GOVERNMENT GAZETTE

OF THE

REPUBLIC OF NAMIBIA

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Government Notice

MINISTRY OF WORKS, TRANSPORT AND COMMUNICATION

No. 60 2002

MERCHANT SHIPPING ACT, 1951 (ACT NO. 57 OF 1951): MERCHANT SHIPPING (RADIO INSTALLATIONS) REGULATIONS

The Minister of Works, Transport and Communications has under section 356 of the Merchant Shipping Act, 1951 -

(a) made the Regulations set out in the Schedule; and

(b) repealed the Merchant Shipping (Radio Installations) Regulations promulgated under Government Notice No. 19 of 2 March 1998.

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CHAPTER 1
GENERAL

Definitions

1. In these Regulations, an expression to which a meaning has been assigned in the Act has that meaning and, unless the context otherwise indicates -

"adjacent sea area" means the sea area extending 250 nautical miles from the low water line of Namibia and South Africa;

"cargo ship" means any ship other than a passenger ship or a fishing vessel;

"Class A ship" means a class A fishing vessel, a cargo ship of 300 tons or more that undertakes voyages beyond the NEZ and the adjacent sea area, a new cargo ship of 300 tons or more, a passenger ship of 300 tons or more, a foreign-going passenger ship or a new passenger ship;

"Class B ship" means a class B fishing vessel or a cargo ship of less than 300 tons that undertakes regular voyages beyond the NEZ and the adjacent sea area;

"Class C ship" means a class C fishing vessel, an existing passenger ship of less than 300 tons other than a foreign-going passenger ship, a cargo ship of less than 300 tons or an existing cargo ship of 300 tons or more that operates beyond the VHF range of a Coast station, but does not undertake voyages beyond the NEZ or the adjacent sea area;

"Class D ship" means a class D fishing vessel, an existing passenger ship of less than 300 tons, a cargo ship of less than 300 tons or an existing cargo ship of 300 tons or more that does not undertake voyages beyond the VHF range of a coast station;

"coast" means the land and water landward of the baselines from which the breadth of territorial waters is measured;

"coast station" means a land station in the maritime service approved by the Permanent Secretary and which maintains a continuous watch;

"constructed", in relation to a ship, means having her keel laid or being at a similar stage of construction;

"Construction Regulations", in relation to a fishing vessel, means the Construction and Equipment Regulations for Fishing Vessels promulgated under Government Notice No. 61 of 2002;

"continuous watch" means an uninterrupted radio watch, but for brief intervals when the receiving capability of that radio watch is impaired or blocked by own communications or periodical maintenance or checks;

"Convention ship" means a ship to which the 1974 SOLAS Convention and the 1978 Protocol or the SFV apply;

"defined fishing zone" means the exclusive economic zone of Namibia as defined in the Territorial Sea and Exclusive Economic Zone of Namibia Act, 1990 (Act No. 3 of 1990);

"EPIRB" means an emergency position-indicating radio beacon stationed in a mobile service, the emissions of which are intended to facilitate search and rescue operations;

"existing ship" means -

(a) a ship with radio equipment fitted before the commencement of these Regulations; or

(b) a ship with radio equipment part of which was installed before the commencement of these Regulations and the rest of which consists of parts installed in replacement of identical parts or of parts that comply with the relevant provisions of these Regulations;

"fishing vessel" means any of the following classes of vessels used for catching fish or other living resources of the sea for financial gain or reward:

Class A: an existing fishing vessel of 45 metres or more in length that operates or undertakes regular voyages beyond the defined fishing zone and the adjacent sea area and every new fishing vessel of 45 metres or more in length;

Class B: a fishing vessel of less than 45 metres in length that operates or undertakes regular voyages beyond the defined fishing zone and the adjacent sea area;

Class C: an existing fishing vessel that operates beyond the VHF range of a coast station, but does not operate or undertake voyages beyond the defined fishing zone and the adjacent sea area, plus every new fishing vessel of less than 45 metres that operates beyond the VHF range of a coast station, but does not operate or undertake voyages beyond the defined fishing zone and the adjacent sea area;

Class D: a fishing vessel operating solely within the VHF range of a coast station, whether or not that coast station is a remote-controlled coast station;

"GMDSS" means the global maritime distress and safety system;

"GMDSS ship" means a ship provided with a GMDSS installation in accordance with Chapters 1 and 2;

"length", in relation to a ship, means the registered length which is recorded on the relevant International Tonnage Certificate or the Namibian Tonnage Certificate;

"maintenance", in relation to a radio installation, means any activity intended to keep that installation in satisfactory working condition, and includes tests, measurements, replacements, adjustments and repairs;

"maritime mobile service" means a maritime mobile service as defined in the Radio Regulations;

"maritime service" means a maritime service as defined in the Radio Regulations;

"Ministry" means the ministry responsible for works, transport and communication;

"mobile service" means a mobile service as defined in the Radio Regulations;

"new ship" means any ship that is not an existing ship;

"Non-Convention ship" means a ship to which the 1974 SOLAS Convention and the 1974 Protocol and the SFV do not apply;

"Non-GMDSS ship" means a ship provided with a radio installation in accordance with Chapters 1 and 3.;

"Organization" means the International Maritime Organization;

"radio installation," in relation to a ship, means any radio installation provided on board a ship in accordance with these Regulations, including its associated antennae, inter-connecting circuits and, where appropriate, sources of energy;

"radio log" means the diary of the radio service;

"radio operator" means a person holding a valid appropriate certificate issued or recognised by the relevant authority authorised to issue or recognise that certificate;

"Radio Regulations" means the Radio Regulations annexed to the International Telecommunications Union Convention, signed in Geneva on 22 December 1992;

"satellite EPIRB" means an earth station in the mobile-satellite service, the emissions of which are intended to facilitate search and rescue operations;

"SFV" means the 1977 Torremolinos International Convention for the Safety of Fishing Vessels, signed during a conference held in Torremolinos from 7 March to 2 April 1977;

"SFV certificate" means a certificate issued in compliance with SFV;

"ship station" means a mobile station, other than a survival craft station, in the maritime mobile service located on board a ship that is not permanently moored;

"SOLAS certificate" means a certificate issued in compliance with the 1974 SOLAS Convention and the 1978 Protocol;

"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;

"the Act" means the Merchant Shipping Act, 1951 (Act No. 57 of 1951);

"tons", in relation to a ship, means the gross tonnage units which is recorded on the relevant International Tonnage Certificate or the Namibian Tonnage Certificate; and

"VHF range" means 12 nautical miles from the nearest coast station, unless the ship station owner proves by means of the formula in Annexure 8 that the VHF range is more or less than 12 nautical miles.

"1974 SOLAS Convention" means the International Convention for Safety of Life at Sea, signed in London on 1 November 1974, and the 1978 Protocol;

"1978 Protocol" means the Protocol to the 1974 SOLAS Convention, acceded to by Namibia on 27 November 2000;

"1993 SFV Protocol" means the 1993 Torremolinos Protocol signed during a Convention held in Torremolinos from 22 March to 2 April 1993;

Application of Regulations

2. (1) Subject to subregulation (6), these Regulations apply to Namibian ships and to every ship which is not of Namibian nationality, but which is chartered or operated by Namibians or Namibian companies, as stated in subregulations (2) to (5), inclusive.

(2) Every Class A ship and every other new ship must comply with Chapters 1 and 2.

(3) Every existing class C ship of 300 tons or more and every existing class C fishing vessel of 45 metres in length or more must comply -

(a) until 31 December 2002, with Chapter 1 and either Chapter 2 or Chapter 3; and

(b) from 1 January 2003, with Chapters 1 and 2 only.

(4) Every existing Class B ship must comply -

(a) until 31 December 2004, with Chapter 1 and either Chapter 2 or Chapter 3; and

(b) from 1 January 2005, with Chapters 1 and 2 only.

(5) Every existing Class C and D ship of less than 300 tons and every class C and D fishing vessel of less than 45 metres in length must comply -

(a) until 31 December 2006, with Chapter 1 and either Chapter 2 or Chapter 3; and

(b) from 1 January 2007, with Chapters 1 and 2 only.

(6) Every Class A, B, C and D ship must be provided with documents and publications in accordance with Annexure 7.

(7) These Regulations do not apply to a ship to which the 1974 SOLAS Convention and the SFV do not apply, if that ship is in Namibia or its territorial sea as defined in section 2 of the Territorial Sea and Exclusive Economic Zone of Namibia Act, 1990 (Act No. 3 of 1990), because of stress of weather or any circumstances that the owner, master, or charterer could not have prevented.

Exemptions and equivalents

3. (1) The Permanent Secretary, or a staff member in the Ministry authorised by him or her, may, with or without conditions, in writing exempt any ship or class or description of ship from any provision of these Regulations and may, subject to giving reasonable notice, amend or cancel any such exemption.

(2) Without limiting the generality of subregulation (1), where these Regulations require that -

(a) a particular fitting, material, appliance, apparatus, item of equipment or type thereof must be fitted or carried in a ship; or

(b) any particular provision must be made, or any procedure or arrangement must be complied with,

the Permanent Secretary, or a staff member in the Ministry authorised by him or her, may in writing permit any other fitting, material, appliance, apparatus, item of equipment or type thereof to be fitted or carried, or any other provision, procedure or arrangement to be made in that ship, if he or she is satisfied by trial thereof or otherwise that such fitting, material, appliance, apparatus, item of equipment or type thereof, or that any particular provision, procedure or arrangement is at least as effective as that which is required by these Regulations.

Ships and persons in distress

4. Nothing in these Regulations prevents the use by any ship, survival craft, or persons in distress of any means at their disposal to attract attention, make known their position and obtain help.

Performance standards, satellite EPIRB registration and other Regulations

5. (1) Equipment required by these Regulations must conform -

(a) in respect of Convention ships, to performance standards not inferior to the performance standards adopted from time to time by the Organisation; or

(b) in respect of non-Convention ships, to compatible performance specifications which comply with the Radio Regulations and SFV Construction Regulations.

(2) The owner of a ship referred to in regulations 2(1) and 20(6) -

(a) that is required by these Regulations to carry a satellite EPIRB; or

(b) that is not so required, but on which a satellite EPIRB is carried,

must register the particulars of that satellite EPIRB with the Ministry in the form prescribed in Annexure 1.

(3) All ships must comply with the Radio Regulations.

(4) All fishing vessels must comply with the Construction Regulations.

CHAPTER 2
GMDSS SHIP REQUIREMENTS

Definitions

6. In this Chapter, unless the context otherwise indicates -

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

"DSC" means a digital selective calling technique using digital codes that enables a radio station to establish contact with and transfer information to another radio station or group of radio stations;

"direct-printing telegraphy" means automated telegraphy techniques;

"enhanced group calling" means a system providing a simple and automated means of receiving marine safety information on board a ship at sea and in coastal waters;

"general radiocommunications" means operational and public correspondence traffic, other than distress, urgency and safety messages, conducted by radio;

"GMDSS general operator's certificate" means the GMDSS general operator's certificate issued or recognised by the authority empowered to issue or recognise those certificates;

"GMDSS restricted operator's certificate" means the GMDSS restricted operator's certificate issued or recognised by the authority empowered to issue or recognise those certificates;

"HF" means the frequency spectrum between 3 000 kHz and 30 MHz;

"INMARSAT" means the Organisation established by the Convention on the International Maritime Satellite Organisation;

"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," in relation to ships, aircraft, or persons in distress, means the finding of those ships, aircraft, or persons;

"maritime safety information" means navigational warnings, meteorological forecasts or reports and other urgent safety-related messages broadcast to ships;

"MF" means the frequency spectrum between 300 kHz and 3 000 kHz;

"polar orbiting satellite service" means a service that is based on polar orbiting satellites that receive and relay distress alerts from satellite EPIRBs;

"SART" means a survival craft search and rescue radar transponder for search and rescue between ships or aircraft and survival craft;

"sea area A1" means an area within the radiotelephone coverage of at least one VHF coast station in which continuous DSC alerting is available;

"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;

"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 an area outside sea areas A1, A2 and A3;

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

"VHF" means the frequency spectrum between 30 MHz and 300 MHz.

Functional requirements

7. While at sea, a ship must have the capacity -

(a) subject to regulations 10(1)(a) and 12 (2) (d) (iii), of transmitting ship-to-shore distress alerts by at least two separate and independent means, each using a different radiocommunication service;

(b) of receiving shore-to-ship distress alerts;

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

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

(e) of transmitting and receiving on-scene communications;

(f) of transmitting and receiving signals for locating;

(g) of transmitting and receiving maritime safety information;

(h) subject to regulation 16(8), of transmitting and receiving general radiocommunications to and from shore-based radio systems or networks; and

(i) of transmitting and receiving bridge-to-bridge communications.

Radio installations

8. (1) Every radio installation referred to in regulations 9,10, 11 and 12 must -

(a) be installed in such a way that no harmful interference of mechanical, electrical or other origin affects its proper use, and to ensure electromagnetic compatibility and avoidance of harmful interaction with other equipment and systems and the greatest possible degree of safety and operational availability;

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

(c) be provided with reliable, permanently-arranged electrical lighting, independent of the main and emergency sources of electrical energy, for the adequate illumination of the radio controls for operating that radio installation; and

(d) be clearly marked with the call sign, the ship station identity and such other codes as are applicable for the use of that radio installation.

(2) Control of the VHF radiotelephone channels required for navigational safety must be immediately available on the navigating bridge, convenient to the conning position and where necessary facilities, including portable VHF equipment, must be available to permit radiocommunications from the wings of the navigating bridge.

(3) Every transmitter and receiver fitted in accordance with this Chapter must be provided with a suitable antennae, so constructed and sited to enable each item of radio equipment to perform its intended communication function effectively.

(4) Where wire transmitting antennae are provided as part of the radio installation-

(a) it must be fitted with suitable insulators;

(b) which are suspended between supports liable to whipping, they must be protected against breakage; and

(c) a spare antenna, completely assembled for rapid placement, must be carried.

(5) Where MF and MF/HF radio installations are provided with a transmitting antenna that is not a supported wire antenna, a spare antenna of similar electrical characteristics must be carried.

(6) The normal range of the radiotelephone transmitter must comply with regulation 33.

Radio equipment: General

9. (1) A ship must be fitted with -

(a) a VHF radio installation capable of transmitting and receiving -

(i) DSC on 156.525 MHz (channel 70), whereby it must be possible to initiate the transmission of distress alerts on that channel from the position from which the ship is normally navigated; and

(ii) radiotelephony on 156.300 MHz (channel 6), 156.650 MHz (channel 13) and 156.800 MHz (channel 16);

(b) a radio installation capable of maintaining a continuous DSC watch on VHF channel 70, which may be separate from or combined with the radio installation required by paragraph (a)(i);

(c) two SARTs, capable of operating in the 9 GHz band, carried on both sides of the bridge and stowed inside the wheelhouse near the exit doors from the Bridge so as to enable rapid placement in a survival craft in respect of Class A cargo ships of 500 tons and more, Class A fishing vessels and Class A passenger ships;

(d) one SART, capable of operating in the 9 GHz band, carried inside the wheelhouse near the most convenient exit door and stowed so as to enable rapid placement in a survival craft in respect of class A cargo ships under 500 tons, Class B ships and Class C ships;

(e) 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;

(f) a radio facility for the reception of maritime safety information by the INMARSAT enhanced group calling system, if the ship is engaged on voyages in any area of INMARSAT coverage, but in which an international NAVTEX service is not provided or unreliable: Provided that this provision does not apply to a ship engaged on a voyage in an area where an HF direct-printing telegraphy maritime safety information service is provided and that ship is fitted with equipment capable of receiving that service;

(g) subject to regulation 10(3), a satellite EPIRB that is -

(i) capable of transmitting a distress alert through either the polar orbiting satellite service operating in the 406 MHz band or, if the ship is engaged only on voyages within areas of INMARSAT coverage, the INMARSAT geostationary satellite service operating in the 1.6 GHz band;

(ii) installed in an easily accessible position;

(iii) capable of being manually released and carried by one person into a survival craft;

(iv) capable of floating free if the ship sinks, and of being automatically activated when afloat; and

(v) capable of being activated manually; and

(h) at least three portable two-way VHF radiotelephone transceivers in respect of Class A cargo ships of 500 tons or more, Class A fishing vessels and Class A passenger ships;

(i) at least two portable two-way VHF radiotelephone transceivers in respect of Class A cargo ships of 300 tons or more, but less than 500 tons, Class B and C fishing vessels of 24 metres or more in length, and Class C and D passenger ships of 25 tons or more;

(j) at least one portable two-way VHF radiotelephone transceiver in respect of Class B, C and D fishing vessels of less than 24 metres in length and other class B, C and D ships of less than 300 tons;

(k) in respect of the portable VHF transceivers provided on Convention ships, sealed Lithium batteries with valid expiry dates; and

(l) in respect of Lithium batteries provided for portable VHF transceivers on non-Convention ships, seals with valid expiry dates which may not be broken except for emergency use, and if the seal is broken for any reason, the battery must be replaced as soon as possible.

Radio equipment : Sea area A1

10. (1) In addition to meeting the requirements of regulation 9, a ship engaged on voyages exclusively in sea area A1 must be fitted 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, operating -

(a) on VHF using DSC, which requirement may be met by the EPIRB specified in subregulation (3), by installing that EPIRB close to the position from which the ship is normally navigated or by remote activation of the EPIRB from that position; or

(b) through the polar orbiting satellite service on 406 MHz, which requirement may be met by the satellite EPIRB referred to in regulation 9(1)(f), either by installing the satellite EPIRB close to the position from which the ship is normally navigated or by remote activation of the satellite EPIRB from that position; or

(c) if the ship is engaged on voyages within areas of coverage of MF coast stations fitted with DSC, on MF using DSC; or

(d) on HF using DSC; or

(e) through the INMARSAT geostationary satellite service, which requirement may be met by -

(i) an INMARSAT ship earth station, which requirement may be met by such stations capable of two-way communications, such as Standard A or C ship earth stations; or

(ii) the satellite EPIRB referred to in regulation 9(1)(g), either by installing the satellite EPIRB close to the position from which the ship is normally navigated or by remote activation of the satellite EPIRB from that position.

(2) The VHF radio installation required by regulation 9(1)(a) must have the capacity of also transmitting and receiving general radiocommunications using radiotelephony.

(3) Ships engaged on voyages exclusively in sea area A1 may carry, in lieu of the satellite EPIRB required by regulation 9(1)(g), an EPIRB that is -

(a) capable of transmitting a distress alert using DSC on VHF channel 70 and providing locating by means of a SART operating in the 9 GHz band;

(b) installed in an easily accessible position;

(c) capable of being manually released and carried by one person into a survival craft;

(d) capable of floating free if the ship sinks, and of being automatically activated when afloat; and

(e) capable of being activated manually.

Radio equipment : Sea areas A1 and A2

11. (1) A ship engaged on voyages beyond sea area A1, but remaining within sea area A2, must be fitted with -

(a) an MF radio installation capable of transmitting and receiving, for distress and safety purposes, on:

(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 2 187.5 kHz, which may be separate from or combined with the radio installation required by paragraph (a)(i); and

(c) means of initiating the transmission of ship-to-shore distress alerts by a radio service, other than MF, operating -

(i) through the polar orbiting satellite service on 406 MHz, which requirement may be met by the satellite EPIRB referred to in regulation 9(1)(g), either by installing the satellite EPIRB close to the position from which the ship is normally navigated or by remote activation of the satellite EPIRB from that position; or

(ii) on HF using DSC; or

(iii) through the INMARSAT geostationary satellite service, which requirement may be met by -

(aa) the equipment prescribed by subregulation (3)(b); or

(bb) the satellite EPIRB referred to in regulation 9(1)(g), either by installing the satellite EPIRB close to the position from which the ship is normally navigated or by remote activation of the satellite EPIRB from that position.

(2) The radio installations required by subregulations (1)(a) and (c) must have the capability of transmitting distress alerts from the position from which the ship is normally navigated.

(3) A ship referred to in subregulation (1) must be capable of transmitting and receiving general radiocommunications using radiotelephony or direct-printing telegraphy by -

(a) a radio installation operating on frequencies between 1 605 kHz and 4 000 kHz or between 2 000 kHz and 27 500 kHz, which requirement may be met by the equipment referred to in subregulation (1)(a); or

(b) an INMARSAT ship earth station.

Radio equipment: Sea area A3

12. (1) A ship engaged on voyages beyond sea areas A1 and A2, but remaining within sea area A3, must comply with either subregulation (2) or (3).

(2) Subject to subregulation (1), a ship referred to in that subregulation must be fitted with -

(a) an INMARSAT ship earth station capable of -

(i) transmitting and receiving distress and safety communications using direct-printing telegraphy;

(ii) initiating and receiving priority distress calls;

(iii) maintaining watch for shore-to-ship distress alerts, including those transmitted to specifically defined geographical areas; and

(iv) transmitting and receiving general radiocommunications, using either radiotelephony or direct-printing telegraphy;

(b) an MF radio installation capable of transmitting and receiving, for distress and safety purposes, on -

(i) 2 187,5 kHz using DSC; and

(ii) 2 182 kHz using radiotelephony;

(c) a radio installation capable of maintaining a continuous DSC watch on 2 187.5 kHz, which may be separate from or combined with the radio installation required by paragraph (b)(i); and

(d) means of initiating the transmission of ship-to-shore distress alerts by a radio service operating -

(i) through the polar orbiting satellite service on 406 MHz, which requirement may be met by the satellite EPIRB referred to in regulation 9(1)(g), either by installing the satellite EPIRB close to the position from which the ship is normally navigated or by remote activation of the satellite EPIRB from that position; or

(ii) on HF using DSC; or

(iii) through the INMARSAT geostationary satellite service, by an additional ship earth station or by the satellite EPIRB referred to in regulation 9(1)(g), either by installing the satellite EPIRB close to the position from which the ship is normally navigated or by remote activation of the satellite EPIRB from that position.

(3) Subject to subregulation (1), a ship referred to in that subregulation must be fitted with -

(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 using -

(i) DSC;

(ii) radiotelephony; and

(iii) in the case of a Convention ship, direct-printing telegraphy;

(b) equipment, which may be separate from or combined with the radio installation required by paragraph (a), 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, 6 312 kHz, 12 577 kHz or 16 804.5 kHz, frequencies which must be possible to select at any time; 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, which requirement may be met by the satellite EPIRB referred to in regulation 9(1)(g), either by installing the satellite EPIRB close to the position from which the ship is normally navigated or by remote activation of the satellite EPIRB from that position; or

(ii) through the INMARSAT geostationary satellite service, which requirement may be met by -

(aa) an INMARSAT ship earth station; or

(bb) the satellite EPIRB referred to in regulation 9(1)(g), either by installing the satellite EPIRB close to the position from which the ship is normally navigated or by remote activation of the satellite EPIRB from that position; and

(d) equipment capable of transmitting and receiving general radiocommunications using radiotelephony or direct-printing telegraphy 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, which requirement may be met by equipment required by paragraph (a).

(4) The radio installations required by subregulations (2)(a), (b) and (d) and (3)(a) and (c) must have the capacity to be able to initiate the transmission of distress alerts from the position from which the ship is normally navigated.

Radio equipment: Sea area 4

13. Ships engaged on voyages in sea area A4 must -

(a) be provided with equipment and radio installations required by regulations 12(3)(a), (b), (c)(i) and (d); and

(b) comply with regulation 12(4).

Radio watches

14. (1) A ship, while at sea, must maintain a continuous radio watch -

(a) on VHF DSC channel 70, if the ship is fitted with a VHF radio installation in accordance with regulation 9(1)(b);

(b) on the distress and safety DSC frequency 2 187.5 kHz, if the ship is fitted with an MF radio installation as required by regulation 11(1)(b) or 12(2)(c);

(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 is fitted with an MF/HF radio installation in accordance with regulation 12(3)(b) or 13, which watch may be kept by means of a scanning receiver; and

(d) for satellite shore-to-ship distress alerts, if the ship is fitted with an INMARSAT ship earth station in accordance with regulation 12(2)(a).

(2) A ship, while at sea, must maintain a radio watch for broadcasts of maritime safety information on the appropriate frequency on which that information is broadcast for the area in which the ship is navigating.

(3) A ship must, while at sea and from the position from which the ship is normally navigated maintain, when practicable, a continuous watch on VHF channel 16.

Source of energy

15. (1) A source of energy sufficient to operate the radio installations required by this Chapter and to charge any batteries used as part of a reserve source of energy for those installations must be available at all times while the ship is at sea, and at all reasonable times where she is in port.

(2) On -

(a) a class A passenger ship or cargo ship whose keel was laid after 31 January 1995; and

(b) a Class A fishing vessel whose keel was laid after 1 March 1998, an emergency source of energy complying with regulation II 1/42 or II 1/43 of the 1974 SOLAS Convention or regulation IV 17 (1) and (2) of the 1993 SFV Protocol, respectively, must be available at all times while that ship is at sea, and at all reasonable times where she is in port.

(3) A ship must, in the event of failure of her main and emergency sources of electrical power, be fitted with a reserve source of energy to supply radio installations referred to in subregulation (4) with energy to conduct distress and safety radiocommunications.

(4) A reserve source of energy contemplated in subregulation (3) must be capable of simultaneously operating the VHF radio installation required by regulation 9(1)(a) and, as appropriate for the sea area or sea areas for which the ship is fitted, either the MF radio installation required by regulation 11(1)(a), the MF/HF radio installation required by regulation 12(3)(a) or 13 or the INMARSAT ship earth station required by regulation 12(2)(a), and any of the additional requirements specified in subregulations (6), (7) and (10) of this regulation -

(a) on a class A passenger ship or cargo ship whose keel was laid after 31 January 1995, for a period of at least one hour;

(b) on a class A fishing vessel whose keel was laid after 1 March 1998, for a period of at least 3 hours, or, 1 hour if the emergency source of electrical power complies fully with the requirements to supply the radio installations and is capable of serving for a period of at least 6 hours;

(c) on a passenger ship or cargo ship whose keel was laid before 1 February 1995 and a fishing vessel whose keel was laid before 2 March 1998 -

(i) if the emergency source of electrical energy complies with the relevant provisions of regulation 11-1/42 or 43 of the 1974 SOLAS Convention, including the supply of that energy to the radio installations, for a period of at least one hour; or

(ii) on a fishing vessel, if the emergency source of electrical energy complies fully with all relevant requirements of regulation IV 17 (1) and (2) of the 1993 SFV Protocol, including the requirements to supply the radio installations, for a period of at least 3 hours; or at least 1 hour if the emergency source of electrical power complies fully with the requirements to supply the radio installations and is capable of serving for a period of at least 6 hours; or

(iii) if the said source is not provided or does not so comply, for a period of at least six hours.

(5) The reserve source or sources of energy referred to in subregulation (4) -

(a) need not supply independent HF and MF radio installations simultaneously; and

(b) must be independent of the ship's propelling power and main electrical system.

(6) Where, in addition to the VHF radio installation, two or more of the other radio installations specified in subregulation (4) can be connected to the reserve source of energy referred to in that subregulation, it must be capable of simultaneously supplying, for the period specified in paragraph (a) or (b) of that subregulation, as the case may be, the VHF radio installation and -

(a) all other radio installations that can be connected to the reserve source of energy at the same time; or

(b) if only one of such other radio installations can be connected to the reserve source of energy at the same time as the VHF radio installation, whichever of the other radio installations that consumes the most power.

(7) The reserve source of energy referred to in subregulation (4) may be used to supply the electrical lighting required by regulation 8(1)(c).

(8) Where a reserve source of energy consists of rechargeable accumulator batteries -

(a) a means of automatically charging those batteries, capable of recharging them to minimum capacity requirements within 10 hours, must be provided; and

(b) the capacity of that battery or batteries must be checked when the ship is not at sea, using an appropriate method, at intervals not exceeding 12 months.

(9) The siting and installation of accumulator batteries that provide a reserve source of energy must be located above the uppermost continuous deck and must be readily accessible from the open deck, and in that installation it must be ensured that -

(a) the degree of service specified by the manufacturer is not impaired;

(b) the lifetime specified by the manufacturer is not negatively affected;

(c) reasonable safety is provided;

(d) battery temperatures remain within the manufacturer's specifications, whether under charge or idle; and

(e) when fully charged, the batteries provide at least the minimum number of hours of operation specified by the manufacturer, under all weather conditions.

(10) If an uninterrupted input of information from the ship's navigational or other equipment to a radio installation required by this Chapter is needed to ensure the proper performance of that equipment, means must be provided to ensure a continuous supply of that information in the event of failure of the ship's main or emergency source of electrical energy.

(11) For the purpose of calculating the required ampere-hour capacity of the reserve source of energy, the total current used in the calculation must be equal to the sum of the average current consumption of all the radio installations that can be connected simultaneously to the source of energy, calculated by adding -

(a) the current consumption of the VHF receiver;

(b) one half of the current consumption of the VHF transmitter;

(c) the current consumption of an MF/HF receiver and of the transmitter when operation of the "press to transmit" switch will make it ready for immediate transmission;

(d) one half of the current that may be drawn by an MF/HF transmitter for speech transmission on the frequency at which the current consumption of the transmitter is at its maximum;

(e) the current consumption of an INMARSAT ship earth station when it is receiving transmissions;

(f) one half of the current that may be drawn by an INMARSAT ship earth station when it is transmitting in the mode in which the current consumption is at its 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.

(12) For the purpose of calculating the peak current requirements of the reserve source of energy, the total current used in the calculation must be equal to the sum of the peak current consumption of all the radio installations that can be connected simultaneously to the source of energy, calculated by adding -

(a) the peak current consumption of the VHF transmitter;

(b) the peak current that may be drawn by an MF/HF transmitter for transmission on the frequency at which the current consumption of the transmitter is at its maximum;

(c) the peak current that may be drawn by an INMARSAT ship earth station when it is transmitting in the mode in which the current consumption is at its maximum; and

(d) the total peak current consumption of all additional loads to which the reserve source may supply energy in times of distress or emergency.

Maintenance requirements

16. (1) For the purposes of this regulation "equipment" means all radio equipment necessary for providing general radiocommunications as required by this Chapter.

(2) Any equipment must be designed in such a way that the main units can be replaced readily, without elaborate recalibration or readjustment.

(3) Where applicable, equipment must be constructed and installed in such a way as to be readily accessible for inspection and on-board maintenance purposes.

(4) Adequate information must be readily available to properly operate and maintain equipment.

(5) Adequate tools and spare parts in accordance with Annexure 5 must be provided by the owner to maintain equipment.

(6) On ships engaged on voyages in sea areas A1 and A2, compliance with regulation 7 must be ensured by using such methods as duplication of equipment, shore-based maintenance or at-sea electronic maintenance capability, or a combination of these.

(7) Evidence of shore-based maintenance contracts must be displayed or available for inspection at all reasonable times.

(8) On Convention ships which undertake regular voyages beyond the adjacent sea area, compliance with regulation 7 must be ensured by using a combination of at least two of the methods referred to in subregulation (6).

(9) On non-Convention ships and Convention ships that do not operate or undertake voyages beyond the adjacent sea area, compliance with regulations 12 (2) and 12 (3) must be considered to be adequate duplication.

(10) A ship must not be unseaworthy by reason of a malfunction of the equipment for providing general radiocommunications as required by regulation 7(h), nor is it a reason for delaying a ship in a port where repair facilities are not readily available, provided that the ship is capable of performing all distress and safety radiocommunication functions.

(11) While a ship is at sea, the master of that ship must designate a person to carry out the appropriate tests and checks specified in Annexure 2 and, if any radio installation is not in working order, that person must inform the master thereof and enter the relevant details in the radio log.

Radio personnel

17. A GMDSS ship must carry the number of GMDSS operators required by the Radio Regulations.

Radio records

18. The master must keep a radio log or cause a radio log to be kept by a radio operator, setting out the particulars prescribed by Annexure 3 of all incidents connected with the radiocommunication service that appear to be of importance to the safety of life at sea.

CHAPTER 3
NON-GMDSS SHIP REQUIREMENTS

PART I
GENERAL

Definitions

19. In this Chapter, unless the context otherwise indicates -

"existing installation" means -

(a) an installation wholly installed before the commencement of these Regulations; or

(b) an installation part of which was installed before the said commencement and the rest of which consists of parts installed in replacement of identical parts or of parts that comply with the relevant provisions of this Chapter;

"new installation" means any installation that is not an existing installation;

"operating position", in relation to any equipment, means the position normally occupied by a person when operating that equipment;

"radio installation" means a radiotelegraph installation or a radiotelephone installation, as the case may be;

"radiotelephone installation" means the equipment operating in the frequency bands 1605 kHz - 4 500 kHz and 156.025 MHz - 162.025 MHz;

"radiotelephone operator" means a person holding a valid appropriate certificate issued or recognised by the relevant authority authorised to issue or recognise that certificate;

"radiotelephone ship" means a ship fitted with a radiotelephone installation in accordance with Chapter I and this Chapter;

"radiotelephone station" means the location of a radiotelephone installation on a ship;

"radio watch", in relation to -

(a) a radiotelephone ship, means listening on the international distress frequency 2 182 kHz and 156.800 MHz; and

(b) a VHF radiotelephone ship, means listening on the international distress channel 16 (156.800 Mhz);

"silence period" means a period of 3 minutes beginning at every hour and at 30 minutes past every hour on 2182 kHz;

"VHF radiotelephone installation" means the equipment operating in the frequency band 156.025 MHz -162.025 Mhz;

"VHF radiotelephone ship" means a ship fitted only with a VHF radiotelephone installation in accordance with Chapter I and this Chapter; and

"VHF radiotelephone station" means the location of a VHF radiotelephone installation on a ship.

Provision of radio-installations

20. (1) A class B ship and a class C ship must be fitted with -

(a) a radiotelephone installation that includes a transmitter, a receiver, a radiotelephone alarm signal generating device, a 2182 kHz radiotelephone distress frequency watchkeeping receiver or radiotelephone auto alarm or alternative provision for continuous watchkeeping on 2182 kHz, or

(b) an INMARSAT station capable of -

(i) transmitting and receiving distress and safety communications using direct printing telegraphy;

(ii) initiating and receiving priority distress calls;

(iii) maintaining watch for shore-to-ship distress alerts, including those transmitted to specifically defined geographical areas; and

(iv) transmitting and receiving general radiocommunications, using either radiotelephony or direct-printing telegraphy.

(2) Every class B ship, class C ship and class D ship must be fitted with -

(a) a VHF radiotelephone installation that includes a transmitter and receiver;

(b) Navtex Receiver or a radio facility for the reception of maritime safety information by the INMARSAT enhanced group calling system, if the ship is engaged on voyages in any area of INMARSAT coverage, but in which an international NAVTEX service is not provided or unreliable: provided that this provision does not apply to a ship engaged on a voyage in an area where an HF direct-printing telegraphy maritime safety information service is provided and that ship is fitted with equipment capable of receiving that service; and

(c) a 9 GHz Radar.

(3) A class B and a class C fishing vessel of 24 metres or more in length, a class C cargo ship of 300 tons or more, but less than 500 tons, a class C passenger ship and a class D passenger ship of 25 tons or more must be provided with at least two portable two-way VHF radiotelephone transceivers.

(4) A class D passenger ship of less than 25 tons must be provided with at least one portable two-way VHF radiotelephone transceiver.

(5) A class B and a class C ship must be provided with at least one SART capable of operating in the 9 GHz band carried inside the wheelhouse near the most convenient exit door and stowed in such a manner as to enable rapid placement in a survival craft.

(6) A class B ship and a class C passenger ship must comply with Regulations 5 and 9 (1)(g).

(7) A class B fishing vessel of less than 24 metres in length and every other class B ship must be provided with at least one portable two-way VHF radiotelephone transceiver capable of being used for on-scene communication between survival craft, survival craft and the ship, and survival craft and rescue units.

(8) An apparatus referred to in paragraph (a) -

(a) may be used for on board communication, if provided with rechargeable batteries and capable of operating on appropriate frequencies; and

(b) must be made watertight either through integral design or by other suitable means.

Interference with reception and with other installations

21. (1) Any interference or mechanical noise produced by -

(a) a radio installation, must, while the ship in question is at sea, at no time interfere with the efficient operation of any other equipment installed in that ship;

(b) any equipment in a ship, must, while that ship is at sea or in a port where the master has required a radio watch, at no time prevent the effective reception of radio signals by means of any such radio installation.

(2) Where it is impracticable to erect efficient and properly installed antennae for broadcast receivers that do not interfere with the efficiency of the radio installation, the ship must be provided with a communal antenna system for broadcast receivers.

Testing of equipment

22. (1) While a ship is at sea, the radio operator must carry out the appropriate equipment tests and battery and reserve power checks prescribed by Annexure 4.

(2) Where more than one radio operator is carried on the ship, the master must designate the operator for the purposes of subregulation (1).

(3) If any of the equipment required by Part I is not in a satisfactory working condition, the radio operator who discovers the deficiency must, without delay, report that fact to the master and enter the details in the radio log.

Charging of batteries

23. (1) Where batteries are provided as a source of energy for any part of the equipment required by Part I, means must be provided on board the ship for recharging the batteries from the ship's main source of electrical energy, and the charging facilities must be adequate to ensure that -

(a) batteries provided as a main source of energy can be fully charged within a period of 6 hours; and

(b) batteries provided as an Emergency or Reserve source of energy can be fully charged within a period of 12 hours.

(2) Where more than one battery contemplated in subregulation (1) is provided, and each has sufficient capacity to comply with regulation 34(1), the charging facilities contemplated in subregulation (1) must be adequate to ensure that -

(a) batteries provided as a main source of energy can be fully charged within a period of 6 hours, but not necessarily simultaneously; and

(b) batteries provided as an emergency or reserve source of energy can be fully charged within a period of 12 hours.

(3) Where practicable, the batteries referred to in subregulation (1) must be fully charged on every occasion immediately before the ship leaves the port.

(4) While the ship is at sea, the batteries forming part of -

(a) the radiotelephone installation or VHF radiotelephone installation must be brought to the normal fully-charged condition daily;

(b) the survival craft portable radio equipment, if of a type requiring charging, must be brought to the normal fully-charged condition weekly; and

(c) the survival craft two-way VHF radiotelephone apparatus, if of a type requiring charging, must be brought to the normal fully-charged condition whenever necessary and at least at intervals not exceeding one week.

(5) Ships laid up unmanned without shore power supply connections on a regular basis for more than 35 consecutive days per annum must be provided with a solar power battery charger or a wind-charger of adequate capacity to trickle-charge the batteries on board at a net rate of at least 1 ampere in excess of the discharge consumption while laid up without shore power.

Spare parts, tools and testing equipment

24. Sufficient spare parts, tools and testing equipment appropriate to the ship, but at least those prescribed by Annexure 5, must be provided to enable the radio installation to be maintained in a satisfactory working condition while the ship is at sea.

Maintenance requirements

25. (1) A radio installation must be in a satisfactory working condition whenever a ship goes to sea.

(2) Where any additional radio equipment not required by Part I is provided on a ship, that equipment must be of such a design that any malfunction of any part thereof will not adversely affect the operation of any radio installation required by this Chapter.

(3) A radio installation must be in a satisfactory working condition at all times while a ship is at sea, unless there is a defect in the radio installation or maintenance is being carried out.

(4) All equipment forming part of a radio installation must be, as far as is ascertainable, reliable and must be constructed and installed in such a manner that it is readily accessible for maintenance purposes.

(5) The owner of the ship must provide adequate information and instructions for the use and maintenance of each radio installation, and that information must be available for use when the radio installation is being operated, tested or serviced.

(6) There must be available on board a ship -

(a) a rigging plan of the fitted antennae showing -

(i) elevation and plan views of the antennae;

(ii) the dimensions of transmitting antennae, including the height above the lead-out insulator, and

(iii) the vertical height of the VHF antennae above the load line or deck line indicating the greatest depth to which the ship may at any time or any place be submerged to the base of each VHF antenna, and the height of the antenna above the lead-out insulator in respect of a radiotelephone transmitter; and

(b) on new ships, complete information on the wiring of the radio installations, showing all cable interconnections, terminations, voltages and sources of energy.

PART II
VHF RADIOTELEPHONY

VHF radiotelephone station

26. (1) The VHF radiotelephone installation must be in the upper part of the ship and control of the VHF channels required for navigational safety must be immediately available on the navigating bridge convenient to the conning position and, where necessary, facilities must be available to permit radiocommunications from the wings of the navigating bridge.

(2) A notice of instructions giving a clear summary of the distress, urgency and safety procedures must be displayed in full view of each VHF radiotelephone operating position.

Provision of antennae

27. (1) A ship fitted with a VHF radiotelephone installation must be provided with an antenna suitable for the efficient radiation and reception of signals in the frequency band 156.025 MHz - 162.025 MHz.

(2) An antenna referred to in subregulation (1) must be vertically polarised and, so far as is practicable, have an unobstructed view in all directions.

Sources of energy

28. (1) While the ship is at sea, and at all reasonable times while she is in port, a source of energy sufficient to operate the VHF radiotelephone installation at its nominal rated output power must at all times be available.

(2) Where batteries are provided as a source of energy for any part of the equipment required by Part II, those batteries must have the capacity required by subregulation (1), and must, while the ship is at sea, be maintained at all times in a condition to be able to supply, continuously for at least six hours, the average current consumption equal to the sum of -

(a) the current consumption of the VHF radiotelephone receiver;

(b) one half of the current consumption of the VHF radiotelephone transmitter, and

(c) the total current consumption of all additional loads to which the source may supply energy in times of distress or emergency.

(3) In passenger ships, in cargo ships of 300 tons or more and in fishing vessels of 24 metres or more in length, the VHF radiotelephone installation must, where practicable, also be capable of being operated from an alternative source of energy situated in the upper part of the ship, unless the source of energy required by subregulation (1) is situated there.

(4) The alternative source of energy referred to in subregulation (3) may be the reserve source of energy required by regulation 34(2), in which case the VHF usage thereof must be limited to distress, urgency and safety communications.

(5) Where provision has been made for operating the VHF radiotelephone installation from alternative sources of energy, clearly indicated means must be provided for the quick changing from one source of energy to another.

(6) New installations on fishing vessels of 45 metres and over and on other ships of 300 tons and over must comply with regulation 15.

Use of VHF radiotelephone installation

29. The VHF radiotelephone installation must be operated only by or under the supervision of a radiotelephone operator, and that radiotelephone operator must ensure that persons using the installation have practical knowledge of operating the VHF equipment and general knowledge of the Radio Regulations applying to VHF radiotelephone communications and specifically of those relating to distress, urgency and safety signals.

VHF radio watch

30. (1) While at sea, a ship provided with a VHF radiotelephone installation must maintain a continuous watch on the navigating bridge on 156.8 MHz (VHF channel 16).

(2) A watch referred to in subregulation (1) may be discontinued when -

(a) the receiver is being used for traffic on a frequency other than 156.8 MHz (VHF channel 16);

(b) the ship is maintaining a radio watch on a frequency other than the VHF channel 16 for the purpose of a port operation, ship movement, or safety of navigation service;

(c) at the direction of the master, the watch is being maintained elsewhere in the ship; or

(d) in the opinion of the master, the watch is prejudicial to the safety of the ship.

(3) Where a watch has been discontinued as contemplated in subregulation (2)(c) or (d), entries must be made in the ship's radio log of the times and duration for which the watch on the navigating bridge was so discontinued and of the circumstances in which the watch was transferred elsewhere or in which the safety of the ship was prejudiced, as the case may be.

(4) During a watch referred to in subregulation (1) a written summary must be maintained of all communications relating to distress, urgency and safety traffic received or transmitted on the VHF radiotelephone installation.

(5) While at sea, a ship must maintain a radio watch for broadcasts of maritime safety information on the appropriate channel or channels on which that information is broadcast for the area in which the ship is navigating.

PART III
RADIOTELEPHONY

Radiotelephone station

31. (1) Where a ship has been fitted with a radiotelephone station that station must be situated in the upper part of the ship and in such a way that it is protected to the greatest possible extent from interference and noise that might impair the accurate reception of messages and signals.

(2) There must be an efficient two-way means of communication, independent of the ship's main communication system and main source of electrical energy, between the radiotelephone station and any other place from which the ship is normally navigated, except where the radiotelephone installation is located within normal voice range of the place from which the ship is normally navigated.

(3) A reliable clock on which the marking of the silence periods are clearly visible, must be securely mounted in such a position that the entire dial, of not less than 100 millimetres in diameter and a concentric second-hand, can be easily and accurately observed from the radiotelephone operating position.

(4) A reliable emergency light, independent of the system that supplies the normal lighting of the radiotelephone installation, must be provided and permanently arranged to provide adequate illumination of the operating controls of the radiotelephone installation, the clock required by subregulation (3), and the notice of instructions required by subregulation (7).

(5) The emergency light referred to in subregulation (4) must be controlled by two-way switches, which must be clearly labelled to indicate its purpose, placed near an entrance to the room in which the radiotelephone installation is fitted and at the operating position in that room: Provided that where the radiotelephone installation is fitted on the bridge, only the switch at the operating position must be provided.

(6) Where the source of energy for a radiotelephone installation consists of a battery or batteries, means must be provided at the radiotelephone station for assessing the charge condition, charging rate and voltage.

(7) A notice of instructions giving a clear summary of the radiotelephone distress, urgency and safety procedures must be displayed in full view of each radiotelephone operating position.

(8) Means must be provided at the radiotelephone station for testing the proper functioning of -

(a) the radiotelephone alarm signal generating device, by ensuring that the device can modulate the radiotelephone transmitter satisfactorily and that the transmitter in question does not radiate signals during the testing; and

(b) the muting circuits of the radiotelephone distress frequency watch receiver or the radiotelephone auto alarm.

Provision of antennae

32. (1) A radiotelephone ship must be provided with suitable transmitting and receiving antennae and insulators.

(2) Where wire antennae are suspended between supports liable to whipping, they must be protected against breakage.

(3) A radiotelephone ship must carry -

(a) if the radiotelephone antenna is a supported wire antenna, a spare antenna completely assembled for rapid replacement of that antenna;

(b) if the radiotelephone antenna is not a supported wire antenna, a spare antenna of similar electrical characteristics as that antenna, complete with the necessary materials and other means to be rapidly erected while at sea.

(4) A suitable antenna must be provided for, and normally be connected to, the radiotelephone distress frequency watch receiver or the radiotelephone auto alarm.

Range of radiotelephone transmitter

33. (1) The normal range of a radiotelephone transmitter must not be less than 150 nautical miles on 2182 kHz from ship to ship between sunrise and sunset and under normal propagation conditions.

(2) Subject to subregulation (4), the range of a radiotelephone transmitter referred to in subregulation (1) must be determined by calculating the metre-amperes (which is the product of the maximum height of the antenna in metres, measured from the lead-out insulator and the current in amperes, measured at the base of the antenna).

(3) A radiotelephone transmitter must comply with subregulation (1), if the product calculated in accordance with paragraph (a) is not less than -

(a) 7.5 metre-amperes, in the case of an antenna which has a horizontal top-length of not less than 50 per cent of its maximum height, measured from the lead-out insulator; or

(b) 12.8 metre-amperes, in the case of any other antenna.

(3) If an antenna arrangement causes difficulties in determining the range of the radiotelephone transmitter by calculation, its range must be determined by trial or by means of a Radio Frequency wattmeter.

(4) A radiotelephone transmitter referred to in subregulation (1) must have a minimum rated power output of not less than 100 watts peak envelope power (PEP) measured between the transmitter final stage and the antenna tuning unit (ATU).

Source of energy

34. (1) At all times while a radiotelephone ship is at sea, and at all reasonable times when she is in port, a main source of energy, sufficient to operate the radiotelephone installation over the normal range required by regulation 33, must be available.

(2) Where the source of energy referred to in subregulation (1) are batteries, those batteries must have the capacity required by that subregulation, and, while the ship is at sea, be maintained to be able to supply, continuously for at least six hours, an average current consumption equal to the sum of -

(a) the current consumption of the radiotelephone receiver and transmitter, where operation of the "press to transmit" switch will make it ready for the immediate transmission of speech;

(b) one half of the current that may be drawn by the radiotelephone transmitter for speech transmission on the frequency at which the current consumption of the transmitter is at a maximum;

(c) the current consumption of all additional loads to which the battery may supply energy in time of distress or emergency; and

(d) where the source of energy is also used by the VHF radiotelephone installation, the current consumption of the VHF radiotelephone receiver and one half of the current consumption of the VHF radiotelephone transmitter.

(4) In respect of radio installations on fishing vessels of 24 metres or more in length and other ships of 300 tons or more, a reserve source of energy must be provided in the upper part of the ship, unless, in respect of fishing vessels of less than 45 metres in length or cargo ships of less than 300 tons, an Emergency source of energy is located there.

(5) The reserve source of energy referred to in subregulation (3) must be used only to supply -

(a) the radiotelephone installation;

(b) the emergency light required by regulation 31(4);

(c) the device for generating the radiotelephone alarm signal by automatic means;

(d) the VHF radiotelephone installation;

(e) the direction-finder (if fitted) or GPS;

(f) a number of low-power emergency circuits that are wholly confined to the upper part of the ship, on condition that the circuits are adequately fused and capable of being readily disconnected and that such source has sufficient capacity to carry the additional load; and

(g) a Navtex receiver.

(5) New installations on fishing vessels of 45 metres and over and on other ships of 300 tons and over must comply with regulation 15.

Radiotelephone operators

35. A radiotelephone ship must carry the number of radiotelephone operators required by the Radio Regulations.

Radio watch

36. While at sea, a radiotelephone ship must maintain a continuous watch on the radiotelephone distress frequency 2182 kHz from the place from which the ship is normally navigated, by use of a radiotelephone distress frequency watch receiver or a radiotelephone auto alarm unless, in the case of fishing vessels of less than 45 metres in length and other ships of less than 300 tons, provision is made for -

(a) continuous watchkeeping on 2182 kHz by means of a dedicated Receiver;

(b) continuous watchkeeping on channel 16 by means of a dedicated Receiver;

(c) DSC watchkeeping on channel 70 or 2187.5 kHz; or

(d) an Inmarsat C EGC Receiver.

Radio log: Radiotelephone ship

37. (1) The radio log required by the Radio Regulations for a radiotelephone ship must be kept at the place where radio watch is maintained during the voyage.

(2) Where a radio watch is carried out in accordance with regulation 36, the radiotelephone operator, master, officer or crew member concerned, as the case may be, must enter in the radio log the particulars prescribed by Annexure 6.

(3) The radiotelephone operator or, if there is more than one such operator, the operator designated by the master must daily inspect and sign the entries for that day in the radio log, certifying that the requirements of this Chapter have been complied with.

(4) The master must daily inspect and sign the entries for that day in the radio log.

(5) The radio logbooks must be available for inspection by officers authorised by the Permanent Secretary to make such an inspection.

(6) The radio log forms part of the official logbook required by the Act, but must be kept separate from the official logbook and is a document relating to the navigation of the ship for the purposes of the Act.

PART IV
RADIO EQUIPMENT FOR LIFEBOATS AND SURVIVAL CRAFT

Radio equipment for lifeboats and survival craft

38. (1) The portable radio equipment for survival craft, the two-way VHF radiotelephone apparatus for survival craft, the survival craft EPIRBs, and SARTs required by or under the Act must comply with the appropriate performance standards as prescribed by regulation 5(1) and must be tested in accordance with regulation 22(1).

(2) The battery included in motor lifeboat fixed radio equipment must be used only for the operation of that equipment and searchlight.

CHAPTER 4
PENALTIES

Detention

39. A ship that does not comply with these Regulations may be detained in pursuance of section 243 of the Act.

Penalties and defences

40. (1) The master or owner of a ship to which these Regulations apply and who fails to comply with or contravenes regulation 2(2), (3), (4) or (5), regulation 5, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16(2), (3), (4), (5), (6), (7), (8), (9), (10) or (11), regulation 17, 18, 20, 21, 23, 24, 25, 26, 27, 28, 30, 31, 32, 33, 34, 35, 36, 37 or 38 commits an offence, and is on conviction liable to a fine not exceeding N$400 or to imprisonment for a period not exceeding one year, or to both the fine and imprisonment.

(2) A radio operator who contravenes regulation 18 or 22 commits an offence, and is on conviction liable to a fine not exceeding N$400 or to imprisonment for a period not exceeding one year, or to both the fine and imprisonment.

(3) A radiotelephone operator who contravenes regulation 18, 22, 29, 30, 36 or 37 commits an offence, and is on conviction liable to a fine not exceeding N$400 or to imprisonment for a period not exceeding one year, or to both the fine and imprisonment.

(4) A person charged under this regulation may, as a good defence, show that he or she took all reasonable precautions to avoid the commission of the offence.

ANNEXURE 1
Satellite (406 MHz) EPIRB registration
(Regulation 5(2))

NAMIBIA
MINISTRY OF WORKS, TRANSPORT AND COMMUNICATION
DIRECTORATE: MARITIME AFFAIRS
MERCHANT SHIPPING ACT, 1951 (ACT NO. 57 OF 1951)
COSPAS/SARSAT SATELLITE (406 MHz) EPIRB REGISTRATION

Please complete this form in duplicate and return one copy to: The Namibian Search and Rescue Organisation, C/o The Port Captain, Walvis Bay. Fax: 064 208 2325, and the other copy to the Local Radio Surveyor.

A. PARTICULARS OF VESSEL

1. Name:.....
2. Flag State:.....
3. Length:.....
4. Call sign:.....
5. Colour of hull:.....
6. Port of registry or home port:.....
7. Colour of superstructure:.....
8. Capacity of persons on board.....
9. Ship's radio installation: INMARSAT A, B, C or M/MF-HF/VHF/etc.

Ship type: # *Tug/ General purpose/ Bulk Carrrier/ Tanker/ Container/ Passenger/ Fishing/ Trawling/ Ferry/ Drilling platform/ Mining exploration/ Research/ Ro-Ro/ Cabin cruiser/ Sloop/ Yawl/ Schooner*

Other: Please, specify.

B. EPIRB PARTICULARS

1. Class of EPIRB: Class 2/ Category 1/Category 2
   Other: Please specify:.....
2. Manufacturer:.....
3. Unique or MMSI number:.....

C. OWNER'S PARTICULARS

1. Name:.....
2. Name, address and telephone number of emergency contact (include area code)
   .....
   .....
   .....
   .....

   Telephone No.
   Work:.....
   Home:.....

3. Alternative 24 hour emergency contact:
   Name:.....

   Telephone No.
   Work:.....
   Home:.....

ANNEXURE 2
Equipment Tests and Reserve Power Checks: GMDSS ships
(Regulation 16(10))

1. Daily

(a) The proper functioning of the DSC facilities must be tested at least once each day, without radiation of signals, by use of the means provided on the equipment.

(b) Batteries providing a source of energy for any part of the radio installations must be tested daily and, where necessary, brought to a fully charged condition.

2. Weekly

(a) The proper operation of the DSC facilities must be tested at least once a week by means of a test call, when within communication range of a coast station fitted with DSC equipment, but where a ship has been out of communication range of a coast station fitted with DSC equipment for a period longer than one week, a test call must be made at the first opportunity once the ship is within communication range of such a coast station.

(b) Where the reserve source of energy is not a battery, the reserve source of energy must be tested weekly.

3. Monthly

(a) Each EPIRB and satellite EPIRB must be tested at least once a month to determine its capability to operate properly using the means provided on the device and without using the satellite system and have their source of energy and hydrostatic release units replaced when necessary.

(b) Each SART must be checked at least once a month for security and signs of damage and have their source or energy replaced when necessary.

(c) A test must be performed at least once a month on the security and condition of the battery connections, the battery compartment and all batteries providing a source of energy for any part of a radio installation.

ANNEXURE 3
Radio log : GMDSS ships
(Regulation 18)

In accordance with regulation 18, the following must be entered in the radio log:

(a) Particulars of communications relating to distress, urgency and safety traffic, and the time of occurrence;

(b) Particulars of important service incidents, and the time of occurrence;

(c) Particulars of maintenance checks required by regulation 16(10), and the time of occurrence;

(d) the position of the ship at least once a day;

(e) Particulars of the ship, including call sign, ship station identity numbers, gross tonnage, registered length, official number, owner's name and address;

(f) Particulars of the primary operator, including his or her name, certificate number and category and period employed as the primary operator; and

(g) Particulars of watchkeeping in compliance with regulation 14.

ANNEXURE 4
Equipment tests and Battery and Reserve Power Checks: Non-GMDSS ships
[Regulation 22(1)]

1. Daily

(a) The radiotelephone distress frequency watch receiver must be tested at least once each day using the means provided in accordance with regulation 31(7), by listening to signals and, where practicable, comparing them with similar signals received on the radiotelephone distress frequency on another receiver.

(b) Batteries providing a source of energy for any part of the radio installation must be tested daily and, where necessary, brought to a fully charged condition.

2. Weekly

(a) The radiotelephone alarm signal generating device must be tested at least once every seven days using the means provided in accordance with regulation 31(7)(a).

(b) Batteries forming part of a two-way VHF radiotelephone apparatus for survival craft must be tested weekly and, where appropriate, brought to a fully charged condition.

(c) Where the reserve source of energy is not a battery, the reserve source of energy must be tested weekly.

3. Monthly

(a) Batteries providing a source of energy for any part of the radio installation must be tested at least once a month by means of a hydrometer or by a suitable load test. A check must also be made of the security of the battery and its connections and of the condition of the battery and its compartment.

(b) Each EPIRB and satellite EPIRB must be tested at least once a month to determine its capability to operate properly using the means provided on the device and without using the satellite system and have their source of energy and hydrostatic release units replaced when necessary.

(c) Each SART must be checked at least once a month for security and signs of damage and have their source or energy replaced when necessary.

(d) Non-rechargeable batteries prov ied for portable two-way VHF radiotelephone apparatus for survival craft must be checked monthly and replaced upon expiry date or earlier when the seals are broken.

4. Recording of results

Results of the inspections, tests and replacements specified in this Annexure must be entered in the radio log.

ANNEXURE 5
Spare Parts, Tools and Testing Equipment
[Regulations 24]

A. GMDSS ship provided with Radio Electronics Officer [regulation 16 (5)]

Tools

1	15 cm smooth file
1	jointing knife
1	pair 18 cm wireman's insulated pliers
1	pair 15 cm insulated long-nose pliers
1	pair 15 cm insulated side cutters
1	set each insulated flat-head and cross-head screwdrivers
1	set watchmaker's screwdrivers
1	set each of spanners (flat and box) (suitable for use on the equipment)
1	adjustable spanner with 25 mm gap
1	hand drill with 8 mm chuck
1	set high-speed twist drill bits to suit hand drill
1	clamp vice
1	electric soldering iron (to suit ship's voltage) with a power consumption of not less than 75 watts or more than 125 watts
1	electric soldering iron (to suit ship's voltage) with a power consumption of not more than 30 watts
1	dusting brush
1	300 g ball-pane hammer
1	hacksaw and spare blades to suit
1	lockable tool-box or compartment (for containing the above-mentioned tools)

Measuring instruments

1	hydrometer

An analogue or digital multimeter capable of measuring direct current from 1 to 500 milliamperes, AC and DC voltage from 1 to 1 000 volts, and resistance from 10 to 20 000 ohms.

Spare parts

5	fuses for each type and rating of fuse in use
1	safety loop (if main or reserve antenna is a supported wire type and fitted with safety loops)
12	bulldog grips to suit the antenna wire
1	telephone handset with leads, and plugs if used, for each type of handset in use
1	emergency lamp with spare bulb
1	spare bulb for the emergency light required by regulation 39(g)
50	per cent of the number of insulators in use (excluding lead-out insulators)
100	per cent of the number of shackles and thimbles in use
1 valve	for every two, or part thereof, of each type of valve in use

Miscellaneous items

1	pack carborandum paper (assorted grades)
1	large roll of insulating tape
1	can general purpose lubricating oil
1	can proprietary brand contact cleaner
2	rolls of NAVTEX paper
$^1/_2$ litre	lubricating oil (if a machine lubricated with oil forms part of the installation)
10 M	flexible wire (5 amp rating) for adjustable connections
250 g	petroleum jelly

500 g	general purpose grease
500 g	resin-cored solder
5 litres	distilled water

B. GMDSS ships without Radio Electronics Officers and Radiotelephone ships [Regulations 16 (5) and 24]

Tools

1	15 cm smooth file
1	jointing knife
1	pair 18 cm insulated wireman's pliers with side cutters
1	set each insulated flat-head and cross-head screwdrivers (suitable for use on radiotelephone equipment)
1	adjustable spanner with 25 mm gap
1	hacksaw and spare blades to suit
1	lockable tool box or compartment (for containing the above-mentioned tools)

Measuring instruments

1	hydrometer

Spare parts and miscellaneous items

5	fuses for each type and rating of fuse in use
1	spare bulb for the emergency light required by regulation 31(4)
2	rolls of NAVTEX paper
250 g	petroleum jelly or general purpose grease
5 litres	distilled water

On all ships where special nuts and/or screws are used for fastening, suitable tools must be provided in addition to those specified in (A) and (B) above.

ANNEXURE 6
Radio log: Radiotelephone Ships
(Regulation 37(2))

The radiotelephone logbook must be completed as follows:

Section A - Particulars of the radiotelephone operators on board and the name of the radio-operator delegated by the master as having primary responsibility for ra) communications during distress incidents.

Section B - Diary of the radio service.

A radiotelephone operator must, when keeping radio watch, enter in the radio log -

(a) the name of the radiotelephone operator and the times at which the watch commences and ends;
(b) the times at which radio watch is for any reason discontinued, the reason for its discontinuation and the time at which radio watch is resumed;
(c) a summary of communications exchanged between the ship station and coast stations or other ship stations, including the serial numbers and the dates of any messages passed;
(d) a summary of all communications relating to distress, urgency and safety traffic;
(e) a record of all incidents connected with the radio service, including the radiotelephone installation and the VHF radiotelephone installations, that occur during the watch and appear to be of importance to safety of life at sea;
(f) details of the tests and checks required by regulation 22(1);
(g) the position of the ship at least once a day; and
(h) the time of arrival at, and departure from, the port and the name of the port.

ANNEXURE 7
Documents and Publications
(Regulation 2(1)(e)

A. A radiotelephone ship must be provided with:

(a) The ship station licence;

(b) a certificate of the radio operator or operators referred to in the Radio Regulations;

(c) a radiotelephone logbook;

(d) a list of coast stations with which communications are likely to be conducted, showing watchkeeping hours and frequencies;

(e) a manual for use by the Maritime Mobile and Maritime Mobile-Satellite Services, current edition, or a summary thereof applicable to the facilities on board;

(f) in the case of a vessel undertaking an international voyage and other vessels which in the opinion of the Directorate have a need to use it, the International Code of Signals;

(g) a Local General Safety Certificate;

(h) a tonnage certificate;

(i) a registration certificate;

(j) an Antenna Rigging Plan, indicating the height of the MF/HF antenna above the lead-out insulator and the height of the VHF antennae above sea level.

B. A VHF radiotelephone ship must be provided with:

(a) the ship station licence;

(b) a certificate of the radio operator or operators referred to in the Radio Regulations;

(c) a radio logbook;

(d) a list of coast stations with which communications are likely to be conducted, showing watchkeeping hours and frequencies;

(e) manual for use by the Maritime and Maritime Mobile-Satellite Services, current edition, or a summary thereof applicable to the facilities on board;

(f) a Local General Safety Certificate;

(g) a Tonnage Certificate;

(h) a Registration Certificate; and

(i) an Antenna Rigging Plan, indicating the height of the VHF Antennae above sea level.

C. A GMDSS ship must be provided with:

(a) the ship station licence;

(b) a certificate of the radio operator or operators referred to in the Radio Regulations;

(c) a GMDSS logbook;

(d) an Alphabetical List of Call Signs and/or Numerical Table of Identies of Stations used by the Maritime Mobile Service and the Maritime Mobile-Satellite Service (Coast, Coast Earth, Ship, Ship Earth, Radiodetermination and Special Service Stations), Ship and Ship Earth Stations, Maritime Mobile Service Identities and Selective Call Numbers or Signals, and Coast and Coast Earth Stations, Maritime Mobile Service Identities and Identification Numbers or Signals, e.g. ITU List VIIA, current edition;

(e) a list of coast stations and coast earth stations with which communications are likely to be conducted, showing watchkeeping hours and frequencies, annex to the list of coast stations, giving the particulars of coast stations, and coast earth stations participating in the GMDSS, e.g. ITU List of Coast Stations, List IV, current edition;

(f) a list of coast earth stations providing navigational and meteorological warnings and other urgent information for ships, e.g. ITU List of Radiodetermination and Special Service Stations, List VI, current edition;

(g) list of Ship Stations, e.g. ITU List of Ship Stations, List V, current edition;

(h) ITU Manual for use by the Maritime Mobile and Maritime Mobile-Satellite Services, current edition, or a summary thereof applicable to the facilities on board;

(i) in the case of vessels undertaking international voyages and other vessels which in the opinion of the Directorate have a need to use it, the International Code of Signals;

(j) a Fishing Vessel Safety Certificate, including Endorsements or, in the case of other ships, a Safety Radio Certificate;

(k) a Tonnage Certificate;

(l) a Registration certificate;

(m) an Antenna Rigging Plan, indicating the height of the MF/HF antenna above the lead-out insulator and the height of the VHF antennae above sea level; and

(n) in the case of Convention ships without duplication or provision for at-sea electronic maintenance capability, the Shore-based GMDSS maintenance contract in compliance with regulations 16 (6) or (8).

ANNEXURE 8
Theoretical VHF Range
[Regulation 1 (Definition of VHF range)]

Theoretical VHF range to be used for determining the maximum range of class A1 ships and class D fishing vessels.

The maximum range of a class A1 ship or class D fishing vessel expressed in nautical miles must be based on the formula $R_{NM} = 2.2 \text{ X } (\sqrt{h_{SS}} + \sqrt{h_{CRS}}) \text{ X } P/25$,

where R_{NM} stands for range in nautical miles;

h_{SS} stands for height of ship station VHF antenna in metres above sea level;

h_{crs} stands for height of Coast station VHF Receiver antenna in metres above sea level; and

P stands for the VHF Transmitter RF output power expressed in Watts.

Hss	h_{crs}	Watts	R_{NM}
4	4	25	8.8
4	9	25	11
4	16	25	13.2
4	25	25	15.4
4	36	25	17.6
4	49	25	19.8
4	64	25	22
4	81	25	24.2
4	100	25	26.4
9	9	25	13.2
9	16	25	15.4
9	25	25	17.6
9	36	25	19.8
9	49	25	22
9	64	25	24.2
9	81	25	26.4
9	100	25	28.6
16	16	25	17.6
16	25	25	19.8
16	36	25	22
16	49	25	24.2
16	64	25	26.4
16	81	25	28.6
16	100	25	30.8
25	25	25	22
25	36	25	24.2
25	49	25	26.4
25	64	25	28.6
25	81	25	30.8

25	100	25	33
36	36	25	26.4
36	49	25	28.6
36	64	25	30.8
36	81	25	33
36	100	25	35.2
49	49	25	30.8
49	64	25	33
49	81	25	35.2
49	100	25	37.4