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STATUTORY INSTRUMENTS

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**1992 No. 3**

**The Merchant Shipping (Radio Installations) Regulations 1992**

**PART II**

**GMDSS SHIP REQUIREMENTS**

**Interpretation of Part II**

6. In this Part, the following expressions shall have the following meanings—

“Admiralty List of Radio Signals” means the document so entitled published by the Hydrographer of the Navy and any subsequent List containing the like information which the Hydrographer of the Navy considers relevant from time to time which replaces the Admiralty List of Radio Signals or replaces any subsequent List containing the like information; and a reference to any such List includes a reference to any Admiralty Notice to Mariners amending the same which the Hydrographer of the Navy considers relevant from time to time;

“area A1 ship” means a ship which goes to sea in sea area A1 only;

“area A2 ship” means a ship which goes to sea in sea area A2 only, or in sea areas A1 and A2;

“area A3 ship” means a ship which goes to sea in sea area A3 only, or in sea area A3 and also in sea area A1 or A2 or both those sea areas;

“area A4 ship” means a ship which goes to sea in sea area A4 only, or in sea area A4 and also in one or more of sea areas A1, A2 and A3;

“bridge-to-bridge communications” means safety communications between ships from the position from which the ships are normally navigated;

“continuous watch” means a radio watch which is not interrupted other than for brief intervals when the ship’s receiving capability is impaired or blocked by its own communications or when the facilities are under periodical maintenance or checks;

“direct-printing telegraphy” means an automated telegraphy technique which complies with the relevant recommendations specified in a Department of Transport Merchant Shipping Notice;

“DSC” means Digital Selective Calling being a technique using digital codes which enables a radio station to establish contact with, and transfer information to, another station or group of stations, and complying with the relevant recommendations as specified in Department of Transport Merchant Shipping Notices;

“EPIRB” (emergency position-indicating radiobeacon) means a station in the mobile service the emissions of which are intended to facilitate search and rescue operations;

“general radio communications” means operational and public correspondence traffic, other than distress, urgency and safety messages, conducted by radio;

“GMDSS general operator’s certificate” and “GMDSS restricted operator’s certificate” mean the certificates respectively so called in the Radio Regulations, issued in accordance with those

regulations, and in relation to a United Kingdom ship, associated with an authority from the Secretary of State issued under section 7(2) of the Wireless Telegraphy Act 1949(1) ;

“HF” means the frequency spectrum between 3000 kHz and 30 MHz;

“INMARSAT” means the Organisation established by the Convention on the International Maritime Satellite Organisation (INMARSAT) adopted on 3rd September 1976;

“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;

“locating” means the finding of ships, aircraft, units or persons in distress;

“maritime safety information” means navigational and meteorological warnings, meteorological forecasts and other urgent safety related messages broadcast to ships;

“MF” means the frequency spectrum between 300 kHz and 3000 kHz;

“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;

“radar transponder” means a survival craft radar transponder for search and rescue between ships or aircraft and survival craft;

“radio communication” means telecommunication by means of radio waves;

“radio communication service” means a service as defined in the Radio Regulations involving the transmission, emission and/or reception of radio waves for specific telecommunication purposes;

“radio log” means the record required to be kept by regulation 17;

“satellite EPIRB” means an EPIRB which is in the mobile-satellite service;

“sea area A1” means an area specified as sea area A1 in the Admiralty List of Radio Signals;

“sea area A2” means an area specified as sea area A2 in the Admiralty List of Radio Signals;

“sea area A3” means an area, excluding sea areas A1 and A2, within the coverage of an INMARSAT geostationary satellite in which continuous alerting is available;

“sea area A4” means any area of the sea which is not sea area A1, A2 or A3;

“service”: — a reference to any particular type of radio service is a reference to that service as defined in the Radio Regulations;

“ship earth station” means a mobile earth station in the maritime mobile-satellite service located on board ship;

“ship station” means a mobile station in the maritime mobile service located onboard a vessel which is not permanently moored, other than a survival craft station;

“survival craft station” means a mobile station in the maritime mobile service intended solely for survival purposes and located on any lifeboat, life-raft or other survival equipment;

“VHF” means the frequency spectrum between 30 MHz and 300 MHz.

### **Installation, location and control of radio equipment**

7.—(1) Every radio installation shall—

- (a) be 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;

- (b) be so located as to ensure the greatest possible degree of safety and operational availability;
- (c) be protected against harmful effects of water, extremes of temperature and other adverse environmental conditions;
- (d) be 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
- (e) be clearly marked with the call sign, the ship station identity and other codes as applicable for the use of the radio installation.

(2) Control of the VHF radiotelephone channels shall be immediately available on the navigating bridge convenient to the position from which the ship is normally navigated; where appropriate, facilities shall be available to permit radiocommunications from the wings of the navigating bridge; portable VHF equipment may be used to meet the latter provision.

(3) Each radio transmitter and receiver fitted in accordance with these Regulations shall be provided with a suitable antenna or antennas. The antennas shall be so constructed and sited as to enable each transmitter and receiver to perform its intended communication function effectively.

- (a) (4) (a) Where wire antennas are provided as part of a radio installation they shall be fitted with suitable insulators and, if suspended between supports liable to whipping, be protected against breakage. In addition, a spare wire antenna completely assembled for rapid replacement shall be carried.
- (b) Where MF and MF/HF radio installations are provided with an antenna which is not a supported wire antenna, a spare antenna of similar electrical characteristics shall be carried.

### **Radio equipment to be provided for all sea areas**

8.—(1) Every ship shall be provided with—

- (a) a VHF radio installation capable of transmitting and receiving—
  - (i) DSC on the frequency 156.525 MHz (channel 70). Means shall be provided to initiate the transmission of distress alerts on channel 70 from the position from which the ship is normally navigated; and
  - (ii) radiotelephony on the frequencies 156.300 MHz (channel 6), 156.650 MHz (channel 13) and 156.800 MHz (channel 16);
- (b) a VHF radio installation capable of maintaining a continuous DSC watch on channel 70 which may be separate from, or combined with, that required by paragraph (a)(i) of this regulation;
- (c) a radar transponder capable of operating in the 9 GHz band, which—
  - (i) shall be so stowed that it can be easily utilized; and
  - (ii) may be one of those required for a survival craft in accordance with the Merchant Shipping (Life-Saving Appliances) (Amendment) Regulations 1991(2) ;
- (d) if the ship is at sea in any area in which an international NAVTEX service is provided a receiver capable of receiving International NAVTEX service broadcasts;
- (e) a radio facility for reception of maritime safety information by the INMARSAT enhanced group calling system if the ship is at sea in any area of INMARSAT coverage but in which an international NAVTEX service is not provided;
- (f) subject to the provision of regulation 9(3) a satellite EPIRB complying with the requirements of Schedule I.

(2) During the period 1st February 1992 to 31st January 1999 inclusive every ship shall, in addition, be fitted with a radio installation consisting of a radiotelephone distress frequency watch receiver capable of operating on 2,182 kHz.

(3) During the period of 1st February 1992 to 31st January 1999 inclusive every ship shall, unless it is an A1 area ship, be fitted with a device for generating the radiotelephone alarm signal on the frequency 2,182 kHz.

#### **Additional radio equipment to be provided for area A1 ships**

9.—(1) In addition to meeting the requirements of regulation 8, every A1 area ship shall be provided with a radio installation capable of initiating the transmission of ship-to-shore distress alerts by operation from the position from which the ship is normally navigated, operating either—

- (a) on VHF using DSC; this requirement may be fulfilled by the VHF EPIRB required by paragraph (3) of this regulation if it is installed close to, or capable of remote activation from, the position from which the ship is normally navigated; or
- (b) through the polar orbiting satellite service on 406 MHz; this requirement may be fulfilled by the satellite EPIRB, required by regulation 8(1)(f) if it is installed close to, or capable of remote activation from, the position from which the ship is normally navigated; or
- (c) if the ship is at sea within coverage of MF coast stations equipped with DSC, on MF using DSC; or
- (d) on HF using DSC; or
- (e) through the INMARSAT geostationary satellite service; this requirement may be fulfilled by—
  - (i) an INMARSAT ship earth station; or
  - (ii) the satellite EPIRB, required by regulation 8(1)(f) if it is installed close to, or capable of remote activation from, the position from which the ship is normally navigated.

(2) The VHF radio installation, required by regulation 8(1)(a) shall also be capable of transmitting and receiving general radio communications using radiotelephony.

(3) Area A1 ships may, in lieu of being provided with the satellite EPIRB required by regulation 8(1)(f), be provided with an EPIRB which is—

- (a) 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;
- (b) installed in an easily accessible position;
- (c) ready to be manually released and capable of being carried by one person into a survival craft;
- (d) capable of floating free if the ship sinks and being automatically activated when afloat; and
- (e) capable of being activated manually.

#### **Additional radio equipment to be provided for area A1/A2 ships**

10.—(1) In addition to meeting the requirements of regulation 8, every area A1/A2 ship shall be provided with—

- (a) an MF radio installation capable of transmitting and receiving, for distress and safety purposes, on the frequencies—
  - (i) 2,187.5 kHz using DSC; and
  - (ii) 2,182 kHz using radiotelephony;

- (b) a radio installation capable of maintaining a continuous DSC watch on the frequency 2,187.5 kHz; such installation may be separate from, or combined with, that required by paragraph (a)(i) of this regulation; and
  - (c) means of initiating the transmission of ship-to-shore distress alerts by a radio service other than MF operating either—
    - (i) through the polar orbiting satellite service on 406 MHz; this requirement may be fulfilled by the satellite EPIRB, required by regulation 8(1)(f) if it is installed close to, or capable of remote activation from, the position from which the ship is normally navigated; or
    - (ii) on HF using DSC; or
    - (iii) through the INMARSAT geostationary satellite service; this requirement may be fulfilled by—
      - (A) the equipment specified in paragraph (3)(b) of this regulation; or
      - (B) the satellite EPIRB, required by regulation 8(1)(f) if it is installed close to, or capable of remote activation from, the position from which the ship is normally navigated.
- (2) Means shall be provided to initiate transmission of distress alerts by the radio installations specified in paragraphs (1)(a) and (1)(c) of this regulation from the position from which the ship is normally navigated.
- (3) The ship shall, in addition, be capable of transmitting and receiving general radiocommunications using radiotelephony or direct-printing telegraphy by either—
- (a) 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 fulfilled by the addition of this capability in the equipment required by paragraph (1)(a) of this regulation; or
  - (b) an INMARSAT ship earth station.

#### **Additional radio equipment to be provided for area A1/A2/A3 ships**

**11.—**(1) In addition to meeting the requirements of regulation 8, every area A1/A2/A3 ship shall be provided with either the following equipment—**ALTERNATIVE A**

- (a) an INMARSAT ship earth station capable of—
  - (i) transmitting and receiving distress and safety communications using direct-printing telegraphy;
  - (ii) initiating and receiving distress priority calls;
  - (iii) maintaining watch for shore-to-ship distress alerts, including those directed to specifically defined geographical areas;
  - (iv) transmitting and receiving general radiocommunications, using either radiotelephony or direct-printing telegraphy; and
- (b) an MF radio installation capable of transmitting and receiving, for distress and safety purposes, on the frequencies—
  - (i) 2,187.5 kHz using DSC; and
  - (ii) 2,182 kHz using radiotelephony; and
- (c) a radio installation capable of maintaining a continuous DSC watch on the frequency 2,187.5 kHz which may be separate from or combined with that required by paragraph (b) (i) of this regulation; and

- (d) means of initiating the transmission of ship-to-shore distress alerts by a radio service operating either—
- (i) through the polar orbiting satellite service on 406 MHz; this requirement may be fulfilled by the satellite EPIRB, required by regulation 8(1)(f) if it is installed close to, or capable of remote activation from, the position from which the ship is normally navigated; or
  - (ii) on HF using DSC; or
  - (iii) through the INMARSAT geostationary satellite service, either by an additional ship earth station or by the satellite EPIRB required by regulation 8(1)(f) if it is installed close to, or capable of remote activation from the position from which the ship is normally navigated;**ALTERNATIVE B**
- (a) an MF/HF radio installation capable of transmitting and receiving, for distress and safety purposes, on all distress and safety frequencies in the bands between 1,605 kHz and 4,000 kHz and between 4,000 kHz and 27,500 kHz—
- (i) using DSC;
  - (ii) using radiotelephony; and
  - (iii) using direct-printing telegraphy; and
- (b) equipment capable of maintaining DSC watch on 2,187.5 kHz, 8,414.5 kHz and on at least one of the distress and safety DSC frequencies 4,207.5 kHz, 6312 kHz, 12,577 kHz or 16,804.5 kHz; the equipment shall be such that it shall be possible at any time to select any of these DSC distress and safety frequencies; this equipment may be separate from, or combined with, the equipment required by paragraph (a) above; and
- (c) means of initiating the transmission of ship-to-shore distress alerts by a radiocommunication service other than HF operating either—
- (i) through the polar orbiting satellite service on 406 MHz; this requirement may be fulfilled by the satellite EPIRB, required by regulation 8(1)(f) if it is installed close to, or capable of remote activation from, the position from which the ship is normally navigated; or
  - (ii) through the INMARSAT geostationary satellite service; this requirement may be fulfilled by—
    - (A) an INMARSAT ship earth station; or
    - (B) the satellite EPIRB, required by regulation 8(1)(f) if it is installed close to, or capable of remote activation from, the position from which the ship is normally navigated; and
- (d) in addition, means of transmitting and receiving general radiocommunications using radiotelephony or direct-printing telegraphy shall be provided by an MF/HF radio installation operating on working frequencies in the bands between 1,605 kHz and 4,000 kHz and between 4,000 kHz and 27,500 kHz; this requirement may be fulfilled by the addition of this capability in the equipment required by paragraph (a) above.
- (2) Means shall be provided to initiate transmission of distress alerts from the position from which the ship is normally navigated by the radio installations specified in paragraphs (a), (b) and (d) of ALTERNATIVE A and (a) and (c) of ALTERNATIVE B of this regulation.

#### **Additional radio equipment to be provided for area A1/A2/A3/A4 ships**

**12.** In addition to meeting the requirements of regulation 8, area A1/A2/A3/A4 ships shall be provided with the radio installations and equipment specified in ALTERNATIVE B in regulation 11(1), except that the equipment required by (c)(ii) of ALTERNATIVE B shall not be

accepted as an alternative to that required by regulation (c)(i) of ALTERNATIVE B, which shall always be provided. Such ships shall in addition comply with the requirements of regulation 11(2).

### **Radio watches**

**13.**—(1) Every ship while at sea shall maintain a continuous watch—

- (a) on VHF DSC channel 70, if the ship, in accordance with the requirements of regulation 8(1)(b), is fitted with a VHF radio installation;
- (b) on the distress and safety DSC frequency 2,187.5 kHz, if the ship, in accordance with the requirements of regulation 10(1)(b) or paragraph (c) of ALTERNATIVE A in regulation 11, is fitted with an MF radio installation;
- (c) on the distress and safety DSC frequencies 2,187.5 kHz and 8,414.5 kHz and also on at least one of the distress and safety DSC frequencies 4,207.5 kHz, 6,312 kHz, 12,577 kHz or 16,804.5 kHz, appropriate to the time of day and the geographical position of the ship, if the ship, in accordance with the requirements of paragraph (b) of ALTERNATIVE B in regulation 11 or 12, is fitted with an MF/HF radio installation; this watch may be kept by means of a scanning receiver;
- (d) for satellite shore-to-ship distress alerts, if the ship, in accordance with the requirements of paragraph (a) of ALTERNATIVE A in regulation 11, is fitted with an INMARSAT ship earth station.

(2) Every ship while at sea shall maintain a radio watch for broadcasts of maritime safety information on the appropriate frequency or frequencies on which such information is broadcast for the area in which the ship is navigating.

(3) During the period 1st February 1992 to 31st January 1999 inclusive every ship while at sea shall maintain, when practicable, a continuous listening watch on VHF channel 16; such watch shall be kept at the position from which the ship is normally navigated.

(4) During the period 1st February 1992 to 31st January 1999 inclusive every ship required to carry a radiotelephone watch receiver shall maintain while at sea a continuous watch on the radiotelephone distress frequency 2,182 kHz; such watch shall be kept at the position from which the ship is normally navigated.

### **Sources of energy**

**14.**—(1) There shall be available at all times while the ship is at sea a supply of electrical energy sufficient to operate the radio installations and to charge any batteries used as part of a reserve source or sources of energy for the radio installations.

(2) A reserve source or sources of energy shall be provided on every ship, to supply radio installations, used for the purpose of conducting distress and safety radiocommunications, in the event of failure of the ship's main and emergency sources of electrical power. The reserve source or sources of energy shall be capable of simultaneously operating the VHF radio installation required by regulation 8(1)(a) and, as appropriate for the sea area or sea areas for which the ship is equipped, either the MF radio installation required by regulation 10(1)(a), the MF/HF radio installation required by subparagraph (a) of ALTERNATIVE B in regulation 11 or regulation 12, or the INMARSAT ship earth station required by subparagraph (a) of ALTERNATIVE A in regulation 11 and any of the additional loads mentioned in paragraphs (5), (6) and (9) of this regulation for a period of at least—

- (a) one hour, on ships constructed on or after 1st February 1995;
- (b) one hour, on ships constructed before 1st February 1995, if the emergency source of electrical power complies fully with all relevant requirements of the Merchant Shipping

(Passenger Ship Construction and Survey) Regulations 1984(3) and the Merchant Shipping (Cargo Ship Construction and Survey) Regulations 1984(4) including the requirements to supply the radio installations; and

- (c) six hours, on ships constructed before 1st February 1995, if the emergency source of electrical power is not provided or does not comply fully with all relevant requirements of the Merchant Shipping (Passenger Ship Construction and Survey) Regulations 1984(5) and the Merchant Shipping (Cargo Ship Construction and Survey) Regulations 1984(4) including the requirements to supply the radio installations.

(3) The reserve source or sources of energy need not be capable of supplying independent HF and MF radio installations simultaneously.

(4) The reserve source or sources of energy shall be independent of the propelling power of the ship and the ship's electrical system.

(5) Where, in addition to the VHF installation, two or more of the other radio installations, referred to in paragraph (2) of this regulation, can be connected to the reserve source or sources of energy, such sources shall be capable of simultaneously supplying, for the period specified, as appropriate, in subparagraphs (2)(a), (2)(b) or (2)(c) of this regulation the VHF radio installation and either—

- (a) all other radio installations which can be connected to the reserve source or sources of energy at the same time; or
- (b) if only one of the other radio installations can be connected to the reserve source or sources of energy at the same time as the VHF radio installation, whichever of the other radio installation will consume the most power.

(6) The reserve source or sources of energy may be used to supply the electrical lighting required by regulation 7(1)(d).

(7) Where a reserve source of energy consists of a rechargeable accumulator battery or batteries—

- (a) a means of automatically charging such batteries shall be provided which shall be capable of recharging them to minimum capacity requirements within 10 hours; and
- (b) the capacity of the battery or batteries shall be checked when the ship is not at sea and, using an appropriate method, at intervals not exceeding 12 months.

(8) The siting and installation of accumulator batteries which provide a reserve source of energy shall be such as to ensure—

- (a) the highest degree of service;
- (b) a reasonable lifetime;
- (c) reasonable safety;
- (d) that battery temperatures remain within the manufacturer's specifications whether under charge or idle; and
- (e) that when fully charged, the batteries will provide at least the minimum required hours of operation under all weather conditions.

(9) If an uninterrupted input of information from the ship's navigational or other equipment to a radio installation required by this Part is needed to ensure its proper performance, means shall be provided to ensure the continuous supply of such information in the event of failure of the ship's main or emergency source of electrical power.

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(3) S.I. 1984/1216.

(4) S.I. 1984/1217.

(5) S.I. 1984/1216.

(4) S.I. 1984/1217.



(10) For the purpose of calculating the required capacity of the reserve source of energy, the total current used in calculations shall be equal to the highest sum of all the radio installations which simultaneously can be connected to the source of energy, based on the following—

- (a) the current consumption of the VHF receiver;
- (b) one fifth of the current consumption of the VHF transmitter;
- (c) the current consumption of a MF or MF/HF receiver and of the transmitter when it is in a condition that operation of the “press to transmit” switch will make it ready for immediate transmission;
- (d) one third of the current which may be drawn by a MF or MF/HF transmitter for speech transmission on the frequency at which the current consumption of the transmitter is at a maximum;
- (e) the current consumption of an INMARSAT ship earth station when it is receiving transmissions;
- (f) one quarter of the current which may be drawn by an INMARSAT ship earth station when it is transmitting in the mode at which the current consumption is at a maximum; and
- (g) the total current consumption of all additional loads to which the reserve source may supply energy in times of distress or emergency.

#### **Serviceability and maintenance requirements**

15.—(1) Equipment shall be so designed that the main units can be replaced readily, without elaborate recalibration or readjustment.

(2) Where appropriate, equipment shall be so constructed and installed that it is readily accessible for inspection and on-board maintenance purposes.

(3) Adequate information shall be provided on board the ship to enable the equipment to be properly operated and maintained.

(4) Adequate tools and spares shall be provided on board the ship to enable the equipment to be maintained.

(5) Radio equipment required by this Part shall be maintained to meet the recommended performance standards of such equipment.

(6) On ships while at sea the availability of equipment shall be ensured, as required in Merchant Shipping Notice No. M 1475.

(7) In all United Kingdom ships to which these Regulations apply a person nominated by the Master, normally the person qualified under regulation 16(1), shall, while the ship is at sea, carry out the appropriate tests and checks specified in Schedule 2 to these Regulations. If any of the radio installations required by these Regulations are not in working order, the nominated person shall inform the Master and record details of the deficiencies in the Radio Log.

#### **Radio personnel**

16.—(1) Every ship shall carry a person or persons qualified for distress and safety radio communication purposes as specified in paragraph (2) of this regulation. Such person or persons shall be holders of certificates specified in the Radio Regulations as appropriate. One such person shall be designated by the Master to have primary responsibility for radio communications during distress incidents.

(2) On area A1 ships the person qualified as mentioned in paragraph (1) above shall hold at least a GMDSS restricted operator’s certificate issued in accordance with sub-section D of Section IIIA of Article 55 of the Radio Regulations. On area A1/A2, A1/A2/A3 and A1/A2/A3/A4 ships the person

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qualified as mentioned in paragraph (1) above shall hold a GMDSS general operator's certificate issued in accordance with sub-section C of Section IIIA of Article 55 of the Radio Regulations.

### **Radio records**

17.—(1) A record shall be kept of the matters specified in Schedule 3.

(2) The Master shall inspect and sign each day's entries in the Radio Log.

(3) A record ("the Radio Log") shall be available for inspection by officers authorised by the Secretary of State to make such inspection.

(4) Regulation 9 of the Merchant Shipping (Official Log Books) Regulations 1981<sup>(6)</sup> shall apply to the Radio Log as it applies to the official log book.

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<sup>(6)</sup> S.I. 1981/569, to which there is an amendment not relevant to these Regulations.