should be certified by Cospas-Sarsat.

7 It is further recommended that non-SOLAS ships should carry VHF DSC equipment, and either an MF/HF DSC or SES equipment when operating beyond the range of VHF coast stations, for general radiotelephone communications. This will ensure that radio systems are installed and operational appropriate to areas of operation for the ship.*

8 In performing the functional requirement of transmitting locating signals, either a search and rescue transponder (radar SART) operating on radar frequencies in the band 9.2-9.5 GHz or an AIS search and rescue transmitter (AIS-SART) will be the main means to fulfil this requirement in the GMDSS.

9 Provision should be made for the reception of navigational warnings, meteorological forecasts and warnings and urgent safety information, depending on the sea area in which the non-SOLAS ship is sailing¹ and the services available in that area, e.g. NAVTEX, enhanced group call (EGC) and radiotelephony broadcasts.

10 Non-SOLAS ships operating in high sea areas are invited to participate in the World Meteorological Organization (WMO) Voluntary Observing Ships (VOS) Scheme in order to provide vital real-time feedback on ocean weather conditions to weather forecasters to improve the quality of the forecasts and warnings issued within the GMDSS.

11 Ship identities (MMSI, call sign, EPIRB hexadecimal identity and recognized mobile satellite service identity, etc.) for non-SOLAS ships should be reported to ITU by the Member Government, as appropriate, and maintained in a registration database available on a 24-hour basis.

12 New VHF radio equipment installed on:

- .1 seagoing ships to which the 1974 SOLAS Convention does not apply but which are required to carry such equipment under national legislation, should have facilities capable of transmitting and receiving DSC-calls on VHF channel 70; and
- .2 seagoing ships not under national legislation should be encouraged to have facilities capable of transmitting and receiving DSC-calls on VHF channel 70.

* "Sea area A1": an area within the radiotelephone coverage of at least one VHF coast station in which continuous digital selective calling (DSC) alerting is available, as may be defined by a Contracting Government;

"Sea area A2": an area, excluding sea area A1, within the radiotelephone coverage of at least one MF coast station in which continuous DSC alerting is available, as may be defined by a Contracting Government;

"Sea area A3": an area, excluding sea areas A1 and A2, within the coverage of a recognized mobile satellite service supported by the ship earth station carried on board, in which continuous alerting is available; and

"Sea area A4": an area outside of sea areas A1, A2 and A3.

13 To ensure the protection of the GMDSS, radio equipment should be tested and certified. The equipment should be compliant with resolution A.694(17), the relevant performance standards of the Organization, the Radio Regulations, Recommendations ITU-R M.493 and ITU-R M.541 and further relevant ITU-R Recommendations as applicable for non-compulsory fittings to ensure the necessary communications reliability under all operational conditions, health and safety, and electromagnetic compatibility. For simple operation, such DSC equipment should be limited to the functionality as defined in Recommendation ITU-R M.493 in the form of a closed list.

14 Personnel operating such equipment should be adequately trained and certified to operate equipment efficiently, in accordance with ITU Resolution 343 (Rev.WRC-12), taking into account annex 2 to this circular, so that they can operate the equipment efficiently also in case of an emergency.

ANNEX 2

GUIDANCE ON THE DEVELOPMENT OF TRAINING MATERIALS FOR GMDSS OPERATORS ON NON-SOLAS SHIPS

1 The following guidance for the development of training materials for GMDSS operations is offered to:

- .1 promote the development and availability of GMDSS training materials for operators on ships not subject to SOLAS or other IMO conventions based on GMDSS (non-SOLAS convention) certificates described in the Radio Regulations;
- .2 encourage operators to use these materials to become familiar with the GMDSS, proper operation of the relevant subsystems and means to avoid inadvertent activation of distress alerts; and
- .3 encourage the use of existing materials developed for training operators aboard GMDSS ships as well as computer-based training aids where available.

Manufacturers

2 In general, the manufacturer of radio equipment is best suited to develop effective general operating instructions for its own equipment. These are usually contained in an operating manual or technical manual packaged with the equipment. Professional communicators using this equipment for the first time need only a few hints to attain skill in using the new equipment; however, other users may need to study the manual carefully and still may not attain skill until having practised with the equipment, or having been shown how to operate the radio by another mariner who has experience with that equipment. Manufacturers should ensure that manuals prepared for GMDSS sub-system equipment have sufficient information to permit non-professional communication users to operate the equipment effectively and to avoid inadvertent activation of distress alerts.

Sales and service facilities

3 Manufacturers' representatives should, as necessary, help to provide the user with basic instruction. One way is to have the customer view a video showing proper operation of the equipment which should be developed by the manufacturer. Another is to have a mock-up or actual installation available for the customer to use with supervision. Both of these could give the potential GMDSS user sufficient familiarity and confidence with using the equipment to avoid misuse.

Voluntary organizations

4 Sailing clubs, coastguard auxiliary and other maritime volunteer organizations in cooperation with competent authorities should develop seminars on the GMDSS subsystems as part of regularly scheduled events. These should highlight the general concepts of the GMDSS and the importance to maritime safety of proper operation. They could also highlight examples of misuses and focus on dos and don'ts for ensuring their safety while at sea.

Regulatory authorities

5 Authorities responsible for maritime safety, search and rescue and licensing of the GMDSS radio subsystems should strongly advocate the following measures in order to preserve the integrity of the GMDSS and enhance its effectiveness in meeting the safety needs of non-Convention ships:

- .1 that short, affordable and easy to understand training materials, including videos, posters, short manuals and information on detailed GMDSS training materials should be developed;
- .2 that every operator of the GMDSS subsystems, insofar as possible, should have adequate training and skills for the proper use of the equipment by advocating suitable training, including competency testing, prior to use of the equipment;
- .3 that continuous watch should be maintained on the GMDSS subsystems while under way; and
- .4 that two-way GMDSS subsystems capable of transmitting an automatic alert, including position, should ensure that the position is current by using an integral or connected electronic position-fixing equipment or manually updating the position at frequent intervals.

Equipment applicable to non-SOLAS ships and pleasure craft on domestic coastal voyages

EPIRBs

6 EPIRB means an emergency position-indicating radio beacon operating in the frequency band 406.0-406.1 MHz capable of transmitting a distress alert via satellite to a rescue coordination centre (RCC), and transmitting signals for on-scene locating. A minimal description of what happens when this device is activated should be covered as well as some common failures which have been noted, e.g. improper use of lanyards. Training should include proper installation for floating free (in cases where non-float-free units are installed, it must be pointed out that accessibility and ease of removal are critical) and measures to avoid false alerts. It should also emphasize that the EPIRB is the system of last resort and should only be activated when all other systems fail or if directed by an RCC. Caution should be explained that in some countries, users are encouraged to activate an EPIRB for any distress and in parallel with the use of other distress systems.

7 Testing procedures should be covered and, finally, the importance of registering the beacon should be emphasized. The Cospas-Sarsat satellite system operating on 406 MHz is the system which is approved for use in the GMDSS.

VHF DSC

8 Correct calling procedures to nearby ships and to coast guard or other rescue authorities should be explained. Cautions should be explained and correct procedures emphasized relating to acknowledgement of alerts from other ships. The importance should also be emphasized of having the ship's identification registered with the responsible authorities and having its GNSS receiver integrated into the DSC equipment so that an accurate position is part of any distress or safety call.

9 Administrations should consider requiring a minimum DSC capability for all VHF radios as part of their type approval and type acceptance requirements. As DSC shore installations are available in many parts of the world,* this system has been widely implemented by non-Convention ships. Moreover, this is one of the vital systems for ship-to-ship alerting. Therefore, since many ships will either need to call another ship or be called to assist another ship, it is critical that they be familiar with the use of this system. Topics to cover should be on basic operation of the VHF radio and how DSC acts as an automated watch. The importance of maintaining the watch (keeping the radio on and tuned to channels 16 and 70) should be emphasized. While VHF channel 70 is used for distress, urgency and safety alerting by DSC, VHF channel 16 is used as the complementary radiotelephony channel following the initial alert.

NAVTEX

10 This system is designed to provide marine safety broadcasts and distress information relevant to a limited area, generally less than 300 nm from the NAVTEX coast station. Messages are numbered and repeated for several subsequent broadcast periods. Stations maintain a coordinated broadcast schedule and broadcast priority information such as distress information on an urgent basis. The receiver will ignore repetitions of broadcasts which it has already copied. The receiver is also designed to sound an alarm upon receipt of an urgent transmission. This is perhaps the most useful and affordable of all the GMDSS subsystems to non-SOLAS ships. Users must be taught how to avoid receiving duplications of old messages, how to limit the area of concern and the importance of keeping the receiver turned on. They must be familiar with basic information on how the system works, its intended function and proper operation to take maximum advantage of this system.

NAVDAT

11 NAVDAT is a digital broadcasting system designed to operate in the 500 kHz and HF frequency bands, making it possible to broadcast digital files from shore-to-ships. These digital files can be texts, images, graphs, data, etc. Graphical information can be provided to navigators in order to facilitate the interpretation and the further integration of digital information into the electronic chart display and information system (ECDIS). The NAVDAT system is intended to be able to broadcast in general broadcast mode (to all ships), in selective broadcast mode (to ships located in a specific area, or for groups of ships according to the ship position, MMSI or group identification) and for a dedicated message (according to ship MMSI). All three broadcast modes are capable of sensitive data encryption.

Equipment applicable to non-SOLAS ships and pleasure craft operating on deep sea voyages

Satellite ship earth station (SES) operating a satellite service that may or may not be recognized as part of GMDSS

12 Many non-SOLAS ships are voluntarily fitting ship earth station (SES) using a recognized mobile satellite service. In some areas, alternative mobile-satellite systems are offering services to non-Convention ships using the GMDSS frequencies although on a limited and restricted basis. Users of these systems must know how best to use them for effective and efficient communication including during distress incidents. As a minimum, users should know how GMDSS services are provided to meet marine safety information dissemination requirements, distress alerting and communication in the ship-to-shore and shore-to-ship

* To identify the shore installations available, check the "Master plan of shore-based facilities for the GMDSS" module of the Global Integrated Shipping Information System (GISIS).

directions. Many small commercial ships and, to a greater extent, pleasure yachts, are fitting satellite communication equipment including SES using a recognized mobile satellite service. Users of this equipment should understand the limitations of its use for distress and safety and be encouraged to follow up any distress alert message with additional information, particularly information concerning the severity of the situation, best known location, number of persons on board, visual description and shore contact person. Ships fitting SES using a recognized mobile satellite service can receive enhanced group call (EGC) broadcasts and limit the receipt of this type of information to relevant sea areas of immediate concern.

Voice communication over satellite systems

13 Users of recognized mobile satellite services with voice capability may need only a minimum of training and practice to become proficient as these systems are nearly equivalent to the shoreside public telephone systems. After initial log on, the user simply dials a telephone number. In distress situations, a priority mode is available which rings through directly to the rescue authority associated with the coast earth station. When the call is answered a voice communication is established. Topics to cover are the basic operation, distress alerting and communication procedures and cautions against inadvertent activation of the priority mode to prevent false alerts.

HF and MF DSC

14 Although small commercial and pleasure craft will probably not need these systems except in rare cases, a DSC-equipped MF/HF radiotelephone is essential if an MF/HF radio is to be used for distress and safety purposes. Nonetheless, some basic operational instructions should be available including how these are to be used for distress alerting (ship-to-shore), establishing a voice circuit, and receiving notifications of distress situations in their immediate vicinity. The frequencies for distress alerting and distress voice traffic should be covered as well as the necessity to guard the distress alerting channel in the 8 MHz band.