GMDSS Equipment

Amended Rules and Guidance

Rules for Safety Equipment
Rules for Radio Installations
Guidance for Radio Installations

Reason for Amendment

Chapter IV of SOLAS specifies requirements for GMDSS, but the chapter as a whole has not been comprehensively reviewed since entering into force. Many of the chapter's requirements were based on the technologies of the 1980s and remained unchanged over the years. Therefore, at the 86th session of its Maritime Safety Committee (MSC86) in May 2009, the IMO began discussing ways of ensuring that relevant requirements in the chapter keep pace with the technical progress of GMDSS-related radio communication equipment and new services in satellite communications being introduced.

These discussions continued for several years and eventually led to the IMO adopting amendments to not only SOLAS but also to the related HSC Code and MODU Code. At the 105th session of the Maritime Safety Committee (MSC105) in June 2023, the IMO adopted resolutions MSC.496(105) to MSC.499(105) and resolutions MSC.504(105) to MSC.506(105) to amend SOLAS and the aforementioned codes. At the same session, the IMO also adopted new performance standards for GMDSS-related equipment at MSC105 as resolution MSC.508(105) and resolutions MSC.510(105) to MSC.517(105).

In addition to the above, the IMO's Sub-Committee on Navigation, Communications and Search and Rescue (NCSR) adopted revisions to the IMO guidelines on compliance with GMDSS requirements for SOLAS ships as COMSAR.1/Circ.32/Rev.2 at its 10th session (NCSR10) in May 2023.

Accordingly, relevant requirements are amended based upon the aforementioned IMO resolutions and COMSAR.1/Circ.32/Rev.2.

Outline of Amendment

The main contents of this amendment are as follows:

(1) Amends the definition of sea area A3.
(2) Amends requirements related to the radio equipment to be provided for sea areas A1, A2, A3 and A4.
(3) Amends performance standards for GMDSS-related equipment.
(4) Amends the formats used for Cargo Ship Safety Equipment Certificates, Cargo Ship Safety Radio Certificates and Cargo Ship Safety Certificates.

“Rules for safety equipment” has been partly amended as follows:

Chapter 2 SURVEYS OF SAFETY EQUIPMENT

2.2 Registration Surveys

2.2.3 Documents to be Maintained On Board*

Sub-paragraph -4 has been amended as follows.

4 (Omitted)
(1) (Omitted)
(2) (Omitted)
(3) (Omitted)
~~(4) Two-way radio telephone apparatus~~
~~(5) Radar transponders~~
(~~6~~4) (Omitted)
(~~7~~5) (Omitted)
(~~8~~6) (Omitted)
(~~9~~7) (Omitted)
(~~10~~8) (Omitted)
(~~11~~9) (Omitted)
(~~12~~10) (Omitted)
(~~13~~11) (Omitted)
(~~14~~12) (Omitted)
(~~15~~13) (Omitted)
(~~16~~14) (Omitted)
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(~~29~~27) (Omitted)
(~~30~~28) (Omitted)
(~~31~~29) (Omitted)
(~~32~~30) (Omitted)
(~~33~~31) (Omitted)
(~~34~~32) (Omitted)
(~~35~~33) (Omitted)

Chapter 3 ARRANGEMENTS AND PERFORMANCE

3.1 General

3.1.1 General

2 (Omitted)

Sub-paragraph -2(4) has been amended as follows.

(4) (Omitted)
- (a) (Omitted)
- (b) (Omitted)
- (c) (Omitted)
- ~~(d) Two-way radio telephone apparatus~~
- (~~e~~d) (Omitted)
- (~~f~~e) (Omitted)
- (~~g~~f) (Omitted)
- (~~f~~g) (Omitted)
- (~~g~~h) (Omitted)
- (~~h~~i) (Omitted)
- (~~k~~j) (Omitted)
- (~~l~~k) (Omitted)
- (~~m~~l) (Omitted)
- (~~n~~m) (Omitted)
- (~~o~~n) (Omitted)
- ~~(p) Radar transponders and AIS-SART~~
- (~~p~~o) (Omitted)

"Rules for radio installations" has been partly amended as follows:

Chapter 1 GENERAL

1.1 General

Paragraph 1.1.4 has been amended as follows.

1.1.4 Terms and Definitions

(Omitted)

(1) (Omitted)

(2) (Omitted)

(3) "Bridge-to-bridge communications" means safety radiocommunications between ships from the position from which the ships are normally navigated.

(4) (Omitted)

(5) (Omitted)

~~(6) "Direct-printing telegraphy" means automated telegraphy techniques which comply with the relevant recommendations of the International Telecommunication Union Radiocommunication Bureau (ITU-R).~~

"AIS-SART" means an automatic identification system search and rescue transmitter capable of operating on frequencies dedicated for AIS (161.975 *MHz* and 162.025 *MHz*).

(7) （省略）

(8) ~~"INMARSAT" means the Organization established by the Convention on the International Maritime Satellite Organization (INMARSAT) adopted on 3 September 1976.~~

"Emergency position-indicating radio beacon (EPIRB)" means a transmitter operating in the frequency band 406.0-406.1 *MHz* capable of transmitting a distress alert via satellite to a rescue coordination centre and transmitting signals for on-scene locating.

(9) ~~"International NAVTEX service" means the co-ordinated broadcast and automatic reception on 518*kHz* of maritime safety information by means of narrow-band direct-printing telegraphy using the English language.~~

"Global Maritime Distress and Safety System (GMDSS)" means a system that performs the functions specified in **4.1-1(1)**.

(10) (Omitted)

(11) (Omitted)

(12) ~~"Polar orbiting satellite service" means a service which is based on polar orbiting satellites which receive and relay distress alerts from satellite EPIRBs and which provides their position.~~

"GMDSS identities" means information which may be transmitted to uniquely identify the ship or its associated rescue boats and survival craft. These identities are the ship's call sign, Maritime Mobile Service Identity (*MMSI*), EPIRB hexadecimal identity, recognized mobile satellite service identities and equipment serial numbers.

(13) (Omitted)

(14) (Omitted)

(15) (Omitted)

(16) (Omitted)

(17) "Sea area A3" means as area, excluding sea areas A1 and A2, within the coverage of an ~~INMARSAT geostationary satellite~~ a recognized mobile satellite service supported by the ship earth station carried on board, in which continuous alerting is available.

(18) (Omitted)

(19) (Omitted)

(20) (Omitted)
(21) (Omitted)
(22) "Maritime safety information (*MSI*)" means navigational and meteorological warnings, meteorological forecasts and other urgent safety-related messages broadcast to ships. Refer to Joint *IMO*/*IHO*/*WMO* Manual on Maritime Safety Information (*MSI*) (*MSC*.1/*Circ*.1310, as amended).
(23) "Radar SART" means a search and rescue transponder operating on radar frequencies in the frequency band 9.2-9.5 *GHz*.
(24) "Radio Regulations" means the radio regulations complementing the Constitution and Convention of the International Telecommunication Union which is in force at any given time.
(25) "Satellite service on 406 *MHz*" means a service operating through a satellite system having global availability designed to detect EPIRBs transmitting in the frequency band 406.0-406.1 *MHz*.

Chapter 3 RADIO INSTALLATIONS

3.1 General

Paragraph 3.1.1 has been amended as follows.

3.1.1 Arrangements and Performance*

1 Every radio installation is to be:

(1) so located that no harmful interference of mechanical, electrical or other origin affects its proper use, and so as to ensure electromagnetic compatibility and avoidance of harmful interaction with other equipment and systems;

(2) so located as to ensure the greatest possible degree of safety and operational availability;

(3) protected against harmful effects of water, extremes of temperature and other adverse environmental conditions;

(4) provided with reliable, permanently arranged electrical lighting, independent of the main and emergency sources of electrical power, for the adequate illumination of the radio controls for operating the radio installation; and

(5) clearly marked with the ~~call sign, the ship station identity and other codes~~ GMDSS identities, as applicable for the use of the radio installation operator.

2 The radio installations to be provided on board the ship are to satisfy the requirements for radio equipment specified in **3.2.1** to **3.2.7** and radio life-saving appliances specified in **3.2.8** ~~and 3.2.9~~.

3 In passenger ships, a distress panel is to be installed at the conning position, and it is to be as follows:

(1) contain either one single button which, when pressed, initiates a distress alert using all radio installations required on board for that purpose or one button for each individual installation;

(2) be capable of clearly and visually indicating whenever any button or buttons have been pressed; and

(3) be provided with means to prevent inadvertent activation of the button or buttons referred to in (1) and (2) above.

4 In passenger ships, if an EPIRB is used as the secondary means of distress alerting and is not remotely activated from the distress panel, it is acceptable to have an additional EPIRB installed in the wheelhouse near the conning position.

5 In passenger ships, a distress alarm panel is to be installed at the conning position, and it is to be capable of the following:

(1) providing visual and aural indications of any distress alert or alerts received on board;

(2) indicating through which radiocommunication service the distress alerts have been received.

6 The distress panels referred to in **-3** and **-5** above may be combined.

Paragraph 3.1.2 has been amended as follows.

3.1.2 Approval of Equipment and Devices

Equipment and devices specified in **3.2.1** to **3.2.~~9~~8** are, in principle, to comply with the respective applicable performance standards in Regulation 16, Chapter IV, *SOLAS* Convention. In addition, such equipment and devices are to be of a type approved by ~~Society~~ a third-party approved by the administration. ~~However, equipment or installations approved by the Government of the State whose flag the ship is entitled to fly, other Contracting Governments of the Convention or a Party approved by those Governments may be exempted from this requirement provided that it is deemed appropriate by the Society.~~

Section 3.2 has been amended as follows.

3.2 Radio Equipment

3.2.1 VHF Radio Installations*

1 A VHF radio installation is to consist of the following devices separately or in combination, each satisfying the following functional requirements.

(1) VHF DSC device
The VHF DSC device is to be capable of transmitting ~~and receiving~~ distress alerts, urgency and safety communications using DSC on the frequency 156.525 *MHz* (Channel 70).

(2) VHF radiotelephone equipment
The VHF radiotelephone equipment is to be capable of the following:
(a) transmitting and receiving ~~radiotelephone~~ distress, urgency and safety communications on the frequencies 156.300 *MHz* (Channel 6), 156.650 *MHz* (Channel 13) and 156.800 *MHz* (Channel 16); and
(b) transmitting and receiving general radio communications using radiotelephony on the band between 156 *MHz* and 174 *MHz* (hereinafter also referred to as "VHF band"~~.~~). However, this general radio communication may be provided separately.

(3) VHF continuous DSC watch device
The VHF continuous DSC watch device is to be capable of maintaining a continuous watch on VHF DSC Channel 70.

2 The VHF installation in **-1(2)(a)** above is to satisfy the following **(1)** and **(2)**.

(1) Control of VHF radiotelephone channels is to be immediately available on the navigation bridge convenient to the conning position and, where necessary, facilities are to be available to permit radio communications from the wings of the navigation bridge. Portable VHF radiotelephone equipment may be used to meet the latter requirement.

(2) The ship, while at sea, is to maintain a continuous listening watch on VHF Channel 16 at the position from which the ship is normally navigated.

3.2.2 MF Radio Installations*

An MF radio installation is to consist of the following devices, separately or in combination, each satisfying the following functional requirements.

(1) MF DSC device
The MF DSC device is to be capable of transmitting ~~and receiving~~ distress alerts and safety communications using DSC on the frequency 2,187.5 *kHz*.

(2) MF radiotelephone equipment
The MF radiotelephone equipment is to be capable of transmitting and receiving the following:
(a) distress, urgency and safety communications using radiotelephony on the frequency 2,182 *kHz* ~~and on working frequencies in the band between 1,605*kHz* and 4,000*kHz*~~, and
(b) general radio communications using radiotelephony on working frequencies in the band between 1,605 *kHz* and 4,000 *kHz* (hereinafter also referred to as "MF band"~~.~~).

(3) MF DSC continuous watch device
The MF DSC continuous watch device is to be capable of maintaining a continuous watch on the ~~distress and safety~~ DSC frequency of 2,187.5 *kHz*.

3.2.3 MF/HF Radio Installations*

An MF/HF radio installation is to consist of the following devices, separately or in combination, each satisfying the following functional requirements. This requirement may be fulfilled by addition of the capability of HF radio installation to MF radio installation.

(1) MF/HF DSC device

The MF/HF DSC device is to be capable of transmitting ~~and receiving~~ distress alerts, urgency and safety communications using DSC on the MF~~/HF~~ band and on working frequencies in the bands between 4,000 *kHz* and 27,500 *kHz* (hereinafter also referred to as "HF band").

(2) MF/HF radiotelephone equipment

The MF/HF radiotelephone equipment is to be capable of transmitting and receiving the following:

(a) distress, urgency and safety communications using radiotelephony on working frequencies in the bands between 4,000 *kHz* and 27,500 *kHz* and between 1,605 *kHz* and 4,000 *kHz*; and

(b) general radio communications using the radiotelephony on the MF ~~/~~ band and HF band~~s~~.

(3) MF/HF continuous DSC watch device

The MF/HF continuous DSC watch device is to be capable of maintaining a continuous watch on the distress and safety DSC frequencies 2,187.5 *kHz*, 8,414.5 *kHz*, and also on at least one of the frequencies 4,207.5 *kHz*, 6,312 *kHz*, 12,577 *kHz* or 16,804.5 *kHz*. The device is to be capable of selecting one of the frequencies at any time from among the ~~distress alert and safety~~ DSC frequencies. A scan receiver is acceptable for this purpose.

~~(4) MF/HF direct-printing telegraphy device~~

~~The MF/HF direct-printing telegraphy device is to be capable of transmitting and receiving:~~

~~(a) distress alerts and safety communications using direct-printing telegraphy on the MF/HF bands;~~

~~(b) general radio communications using direct-printing telegraphy on the MF/HF bands; and~~

~~(c) maritime safety information using direct-printing telegraphy on the MF/HF bands. Ships engaged exclusively on voyages in areas where an HF direct-printing telegraphy maritime safety information service is provided, and fitted with equipment capable of receiving such service, may be exempted from installation of the enhanced group calling receiver described below.~~

3.2.4 Recognized Mobile Satellite Service Communication Installations*

A recognized mobile satellite service communication installation is to consist of the following devices, separately or in combination, each satisfying the following functional requirements.

(1) Recognized mobile satellite service ship earth station

A recognized mobile satellite service ship earth station is to be capable of transmitting and receiving:

(a) distress alerts, urgency and safety communications ~~using direct-printing telegraphy and/or radiotelephony~~;

(b) general radio communications ~~using either radiotelephony or direct-printing telegraphy~~; and

(c) maintaining a continuous watch for satellite shore-to-ship distress alerts.

(2) Enhanced group calling receiver

The enhanced group calling receiver is to be capable of receiving maritime safety information, and search and rescue related information and using recognized mobile satellite service enhanced group calling.

3.2.5 ~~Ship~~ Radar ~~Transponders~~ SART and AIS SART*

A ~~ship~~ radar ~~transponder~~ SART and an AIS-SART are to be~~:~~

~~(1)~~ capable of being operated in the 9 *GHz* band or on frequencies dedicated for AIS~~; and~~

~~(2) so stowed as to be ready for immediate use.~~

~~It may be one of the survival craft radar transponders or survival craft AIS-SARTs specified in **4.9.2-1** if the survival craft radar transponders are not stowed in the lifeboats~~.

3.2.6 ~~International NAVTEX Receivers~~ Maritime Safety Information and Search And Rescue Related Information Receivers*

Maritime safety information and search and rescue related information throughout the entire voyage in which the ship is engaged. An international NAVTEX receiver is to be capable of receiving broadcasts of the international NAVTEX service.

3.2.7 Satellite Emergency Position Indicating Radio Beacon (EPIRB)*

A satellite emergency position indicating radio beacon (hereinafter referred to as "satellite EPIRB") is to be as follows:

~~(1) capable of transmitting a distress alert through the polar orbiting satellite service on the 406/121*MHz* bands;~~

(~~2~~1) installed in an easily accessible position;

(~~3~~2) ready to be manually released and capable of being carried by one person into a survival craft;

(~~4~~3) capable of floating free if the ship sinks and of being automatically activated when afloat; and

(~~5~~4) capable of being activated manually.

3.2.8 Two-way VHF Radiotelephone Apparatus*

A two-way VHF radiotelephone apparatus is to be capable of communicating as a portable type operated on the frequency 156.800 *MHz* (Channel 16) and at least one additional channel between the site and the survival craft and the ship and the rescue unit. ~~If a fixed type is fitted in the survival craft, it is to conform to these performance standards.~~

~~**3.2.9 Survival Craft Radar Transponders***~~

~~A survival craft radar transponder and a survival craft AIS-SART are to be:~~

~~(1) capable of being operated in the 9*GHz* band or on frequencies dedicated for AIS; and~~

~~(2) stowed in such location that it can be rapidly placed in any survival craft.~~

Chapter 4 COMMUNICATION SYSTEMS

Section 4.1 has been amended as follows.

4.1 General

1 Every ship, while at sea, is to be capable of performing the following GMDSS functions:

(1) ~~except as provided in 4.3-1(1) and 4.5-1(3)(c), of~~ transmitting ship-to-shore distress alerts by at least two separate and independent means, each using a different radio communication service;

(2) ~~of~~ receiving shore-to-ship distress alerts;

(3) ~~of~~ transmitting and receiving ship-to-ship distress alerts;

(4) ~~of~~ transmitting and receiving search and rescue co-ordinating communications;

(5) ~~of~~ transmitting and receiving on-scene communications;

(6) ~~of~~ transmitting and receiving signals for locating by means of radars operated in the 9 *GHz* band (Refer also to Regulations 19.2.3.2 and 19.2.4, Chapter V, *SOLAS* Convention, as appropriate);

(7) ~~of transmitting and~~ receiving maritime safety information;

(8) ~~of~~ transmitting and receiving ~~general radio-communications to and from shore-based radio systems or networks~~ urgent and safety communications; and

(9) ~~of~~ transmitting and receiving bridge-to-bridge communications.

2 Every ship, while at sea, is to be capable of transmitting and receiving general radiocommunications.

Section 4.2 has been amended as follows.

4.2 Basic Requirements for Radio Equipment~~s~~

~~**1**~~ Every ship is to be provided with the following:

(1) the VHF radio installation specified in **3.2.1**;

(2) the ~~ship~~ radar ~~transponder~~ SART or AIS-SART specified in **3.2.5**;

(3) ~~n international NAVTEX~~ the receiver capable of receiving MSI, and search and rescue related information specified in **3.2.6**; and

~~(4) an enhanced group calling receiver if the ship is engaged on voyages in sea area A1, or A2 or A3 but in which an international NAVTEX service is not provided;~~

(~~5~~4) a satellite EPIRB specified in **3.2.7**.

~~**2** The ship is to satisfy the requirements specified in (1) and (2) below.~~

~~(1) Control of VHF radiotelephone channels is to be immediately available on the navigation bridge convenient to the conning position and, where necessary, facilities are to be available to permit radio communications from the wings of the navigation bridge. Portable VHF radiotelephone equipment may be used to meet the latter requirement.~~

~~(2) The ship, while at sea, is to maintain a continuous listening watch on VHF channel 16 at the position from which the ship is normally navigated.~~

Section 4.3 has been amended as follows.

4.3 Radio Equipment - Sea Area A1*

1 In addition to satisfying the requirements of **4.2**, every ship engaged on voyages exclusively in sea area A1 is to be provided with a radio installation capable of initiating the transmission of ship-to-shore distress alerts from the position from which the ship is normally navigated, and operating any of the following:

~~(1) on VHF using DSC; this requirement may be fulfilled by the VHF EPIRB prescribed in -2, either by installing the VHF EPIRB close to, or by remote activation from, the position from which the ship is normally navigated; or~~

(~~2~~1) ~~through~~ a ~~polar orbiting~~ satellite service at 406 *MHz*~~, this requirement may be fulfilled by the satellite EPIRB on 406/121*MHz*, either by installing the satellite EPIRB close to, or by remote activation from the position from which the ship is normally navigated~~; or

(~~3~~2) a MF using DSC (if the ship is engaged on voyages within coverage of MF coastal stations);

(~~4~~3) a HF using DSC; or

(~~5~~4) through a recognized mobile satellite service.~~ this requirement may be fulfilled by:~~

~~(a) a ship earth station, or~~

~~(b) a satellite EPIRB specified in **3.2.7**, either by installing the satellite EPIRB close to, or by remote activation from, the position from which the ship is normally navigated.~~

2 ~~Ships engaged exclusively on voyages in sea area A1 may carry, in lieu of the satellite EPIRB required by **4.2-1(5)**, a VHF EPIRB which is to be capable of transmitting a distress alert using DSC on VHF channel 70 and providing for locating by means of a radar transponder operating in the 9*GHz* band.~~ Requirement **-1(1)** may be satisfied by installing any of the following:

(1) the EPIRB specified in **3.2.7** close to the position from which the ship is normally navigated but at a location whereby it can still float free of the ship in an emergency;

(2) the EPIRB specified in **3.2.7** installed at a location other than **(1)** above, provided that this EPIRB has a means of remote activation which is installed near the position from which the ship is normally navigated; or

(3) a second EPIRB installed near the position from which the ship is normally navigated.

Section 4.4 has been amended as follows.

4.4 Radio Equipment - Sea Area~~s A1 and~~ A2*

1 In addition to satisfying the requirements of **4.2**, every ship engaged on voyages ~~beyond sea area A1, but remaining~~ within sea area A2, is to be provided with:

(1) the MF radio installation specified in **3.2.2**;

(2) a secondary means of initiating the transmission of ship-to-shore distress alerts by a radio service other than MF operating either:

(a) through the ~~polar orbiting~~ satellite service on 406 *MHz* as specified in **4.3-1(~~2~~1)**; or

(b) on HF using DSC as specified in **4.3-1(~~4~~3)**; or

(c) through a recognized mobile satellite service by a ship earth station.

2 It is to be possible to initiate distress alerts by the radio installation specified in **-1** from the position from which the ship is normally navigated.

3 Requirement **-1(2)(a)** may be satisfied by installing any of the following:

(1) the EPIRB specified in **3.2.7** close to the position from which the ship is normally navigated but at a location whereby it can still float free of the ship in an emergency; or

(2) the EPIRB specified in **3.2.7** installed at a location other than **(1)** above, provided that this EPIRB has a means of remote activation which is installed near the position from which the ship is normally navigated; or

(3) a second EPIRB installed near the position from which the ship is normally navigated.

~~**3**~~**4** In addition, the ship is to be provided with either of the following so as to be capable of transmitting and receiving general radio communications ~~using radiotelephony or direct-printing telegraphy by either~~:

(1) ~~an MF radio installation or an MF/HF radio installation~~ A radio installation operating on working frequencies in the bands between 1,605 *kHz* and 4,000 *kHz* or between 4,000 *kHz* and 27,500 *kHz*. This requirement may be satisfied by the addition of this capability in the equipment required by **-1(1)** above.; or

(2) A recognized mobile satellite service ship earth station.

~~**4 Ships constructed before 1 February 1997 which are engaged exclusively on voyages within sea area A2 may be exempted from the requirements of 3.2.1(1) and 3.2.1(3) provided that such ships maintain a continuous listening watch of VHF channel 16 at the position from which the ship is normally navigated.**~~

Section 4.5 has been amended as follows.

4.5 Radio Equipment - Sea Areas ~~A1, A2 and~~ A3*

1 In addition to satisfying the requirements of **4.2**, every ship engaged on voyages ~~beyond sea areas A1 and A2, but remaining~~ within sea area A3~~, if it does not comply with the requirements of -2,~~ is to be provided with the following:.

(1) the recognized mobile satellite service communication installation specified in **3.2.4**;

(2) the MF radio installation specified in **3.2.2** (except for **3.2.2(b)**); and

(3) the means of initiating the transmission of ship-to-shore distress alerts by a radio service operating in any of the following ways:

(a) through the ~~polar orbiting~~ satellite service on 406 *MHz* as specified in **4.3-1(~~2~~1)**; or

(b) on HF using DSC as specified in **4.3-1(~~4~~3)**; or

(c) through a recognized mobile satellite service by an additional ship earth station.

2 ~~In addition to meeting the requirements of 4.2, every ship engaged on voyages beyond sea areas A1 and A2, but remaining within sea area A3, if it does not comply with the requirements of -1, is to be provided with:~~

~~(1) an MF/HF radio installation; and~~

~~(2) means of initiating the transmission of ship-to-shore distress alerts by a radio communication service other than HF operating either:~~

~~(a) through the polar orbiting satellite service on 406/121*MHz* as specified in 4.3-1(2); or~~

~~(b) through a recognized mobile satellite service by a ship earth station.~~

It is to be possible to initiate transmission of distress alerts by the radio installations specified in **-1** above from the position from which the ship is normally navigated.

3 ~~It is to be possible to initiate transmission of distress alerts by the radio installation as specified in -1(1), -1(2), -1(3), -2(1) and -2(2) from the position from which the ship is normally navigated.~~ Requirement **-1(3)(a)** may be satisfied by installing any of the following:

(1) the EPIRB specified in **3.2.7** close to the position from which the ship is normally navigated but at a location whereby it can still float free of the ship in an emergency; or

(2) the EPIRB specified in **3.2.7** installed at a location other than **(1)** above, provided that this EPIRB has a means of remote activation which is installed near the position from which the

ship is normally navigated; or

(3) a second EPIRB installed near the position from which the ship is normally navigated.

4 ~~Ships constructed before 1 February 1997, when such ships are exclusively engaged on voyages within sea areas A2 and A3, may be exempted from the requirement of **3.2.1(1)** and **3.2.1(3)** provided that such ships maintain a continuous listening watch on VHF channel 16 at the position from which the ship is normally navigated.~~

In addition, the ships are to be capable of transmitting and receiving general radiocommunications by either of the following means:

(1) a recognized mobile satellite service ship earth station; or

(2) a radio installation operating on working frequencies in the MF band or HF band.

5 The requirements in **4(1)** and **4(2)** above may be satisfied by the addition of this capability in the equipment required by **1(1)** or **1(2)** above, respectively.

Section 4.6 has been amended as follows.

4.6 Radio Equipment - Sea Areas ~~A1, A2, A3 and~~ A4

1 ~~In addition to meeting the requirements of **4.2**, every ship engaged on voyages in all sea areas is to be provided with the radio equipment required by **4.5-2**, except that the devices required by **4.5-2(2)(b)** are not to be accepted as an alternative to that required by **4.5-2(2)(a)**. In addition, the ship is to comply with the requirement of **4.5-3**.~~ In addition to satisfying the requirements of **4.2**, every ship engaged on voyages within sea area A4 is to be provided with the following:

(1) the MF/HF radio installation specified in **3.2.3**; and

(2) a secondary means of initiating the transmission of ship-to-shore distress alerts through the satellite service on 406 *MHz*.

2 ~~Ships constructed before 1 February 1997 and engaged exclusively on voyages in sea areas A2, A3 and A4 may be exempted from the requirements of **3.2.1(1)** and **3.2.1(3)** provided that such ships maintain a continuous listening watch on VHF channel 16 at the position from which the ship is normally navigated.~~ It is to be possible to initiate transmission of distress alerts by the radio installations specified in **-1** above from the position from which the ship is normally navigated.

3 Requirement **-1(2)** above may be satisfied by installing any of the following:

(1) the EPIRB specified in **3.2.7** close to the position from which the ship is normally navigated but in a location whereby it can still float free of the ship in an emergency; or

(2) the EPIRB specified in **3.2.7** installed a location other than **(1)** above, provided that this EPIRB has a means of remote activation which is installed near the position from which the ship is normally navigated; or

(3) a second EPIRB installed near the position from which the ship is normally navigated.

Section 4.7 has been amended as follows.

4.7 Two-way Communication Equipment etc.

4.7.1 General

1 All two-way communication equipment (VHF, MF/HF and recognized mobile satellite service) carried on board which is capable of automatically including the ship's position in the distress alert is to be automatically provided with this information from a navigation receiver. ~~If such receiver is not installed~~ In the case of internal or external navigation receiver malfunction, the ship's position is to be manually updated at intervals not exceeding four *hours* so that it is always ready for transmission

by the equipment. Requirements related to the automatic updating of ship position are specified in *IMO* Resolutions *MSC*.511(105), *MSC*.512(105) and *MSC*.513(105).

2 (Omitted)

Section 4.8 has been amended as follows.

4.8 Maintenance Requirements*

1 Equipment is to be so designed that the main units can be replaced readily, without elaborate recalibration or readjustment.

2 Where applicable, equipment is to be so constructed and installed that it is readily accessible for inspection and on-board maintenance purposes.

3 Adequate information is to be provided to enable the equipment to be properly operated and maintained (refer to *IMO* Resolutions *A*.694(17), *A*.813(19) and *MSC/Circ.*862 for more details).

4 Adequate tools and spares are to be provided to enable the equipment to be maintained.

5 On ships engaged on voyages in sea areas A1 ~~and~~or A2, adequate steps are to be taken to ensure that radio installations are readily available for use by using such methods as duplication of equipment, shore-based maintenance or the at-sea electronic maintenance capability, or a combination of these.

6 On ships engaged on voyages in sea areas A3 ~~and~~or A4, adequate steps are to be taken to ensure that radio installations are readily available for use by using a combination of at least two methods such as duplication of equipment, shore-based maintenance or at-sea electronic maintenance capability.

7 All reasonable measures are to be taken to maintain the equipment in efficient working order and to comply with all the functional requirements specified in the Rules.

8 Satellite EPIRBs is to be annually tested (refer to *IMO* Resolutions *MSC*.1/Circ.1040/Rev.2 and *MSC*.514(105) for more details), either on board the ship or at an approved testing station, for all aspects of operational efficiency, with special emphasis on checking the emissions on operational frequencies, coding and registration, at the intervals specified below:

(1) within three months before the expiry date of the Passenger Ship Safety Certificate for passenger ships; and

(2) within three months before the expiry date, or within three months before or after the anniversary date of the Cargo Ship Safety Radio Certificate for cargo ships; and

Satellite EPIRBs are to be subject to maintenance at intervals not exceeding ~~5~~five *years* at an approved shore-based maintenance facility in accordance with the maintenance guidelines deemed appropriate by the Society.

Section 4.9 has been amended as follows.

4.9 Radio Life-saving Appliances

4.9.1 Two-way VHF Radiotelephone Apparatus

1 At least three two-way VHF radiotelephone apparatus are to be provided on every passenger ship and on every cargo ship of 500 ~~*tons*~~ *gross tonnage* ~~and upwards~~ or greater. At least two two-way VHF radiotelephone apparatus are to be provided on every cargo ship of 300 *tons gross tonnage* ~~and upwards~~ or greater but less than 500 ~~*tons*~~ *gross tonnage*. This two-way VHF radiotelephone apparatus may be portable or fitted in survival craft, and portable apparatuses may be stored on the navigation bridge.

2 Every passenger ship is to be provided with means for two-way on-scene radiocommunications for search and rescue purposes using the aeronautical frequencies 121.5 *MHz* and 123.1 *MHz* from the position from which the ship is normally navigated. In addition, such means may be portable.

4.9.2 ~~Survival Craft~~ Radar ~~Transponders~~ SART and ~~Survival Craft~~ AIS-SART

1 At least one radar ~~transponder~~ SART or AIS-SART is to be carried on each side of every passenger ship and of every cargo ship of 500 ~~*tons*~~ *gross tonnage* ~~and upwards~~ or greater. At least one radar transponder or AIS-SART is to be carried on every cargo ship of 300 ~~*tons*~~ *gross tonnage* ~~and upwards~~ or greater but less than 500 ~~*tons*~~ *gross tonnage* ~~and upwards~~ or greater.

2 The radar transponders or AIS-SARTs are to be stowed in such locations that they can be rapidly placed in any survival craft other than the liferaft required by Regulation 31.1.4, Chapter III, *SOLAS* Convention. Alternatively, one radar transponder or AIS-SART is to be stowed in each survival craft other than the liferaft required by Regulation 31.1.4, Chapter III, *SOLAS* Convention.

3 On ships carrying at least two radar SARTs or AIS-SARTs and equipped with free-fall lifeboats, one of the radar SARTs or AIS-SARTs is to be stowed in a free-fall lifeboat and the other is to be located in the immediate vicinity of the navigating bridge so that it can be utilized on board and be ready for transfer to any of the other survival craft other than the liferaft required by Regulation 31.1.4, Chapter III, *SOLAS* Convention.

4.10 Sources of Energy

4.10.3 Reserve Sources of Energy*

Sub-paragraph -1 has been amended as follows.

1 A reserve source or sources of energy are to be provided on every ship to supply the radio installation for the purpose of conducting distress, urgency and safety radio communications in the event of failure of the ship's main and emergency sources of electrical power. The reserve source or sources of energy are to be capable of simultaneously operating the VHF radio installation and, as appropriate for the sea area or sea areas for which the ship is equipped, either the MF radio installation, the MF/HF radio installation, or the recognized mobile satellite service communication installation and any of the additional loads ~~mentioned~~ specified in the following **-3**, **-4**, and **-7** for at least the following time periods~~of a least~~:

(1) one *hour* on ships provided with an emergency source of electrical power~~, if~~ when such sources of power comply~~ies~~ fully with all relevant requirements of **4.10.2**.

(2) six *hours* on ships not provided with an emergency source of electrical power complying fully with all relevant requirements of **4.10.2**.

Chapter 5 COMMUNICATION CONCERNING SHIPS OPERATING IN POLAR WATERS

5.3 Regulations (*Polar Code*, Part I-A, 10.3)

Title of Paragraph 5.3.1 has been amended as follows.

5.3.1 Ship Communication*

"Guidance for radio installations" has been partly amended as follows:

Chapter 2 SURVEYS

2.2 Registration Surveys

2.2.2 Surveys

1 Requirements ~~of the~~ for Registration Survey referred to ~~in paragraph~~ **2.2.2 of the Rules** are detailed below:

Sub-paragraph (4) has been amended as follows.

(4) ~~Ship~~ Radar ~~Transponders and Survival Craft Radar Tansponders~~ SART
   (a) (Omitted)
   (b) (Omitted)
   (c) (Omitted)
   (d) (Omitted)

2.3 Registration Maintenance Surveys

2.3.1 Special Surveys and Periodical Surveys

Requirements ~~of the~~ for Special Surveys and Periodical Surveys referred to in ~~paragraph~~ **2.3.1 of the Rules** are detailed below:

Sub-paragraph (4) has been amended as follows.

(4) ~~Ship~~ Radar ~~Transponders and Survival Craft Radar Transponders~~ SART
   (a) (Omitted)
   (b) (Omitted)
   (c) (Omitted)
   (d) (Omitted)

Chapter 3 RADIO INSTALLATIONS

Section 3.2 has been amended as follows.

3.2 Radio Equipment

3.2.1 VHF Radio Installations

1 (Omitted)

2 (Omitted)

3 A handset with an extension code, a handset with a fixed receptacle or a portable VHF radio-telephone apparatus is deemed to be adequate as means for radio communications from the wings of the navigation bridge as required by **3.2.1-2(1) of the Rules**.

4 In principle, VHF radio installations are to comply with the performance standards specified in *IMO* Resolution *MSC*.511(105).

3.2.2 MF Radio Installations

1 (Omitted)

2 (Omitted)

3 (Omitted)

4 (Omitted)

5 In principle, MF radio installations are to comply with the performance standards specified in *IMO* Resolution *MSC*.512(105).

3.2.3 MF/HF Radio Installations

1 (Omitted)

2 (Omitted)

3 (Omitted)

4 The MF/HF direct-printing telegraphy device ~~specified in **3.2.3(4) of the Rules**~~ need not be provided with an automatic receiving function of shore-to-ship navigational and meteorological warnings using NBDP. It may be designed to receive maritime safety information using a receiver of the MF/HF radio installations or by an exclusive maritime safety information receiver operating on the HF band. In principle, MF/HF radio installations are to comply with the performance standards specified in *IMO* Resolution *MSC*.512(105).

3.2.4 Recognized Mobile Satellite Service Communication Installations

1 (Omitted)

2 In principle, enhanced group calling receivers are to comply with the performance standards specified in *IMO* Resolution *MSC*.306(87) and INMARSAT-C ship earth stations of recognized mobile satellite service communication installations are to comply with the performance standards specified in *IMO* Resolutions *MSC*.434(98) and *MSC*.513(105).

3.2.5 ~~Ship~~ Radar ~~Transponders~~ SART and AIS-SART

1 The ~~ship~~ radar ~~transponder~~ SART specified in **3.2.5 of the Rules** is to comply with the following requirements:

(1) (Omitted)

(2) (Omitted)

(3) (Omitted)

(4) (Omitted)

(5) (Omitted)

2 In principle, radar SARTs are to comply with the performance standards specified in *IMO*

Resolution *MSC*.510(105) and AIS-SARTs are to comply with the performance standards specified in *IMO* Resolution *MSC*.246(83).

3.2.6 ~~International NAVTEX Receivers~~ Maritime Safety Information and Search And Rescue Related Information Receivers

1 Maritime safety information and search and rescue related information is to be watched at the position from which the ship is normally navigated.

2 A~~n~~ receiver for maritime safety information and search and rescue related information received in the MF band (international NAVTEX receiver) is to be capable of receiving on the frequency 518 *kHz* and, at the same time, either one of two or more frequencies other than 518 *kHz* recogni~~z~~sed for the transmission of NAVTEX information.

3 For the application of **3.2.6 of the Rules**, ships are to be provided with a receiver capable of receiving international NAVTEX service broadcasts if the ship is engaged on voyages in any area in which an international NAVTEX service is provided. If the ship is engaged in voyages in any area which an international NAVTEX service is not provided, the ship is to be provided with a receiver capable of receiving the HF narrow band direct printing (NBDP) service specified in *ITU-R* Recommendation M.688, or the ship is to be provided with the receiver specified in **3.2.4(2) of the Rules** capable of receiving broadcasts from an international Enhanced Group Call service that provides a service for the operating areas.

4 In principle, maritime safety information, and search and rescue related information receivers are to comply with the performance standards specified in *IMO* Resolution *MSC*.508(105).

3.2.7 Satellite Emergency Position Indicating Radio Beacon

1 (Omitted)

2 (Omitted)

3 (Omitted)

4 In principle, satellite emergency position indicating radio beacons are to comply with the performance standards specified in *IMO* Resolutions *A*.662(16) and *MSC*.471(101).

3.2.8 Two-way VHF Radiotelephone Apparatus

1 (Omitted)

2 In principle, two-way VHF radiotelephone apparatuses are to comply with the performance standards specified in *IMO* Resolution *MSC*.515(105).

~~**3.2.9 Survival Craft Radar Transponders**~~

~~The Survival Craft Radar Transponder specified in **3.2.9 of the Rules** is to comply with the requirements outlined in **3.2.5** above.~~

Chapter 4 COMMUNICATION SYSTEMS

Section 4.2 has been deleted.

~~**4.2 Basic Requirements for Radio Equipment**~~

~~A handset with an extension code, a handset with a fixed receptacle or a portable VHF radiotelephone apparatus is deemed to be adequate as facilities for radio communications from the wings of the navigation bridge as required by **4.2-2(1) of the Rules**.~~

Section 4.3 has been added as follows.

4.3 Radio Equipment - Sea Area A1

The wording "close to the position from which the ship is normally navigated but at a location whereby it can still float free of the ship in an emergency" means, for example, the wings of navigation bridges that are not accessible by only vertical ladders, or decks located above wheelhouses that are accessible by stairs or other means.

Section 4.4 has been amended as follows.

4.4 Radio Equipment - Sea Area~~s A1 and~~ A2

~~An MF/HF radio installation fulfills the requirements of and replaces the MF radio installation required by **4.4-1(1) of the Rules**. Where an MF/HF radio installation is provided instead of the MF radio installation, it need not be provided with an NBDP facility.~~

The wording "close to the position from which the ship is normally navigated but at a location whereby it can still float free of the ship in an emergency" means, for example, the wings of navigation bridges not accessible by only vertical ladders, or decks located above wheelhouses accessible by stairs.

Section 4.5 has been amended as follows.

4.5 Radio Equipment - Sea Area~~s A1, A2 and~~ A3

1 The MF radio installation required by **4.5-1(2) of the Rules** need not be provided with a continuous watchkeeping device other than for the DSC distress frequency 2,187.5 *kHz*.

2 The wording "close to the position from which the ship is normally navigated but at a location whereby it can still float free of the ship in an emergency" means, for example, the wings of navigation bridges not accessible by only vertical ladders, or decks located above wheelhouses accessible by stairs.

Section 4.6 has been added as follows.

4.6 Radio Equipment - Sea Area A4

The wording "close to the position from which the ship is normally navigated but at a location whereby it can still float free of the ship in an emergency" means, for example, the wings of navigation bridges not accessible by only vertical ladders, or decks located above wheelhouses accessible by stairs.

Section 4.8 has been added as follows.

4.8 Maintenance Requirements

1 (Omitted)
2 (Omitted)
3 Where duplication of equipment is chosen under the provision of **4.8-5** or **-6 of the Rules**, ~~a VHF radio installation, and~~ radio installations required according to the applicable sea areas are to be duplicated. ~~Duplicated radio installations, which are put into operation when the primary installations fail, are to comply with all the requirements specified for primary installations.~~ A VHF DSC continuous watchkeeping device, however, need not be duplicated, except when specified otherwise by the administration.
4 (Omitted)

Section 4.9 has been added as follows.

4.9 Radio Life-saving Appliances

4.9.1 Two-way VHF Radiotelephone Apparatus

1 In principle, the two-way VHF radiotelephone apparatus specified in **4.9.1-1 of the Rules** are to be complied with the performance standards specified in *IMO* Resolution *MSC*.515(105).
2 In principle, the two-way on-scene radiocommunications specified in **4.9.1-2 of the Rules** are to be complied with the performance standards specified in *IMO* Resolutions *MSC*.516(105) and *MSC*.80(70).

4.10 Sources of Energy

Paragraph 4.10.3 has been amended as follows.

4.10.3 Reserve Sources of Energy

1 (Omitted)
2 (Omitted)
~~**3** When an INMARSAT A or B communication installation is chosen as a mandatory installation, arrangements for power supply to the gyro compass are to be made to ensure continuous supply of the ship's heading signal in the event of failure of the ship's main and emergency sources of electrical power.~~
~~**4**~~**3** (Omitted)

Chapter 5 COMMUNICATION CONCERNING SHIPS OPERATING IN POLAR WATERS

5.3 Regulations

Paragraph 5.3.1 has been added as follows.

5.3.1 Ship Communication

In principle, the two-way on-scene and SAR coordination radiocommunications specified in **5.3.1-3 of the Rules** are to be complied with the performance standards specified in *IMO* Resolutions *MSC*.516(105) and *MSC*.80(70).