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AMENDMENTS TO SOLAS CHAPTER IV: RADIOCOMMUNICATION EQUIPMENT, GMDSS AND VESSEL OPERATIONS

This Regulatory News provides guidance on the revised SOLAS Chapter IV: Radiocommunications and the new requirements that affect maritime radiocommunication equipment, the Global Maritime Distress and Safety System (GMDSS), and vessel operations.

KEY NOTES

Application:
New and existing ships on or after 1 January 2024.

Entry into force date:
Effective 01 January 2024

References:
SOLAS Chapter IV
Resolution MSC.496(105)
Resolution MSC.497(105)
Resolution MSC.508(105)
MSC.1/Circ.1645
MSC.1/Circ.1676
MSC.1/Circ.1460/Rev.4
COMSAR.1/Circ.32/Rev.3
Other at the References section

BACKGROUND

Since its introduction in 1988, the GMDSS has been a keystone of maritime safety. In response to the evolving landscape of communication systems, the IMO has undertaken significant efforts to modernize the GMDSS, aiming to align it with contemporary standards and eliminate the need of carrying outdated systems.

In April 2022, the IMO adopted Resolution MSC.496(105), which includes a complete replacement text for Chapter IV of SOLAS on radiocommunications, alongside the relocation of provisions for life-saving appliance communication equipment from Chapter III to Chapter IV. Furthermore, Resolution MSC.497(105) was adopted, introducing amendments to the 1988 SOLAS Protocol, specifically focused on the modernization of the GMDSS. These changes signify the IMO's efforts to modernize the GMDSS and have entered into force on January 1, 2024.

APPLICATION

The revised SOLAS Chapter IV containing requirements for radiocommunications applies to new and existing ships on or after January 1, 2024.

GMDSS Modernization - Key Changes

Ships operating in sea areas A3 or A4 no longer need HF direct-printing telegraphy (NBDP) for transmitting and receiving distress and safety radiocommunications. Nonetheless, shipowners may opt to keep HF NBDP equipment for receiving maritime safety MSI.

NAVTEX, EGC, and HF NBDP receivers are no longer mandatory. Operators must determine the necessary equipment based on the vessel's trading pattern.

The provisions of two-way VHF radio telephone apparatus and search and rescue transponders (SARTs) have been removed from SOLAS Chapter III to Chapter IV. This change necessitates wording amendments to the related SOLAS certificates affecting also certificates related to the SPS Codes, HSC Codes and MODU Codes.

AMENDMENTS TO SOLAS AND RELATED CODES

A. Brief Descriptions of the Amendments to SOLAS Chapter IV

Editorial Amendments and GMDSS Operators

In 2020, the IMO recognized Iridium as an additional GMDSS satellite operator, with Inmarsat no longer being the exclusive GMDSS satellite operator. This acknowledgment signals a potential future inclusion of other providers as GMDSS operators, prompting a revision of the criteria for mobile satellite services to ensure broader inclusivity. To better reflect the current landscape, references to Inmarsat devices and services have been replaced with broader definitions in SOLAS Chapter IV. For example, the term "recognized mobile satellite service" now supersedes "Inmarsat," offering a more inclusive description that aligns with the present situation.

Sea Area Coverage and Equipment Requirements

A significant update affects the sea areas and the associated equipment requirements for the GMDSS, which vary based on the operating area(s) of the ship. Particularly, the sea areas have been redefined as A1, A2, A3 and A4, with distinct requirements for each area.

Sea Areas Changed

SOLAS Chapter IV	Sea areas (previous)	Sea areas (new)
Regulation 8	A1	A1
Regulation 9	A1+A2	A2
Regulation 10	A1+A2+A3	A3
Regulation 11	A1+A2+A3+A4	A4

Sea area A3 is now defined as an area, excluding A1 and A2, within the coverage of a recognized mobile satellite service supported by a ship earth station (SES) carried on board, in which continuous alerting is available. As such, sea area A3 depends on the specific Recognized Mobile Satellite Service (RMSS) SES equipment installed on board the vessel.

Sea area A1

- Means 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

- Means 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

- Sea area A3 is now defined as an area, excluding A1 and A2, within the coverage of an INMARSAT geostationary satellite in which continuous alerting is available. As such, sea area A3 depends on the specific Recognized Mobile Satellite Service (RMSS) SES equipment installed aboard the vessel.

Sea area A4

- Means an area outside sea areas A1, A2 and A3.

Duplication of Equipment

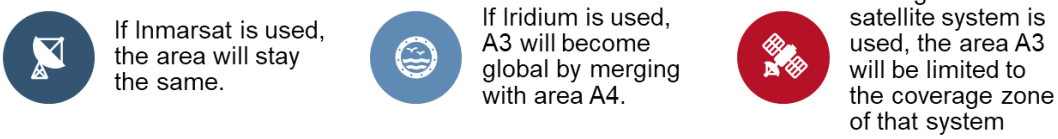
If availability is ensured by using duplication of equipment, the duplication of equipment is deemed as being achieved if equipment with coverage equal to or broader than the required system is installed for compliance with other sea area requirements, providing the required redundancy.

The additional radio installations specified in the table below should each be connected to a separate antenna, installed and ready for immediate operation.

In Addition to the Radio Installations Required by	Sea Area	Additional Required Radio Installations Complying with SOLAS Regulation IV/14
Regulations IV/7 and IV/8	A1	• VHF radio installation complying with the requirements of regulation IV/7.1.1.
Regulations IV/7 and IV/9	A2	• VHF radio installation complying with the requirements of regulation IV/7.1.1 and • MF radio installation complying with the requirements of regulation IV/9.1.1.
Regulations IV/7 IV/10	A3	• VHF radio installation complying with the requirements of regulation IV/7.1.1, and **either:** ○ An MF/HF radio installation complying with the requirements of regulation IV/11.1.1 and being able to comply fully with the watch requirements of regulation IV/12.1.3 **or** ○ A recognized mobile satellite service Ship Earth Station (RMSS-SES) complying with the requirements of regulation IV/10.1.1. The MF/HF installation or RMSS-SES installed for duplication should also comply with regulation IV/10.2
Regulations IV/7 and IV/11	A4	• VHF radio installation complying with the requirements of regulation IV/7.1.1, and • MF/HF radio installation complying with the requirements of regulation IV/11.1.1 and being able to comply fully with the watch requirements of regulation IV/12.1.3. An RMSS-SES with lesser coverage installed on board should determine the coverage of sea area A3 as a primary system for a ship.

Different types of RMSS-SES can be installed as primary and duplicated systems on board. However, if two SES units are installed, the one with more limited coverage will determine the ship's overall coverage area as the primary system. The duplicated system's coverage should include that of the primary system, and RMSS-SES with no correlation with the primary system's communication range cannot be accepted as a duplicated system.

The size of sea area A3 will depend on the type of mobile satellite service used



Compliance for Sea Area A1, A2 and A3

From January 1, 2024, MF/HF radio installation is no longer classified as primary equipment for sea area A3, but it remains primary equipment only for sea area A4.

Due to varying interpretations among stakeholders regarding whether a duplicated MF/HF radio installation can also be accepted as a primary MF radio installation for sea area A3, the Maritime Safety Committee addressed this issue in December 2024. To ensure a consistent application of GMDSS requirements, the Committee revised COMSAR.1/Circ.32/Rev.2, specifically amending footnote 6 of the table under paragraph 2.3 to state: "*6 A single MF/HF radio installation may be accepted both as a primary MF radio installation and a duplicated MF/HF radio installation, as provided in this circular*."

Consequently, COMSAR.1/Circ.32/Rev.3 was approved to harmonize GMDSS requirements for radio installations on SOLAS ships, superseding the previous version with immediate effect. Under COMSAR.1/Circ.32/Rev.3, four pieces of equipment (two VHF, one MF/HF and one RMSS) can be considered sufficient for meeting the requirements of sea area A3.

ABS will implement the acceptable configurations as above or any special requirements by the respective ship's flag Administration.

Consolidation of Provisions for Communication Equipment (VHF and SART)

Two-way VHF Radio Telephone Apparatus and SART

In an effort to modernize regulations, provisions for two-way VHF radiotelephone apparatus and Search and Rescue Transponder (SART) have been removed from SOLAS III/Reg.6 and merged into SOLAS IV/Reg.7, resulting in adjustments to related SOLAS certificates. These changes also impact certificates associated with the SPS Codes, HSC Codes and MODU Codes.

Changes in Equipment Usage

The use of VHF-EPIRB as a replacement for satellite EPIRB in sea area A1 will no longer be permitted. Vessels operating exclusively in sea area A1 should replace VHF-EPIRB with EPIRB.

NAVTEX and Receivers

There have been changes to the regulations regarding NAVTEX, EGC and HF NBDP receivers. The amended Regulation IV/7.1.1.4 specifies that "every ship shall be provided with a receiver or receivers capable of receiving MSI and search and rescue related information throughout the entire voyage in which the ship is engaged." Ship operators are now required to make decisions on the necessary equipment based on the ship's operation.

According to the *Guidance for The Reception of Maritime Safety Information and Search and Rescue Related Information as Required in the Global Maritime Distress and Safety System (GMDSS) (MSC.1/Circ.1645)*, para.4, ships should be equipped with appropriate receivers based on their operating areas and the availability of international NAVTEX service. Specifically, ships should have:

1. A receiver capable of receiving international NAVTEX service broadcasts if the ship is engaged on voyages in any area where an international NAVTEX service is provided.
2. If the ship is engaged in voyages where international NAVTEX service is not provided, it should have:
   - A receiver capable of receiving HF NBDP service when such service is available.

- Receiver(s) capable of receiving broadcasts from an international EGC service identified (SafetyNet or International Iridium SafetyCast service) that provides a service for the operating areas.

NBDP Removal

Effective January 1, 2024, the mandatory requirement for the Narrow Band Direct Printing (NBDP) function in MF/HF radio installations has been removed. This means that the use of NBDP for distress and safety communications will no longer be mandatory. Furthermore, ships operating in sea areas A3 or A4 are no longer required to have HF NBDP equipment for the transmission and reception of distress and safety radiocommunications. It should be noted that they may choose to retain it for receiving maritime safety information (MSI).

B. Consequential Amendments to Other Chapters of SOLAS and Related Codes

Several chapters of the SOLAS convention, including Chapter II-1, Chapter III and Chapter V, have been amended in alignment with changes to Chapter IV. These amendments also extend to the requirements of radio communication in specific codes such as the 1994/2000 HSC Codes, 1983/2008 SPS Codes and 1979/1989/2009 MODU Codes. Consequently, related certificates, including the Passenger Ship Safety Certificate, Cargo Ship Safety Equipment Certificate, Cargo Ship Safety Radio Certificate, Cargo Ship Safety Certificate, HSC Safety Certificate and their equipment records, have been adjusted.

Title		Resolution
Amendments to the International Code of Safety for High-Speed Craft, 1994	1994 HSC Code	MSC.498(105)
Amendments to the International Code of Safety for High-Speed Craft, 2000	2000 HSC Code	MSC.499(105)
Amendments to the Code of Safety for Special Purpose Ships, 1983	1983 SPS Code	MSC.502(105)
Amendments to the Code of Safety for Special Purpose Ships, 2008	2008 SPS Code	MSC.503(105)
Amendments to the Code for the Construction and Equipment of Mobile Offshore Drilling Units, 1979	1979 MODU Code	MSC.504(105)
on Amendments to the Code for the Construction and Equipment of Mobile Offshore Drilling Units, 1989	1989 MODU Code	MSC.505(105)
Amendments to the Code for the Construction and Equipment of Mobile Offshore Drilling Units, 2009	2009 MODU Code	MSC.506(105)

C. Related Resolutions and Guidelines Including Performance Standards

In addition to the amendments made to SOLAS chapters and related certificates, the IMO has also adopted a significant number of amendments and revisions to existing resolutions and guidelines. These include performance standards for relevant equipment.

Title	Resolution
System performance standard for the promulgation and coordination of maritime safety information using high-frequency narrow-band direct-printing	MSC.507(105)
Performance standards for the reception of maritime safety information and search and rescue related information by MF (NAVTEX) and HF	MSC.508(105)

Title	Resolution
Provision of radio services for the Global Maritime Distress and Safety System (GMDSS)	MSC.509(105)
Performance standards for search and rescue radar transponders	MSC.510(105)
Performance standards for shipborne VHF radio installations capable of voice communication and digital selective calling	MSC.511(105)
Performance standards for shipborne MF and MF/HF radio installations capable of voice communication, digital selective calling and reception of maritime safety information and search and rescue related information	MSC.512(105)
Performance standards for Inmarsat-C ship earth stations capable of transmitting and receiving direct-printing communications	MSC.513(105)
Performance standards for survival craft portable two-way VHF radiotelephone apparatus	MSC.515(105)
Amendments to the Performance standards for radiocommunication equipment (resolution MSC.80(70))	MSC.516(105)
Performance standards for a shipborne integrated communication system (ICS) when used in the Global Maritime Distress and Safety System (GMDSS)	MSC.517(105)

New Radio Installations and Performance Standards

SOLAS IV/Reg.14 introduces updated performance standards, superseding previous ones and applying to equipment installed after January 1, 2024. To provide clarity on the implementation timeline, the IACS has published *Interpretations of various Performance Standards related to GMDSS radio installations (UI SC298)*, which offers an interpretation of the phrase "installed on or after January 1, 2024" meaning that:

1. Ships for which the building contract is placed on or after January 1, 2024: any installation on the ship.
2. Ships for which the building contract is placed before January 1, 2024:
    a. A contractual delivery date for the equipment or,
    b. In the absence of a contractual delivery date, the actual delivery of the equipment to the ship on or after January 1, 2024.

Nevertheless, due to global supply chain disruptions and equipment shortages meeting the new standards, IMO issued a circular about *Delays Affecting the Availability of New GMDSS Equipment Compliant with the Revised Performance Standards outlined in Resolutions MSC.511(105), MSC.512(105), and MSC.513(105)* (*MSC.1/Circ.1676).* MSC.1/Circ.1676 calls upon flag Administrations to allow the continued installation of VHF radio installations, MF and MF/HF radio installations, and Inmarsat-C ship earth stations approved under the previous performance standards until January 1, 2028.

SUMMARY TABLE OF THE REQUIRED EQUIPMENT TO BE INSTALLED

The revised circular on the *Harmonization of GMDSS Requirements for Radio Installations on Board SOLAS Ships (COMSAR.1/Circ.32/Rev.3),* features a table that outlines the GMDSS equipment applicable to vessels subject to SOLAS Chapter IV.

Equipment	A1	A2	A3	A4
VHF telephony installation with DSC capable of:	x	x	x	x
DSC watch on channel 70	x	x	x	x
Radiotelephony watch on channel 16	x	x	x	x
Watch on other appropriate frequency or frequencies for urgency and safety communications for the area in which the ship is navigating	x	x	x	x
MF telephony[6] installation with MF DSC capable of:		x	x	
DSC watch on 2 187.5 kHz		x	x	
Watch on other appropriate frequency or frequencies for urgency and safety communications for the area in which the ship is navigating		x	x	
SES providing RMSS			x	
MF/HF telephony[6] installation with DSC capable of:				x
DSC watch on 2 187.5 kHz and 8 414.5 kHz				x
Depending on time of day and geographical position, DSC watch on at least one of the frequencies 4 207.5 kHz, 6 312 kHz, 12 577 kHz or 16 804.5 kHz				x
Watch on other appropriate frequency or frequencies for urgency and safety communications for the area in which the ship is navigating				x
Duplicated VHF with DSC	x[7]	x[7]	x	x
Duplicated MF[6] with DSC		x[7]		
Duplicated SES providing RMSS			x[4, 5]	
Duplicated MF/HF telephony[6] with DSC			x[4]	x
Receiver(s) for MSI and SAR-related information[3]	x	x	x	x
Float-free EPIRB	x	x	x	x
Radar SART or AIS SART	x[1]	x[1]	x[1]	x[1]
Portable GMDSS VHF transceivers	x[2]	x[2]	x[2]	x[2]
Automatic updating of position to all relevant radiocommunication equipment	x	x	x	x
The following additional requirements apply to passenger ships				
"Distress panel" and "distress alarm panel" (SOLAS regulations IV/6.4 and 6.6)	x	x	x	x
Two-way-on-scene radiocommunication on 121.5 MHz and 123.1 MHz from the navigating bridge. (SOLAS regulation IV/7.6)	x	x	x	x

1 Cargo ships between 300 and 500 gt.: 1 set. Cargo ships of 500 gt. and upwards and passenger ships: 2 sets.
2 Cargo ships between 300 and 500 gt.: 2 sets. Cargo ships of 500 gt. and upwards and passenger ships: 3 sets.
3 This may be either a combined ship earth station and EGC receiver or separate pieces of equipment.
4 Ships in sea area A3 may choose between duplication with either complete MF/HF transceiver or SES providing an RMSS with coverage equal to or broader than the primary RMSS (See section 1.6.3).
5 See section 1.6.3.2.
6 A single MF/HF radio installation may be accepted both as a primary MF radio installation and as a duplicated MF/HF radio installation, as provided in this circular.
7 See section 1.6.3.1.

UPDATE ON STATUTORY CERTIFICATE FORMS AND ISSUANCE

Effective from January 1, 2024, the forms of relevant statutory certificates will change. For ABS vessels following the *Guidance on the Timing of Replacement of Existing Certificates by the Certificates Issued After the Entry into Force of Amendments to Certificates in IMO Instruments (MSC-MEPC.5/Circ.6),* the affected SOLAS certificates will generally be updated at their expiry after January 1, 2024.

ACTIONS REQUIRED

New Ships

Performance standards for equipment on ships for which the building contract is placed on or after January 1, 2024, and under MSC.1/Circ.1676 seeking flag Administrations agreement for relaxation until January 1, 2028. The forms of relevant statutory certificates changed. For new ships, new forms of certificates will apply.

Existing Ships

Depending on the existing equipment and the area of operation, there may be a need for area A1 to replace VHF-EPIRB with EPIRB, while for area A3 may need to install one RMSS - SES. NAVTEX and NBDP are no longer mandatory required equipment. NBDP can be retained for receiving MSI. The forms of relevant statutory certificates have changed, and existing vessels will be issued with the revised certificates following the first radio survey (periodical or renewal) after January 1, 2024, irrespective if any new equipment is installed. In case of any new GMDSS radio equipment installation or removal, the relevant certificates should be updated.

Ship owners/operators should note the amendments to SOLAS Chapter IV effective since January 1, 2024, and apply them in ships operation, as appropriate.

Ship builders should note the amendments to SOLAS Chapter IV and apply them in ships construction and installation of GMDSS, as appropriate.

Manufacturers and Service suppliers of GMDSS equipment should note the amendments to SOLAS Chapter IV and apply them in installation or inspection of GMDSS equipment, as appropriate, especially with regards the performance standards.

ABS will issue relevant updated certificates following the first radio survey after January 1, 2024.

REFERENCES

Resolution	
MSC.496(105)	Amendments To the International Convention for The Safety of Life at Sea, 1974
MSC.497(105)	Amendments To the Protocol Of 1988 Relating to The International Convention for The Safety of Life at Sea, 1974
MSC.508(105)	Performance Standards for The Reception of Maritime Safety Information and Search and Rescue Related Information by MF (NAVTEX) and HF
MSC.1/Circ.1460/Rev.4	Guidance On the Validity of Radiocommunications Equipment Installed and Used on Ships
COMSAR.1/Circ.32/Rev.3	Harmonization Of GMDSS Requirements for Radio Installations on Board SOLAS Ships
MSC.1/Circ.1645	Guidance For the Reception of Maritime Safety Information and Search and Rescue Related Information as Required in The Global Maritime Distress and Safety System (GMDSS)
MSC.1/Circ.1676	Delays Affecting the Availability of New GMDSS Equipment Compliant with The Revised Performance Standards Set Out in Resolutions MSC.511(105), MSC.512(105) and MSC.513(105
MSC.498(105)	Amendments to the International Code of Safety for High-Speed Craft, 1994 (1994 HSC Code)
MSC.499(105)	Amendments to the International Code of Safety for High-Speed Craft, 2000 (2000 HSC Code)
MSC.502(105)	Amendments to the Code of Safety for Special Purpose Ships, 1983 (1983 SPS Code)
MSC.503(105)	Amendments to the Code of Safety for Special Purpose Ships, 2008 (2008 SPS Code)
MSC.504(105)	Amendments to the Code for the Construction and Equipment of Mobile Offshore Drilling Units, 1979 (1979 MODU Code)
MSC.505(105)	on Amendments to the Code for the Construction and Equipment of Mobile Offshore Drilling Units, 1989 (1989 MODU Code);
MSC.506(105)	Amendments to the Code for the Construction and Equipment of Mobile Offshore Drilling Units, 2009 (2009 MODU Code)
MSC.507(105)	System performance standard for the promulgation and coordination of maritime safety information using high-frequency narrow-band direct-printing
MSC.508(105)	Performance standards for the reception of maritime safety information and search and rescue related information by MF (NAVTEX) and HF
MSC.509(105)	Provision of radio services for the Global Maritime Distress and Safety System (GMDSS)
MSC.510(105)	Performance standards for search and rescue radar transponders;

Resolution	
MSC.511(105)	Performance standards for shipborne VHF radio installations capable of voice communication and digital selective calling
MSC.512(105)	Performance standards for shipborne MF and MF/HF radio installations capable of voice communication, digital selective calling and reception of maritime safety information and search and rescue related information
MSC.513(105)	Performance standards for Inmarsat-C ship earth stations capable of transmitting and receiving direct-printing communications;
MSC.515(105)	Performance standards for survival craft portable two-way VHF radiotelephone apparatus
MSC.516(105)	Amendments to the Performance standards for radiocommunication equipment (resolution MSC.80(70))
MSC.517(105)	Performance standards for a shipborne integrated communication system (ICS) when used in the Global Maritime Distress and Safety System (GMDSS)
IACS UI SC298	Interpretations of various Performance Standards related to GMDSS radio installations

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