# SUBCHAPTER D—SAFETY AND SPECIAL RADIO SERVICES

## PART 80—STATIONS IN THE MARITIME SERVICES

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SOURCE: 51 FR 31213, Sept. 2, 1986, unless otherwise noted.

GENERAL

## Subpart A—General Information

### § 80.1 Basis and purpose.

This section contains the statutory basis for this part of the rules and provides the purpose for which this part is issued.

(a) *Basis.* The rules for the maritime services in this part are promulgated under the provisions of the Communications Act of 1934, as amended, which vests authority in the Federal Communications Commission to regulate radio transmission and to issue licenses for radio stations. The rules in this part are in accordance wtih applicable statutes, international treaties, agreements and recommendations to which the United States is a party. The most significant of these documents are listed below with the short title appearing in parenthesis:

Communications Act of 1934, as amended—(Communications Act).

Communications Satellite Act of 1962, as amended—(Communications Satellite Act).

International Telecommunication Union Radio Regulations, in force for the United States—(Radio Regulations).

Agreement Between the United States of America and Canada for the Promotion of Safety on the Great Lakes by Means of Radio, as amended, and the Technical Regulations annexed thereto—(Great Lakes Radio Agreement).

International Convention for Safety of Life at Sea, 1974, as amended, and the Annex thereto—(Safety Convention).

Vessel Bridge-to-Bridge Radiotelephone Act—(Bridge-to-Bridge Act).

(b) *Purpose.* This part states the conditions under which radio may be licensed and used in the maritime services. These rules do not govern radio stations operated by agencies of the U.S. Government.

### § 80.2 Other regulations that apply.

The Commandant, U.S. Coast Guard has promulgated regulations which affect radiotelecommunication equipment carriage and power source installation requirements for certain ships. Inquiries concerning applicable U.S. Coast Guard regulations are to addressed to the Commandant, U.S. Coast Guard, Washington, DC 20593, or to the nearest District Headquarters Office of the U.S. Coast Guard.

### § 80.3 Other applicable rule parts of this chapter.

Other FCC rule parts applicable to licensees in the maritime services include the following:

(a) *Part 0.* This part describes the Commission's organization and delegations of authority. Part 0 also lists available Commission publications, standards and procedures for access to Commission records and location on Commission monitoring stations.

(b) *Part 1.* This part includes rules of practice and procedure for license applications, adjudicatory proceedings, procedures for reconsideration and review of the Commission actions; provisions concerning violation notices and forfeiture proceedings; and the environmental processing requirements that, if applicable, must be complied with prior to the initiation of construction.

(c) *Part 2.* This part contains the Table of Frequency Allocations and special requirements in international regulations, recommendations, agreements, and treaties. This part also contain standards and procedures concerning marketing of radio frequency devices, and for obtaining equipment authorization.

(d) *Part 13.* This part contains information and rules for the licensing of commercial radio operators.

(e) *Part 17.* This part contains requirements for construction, marking and lighting of antenna towers.

(f) Part 20 of this chapter which governs commercial mobile radio services which include subpart J of this part (public coast stations).

(g) *Part 21.* This part contains rules concerning point-to-point microwave service authority relating to communication common carriers.

(h) *Part 64.* This part contains miscellaneous rules relating to communication common carriers.

(i) *Part 68.* This part contains technical standards for connection of terminal equipment to the telephone network.

(j) *Part 87.* This part contains rules for the aviation services. Some maritime frequencies are authorized for use by aircraft stations for safety and distress, public correpondence and for operational communications.

(k) *Part 94.* This part contains rules concerning the private microwave service relating to point-to-point communication requirements.

[51 FR 31213, Sept. 2, 1986, as amended at 55 FR 20398, May 16, 1990; 59 FR 18499, Apr. 19, 1994]

### § 80.5 Definitions.

*Alaska—public fixed station.* A fixed station in Alaska which is open to public correspondence and is licensed by the Commission for radio communication with Alaska-Private fixed stations on paired channels.

*Alaska—private fixed station.* A fixed station in Alaska which is licensed by the Commission for radio communication within Alaska and with associated ship stations, on single frequency channels. Alaska-private fixed stations are also eligible to communicate with Alaska-public fixed stations on paired channels.

*Associated ship unit.* A portable VHF transmitter for use in the vicinity of the ship station with which it is associated.

*Automated maritime telecommunications system (AMTS).* An automatic, integrated and interconnected maritime communications system.

*Automated mutual-assistance vessel rescue system (AMVER).* An international system, operated by the U.S. Coast Guard, which provides aid to the development and coordination of search and rescue (SAR) efforts. Data is made available to recognized SAR agencies or vessels of any nation for reasons related to marine safety.

*Bridge-to-bridge station.* A radio station located on a ship's navigational bridge or main control station operating on a specified frequency which is used only for navigational communications, in the 156–162 MHz band.

*Cargo ship safety radiotelegraphy certificate.* A certificate issued after an inspection of a cargo ship radiotelegraph station which complies with the applicable Safety Convention radio requirements.

*Cargo ship safety radiotelephony certificate.* A certificate issued after inspection of a cargo ship radiotelephone station which complies with the applicable Safety Convention radio requirements.

*Categories of ships.* (1) When referenced in Part II of Title III of the Communications Act or the radio provisions of the Safety Convention, a ship is a *passenger ship* if it carries or is licensed or certificated to carry more than twelve passengers. A *cargo ship* is any ship not a passenger ship.

(2) A *commercial transport vessel* is any ship which is used primarily in commerce (i) for transporting persons or goods to or from any harbor(s) or port(s) or between places within a harbor or port area, or (ii) in connection with the construction, change in construction, servicing, maintenance, repair, loading, unloading, movement, piloting, or salvaging of any other ship or vessel.

(3) The term *passenger carrying vessel*, when used in reference to Part III, Title III of the Communications Act of the Great Lakes Radio Agreement, means any ship transporting more than six passengers for hire.

(4) *Power-driven vessel.* Any ship propelled by machinery.

(5) *Towing vessel.* Any commercial ship engaged in towing another ship astern, alongside or by pushing ahead.

(6) *Compulsory ship.* Any ship which is required to be equipped with radiotelecommunication equipment in order to comply with the radio or radio-navigation provisions of a treaty or statute to which the vessel is subject.

(7) *Voluntary ship.* Any ship which is not required by treaty or statute to be equipped with radiotelecommunication equipment.

*Coast station.* A land station in the maritime mobile service.

*Commercial communications.* Communications between coast stations and ship stations aboard commercial transport vessels, or between ship stations aboard commercial transport vessels, which relate directly to the purposes for which the ship is used including the piloting of vessels, movements of vessels, obtaining vessel supplies, and scheduling of repairs.

*Day.* (1) Where the word *day* is applied to the use of a specific frequency assignment or to a specific authorized transmitter power, its use means transmission on the frequency assignment or with the authorized transmitter power during that period of time included between one hour after local sunrise and one hour before local sunset.

(2) Where the word *day* occurs in reference to watch requirements, or to equipment testing, its use means the calendar day, from midnight to midnight, local time.

*Digital selective calling (DSC).* A synchronous system developed by the International Radio Consultative Committee (CCIR), used to establish contact with a station or group of stations automatically by means of radio. The operational and technical characteristics of this system are contained in CCIR Recommendation 493.

*Direction finder (radio compass).* Apparatus capable of receiving radio signals and taking bearings on these signals

from which the true bearing and direction of the point of origin may be determined.

*Distress signal.* The distress signal is an internationally recognized radiotelegraph or radiotelephone transmission which indicates that a ship, aircraft, or other vehicle is threatened by grave and imminent danger and requests immediate assistance.

(1) In radiotelegraphy, the international distress signal consists of the group ''three dots, three dashes, three dots'', transmitted as a single signal in which the dashes are emphasized so as to be distinguished clearly from the dots.

(2) In radiotelephony, the international distress signal consists of the enunciation of the word ''Mayday'', pronounced as the French expression ''m'aider''. In case of distress, transmission of this particular signal is intended to ensure recognition of a radiotelephone distress call by stations of any nationality.

*Distress traffic.* All messages relative to the immediate assistance required by a ship, aircraft, or other vehicle in distress.

*Emergency position indicating radiobeacon (EPIRB) station.* A station in the maritime mobile service the emissions of which are intended to facilitate search and rescue operations.

*Environmental communications.* Broadcasts of information about the environmental conditions in which vessels operate, i.e., weather, sea conditions, time signals adequate for practical navigation, notices to mariners, and hazards to navigation.

*Fleet radio station license.* An authorization issued by the Commission for two or more ships having a common owner or operator.

*Global maritime distress and safety system (GMDSS).* An International Maritime Organization (IMO) worldwide coordinated maritime distress system designed to provide the rapid transfer of distress messages from vessels in distress to units best suited for giving or coordinating assistance. The system includes standardized equipment and operational procedures, unique identifers for each station, and the integrated use of frequency bands and radio systems to ensure the transmission and reception of distress and safety calls and messages at short, medium and long ranges.

*Great Lakes.* This term, used in this part in reference to the Great Lakes Radio Agreement, means all of Lakes Ontario, Erie, Huron (including Georgian Bay), Michigan, Superior, their connecting and tributary waters and the St. Lawrence River as far east as the lower exit of the St. Lambert Lock as Montreal in the Province of Quebec, Canada, but does not include any connecting and tributary waters other than: the St. Marys River, the St. Clair River, Lake St. Clair, the Detroit River and the Welland Canal.

*Harbor or port.* Any place to which ships may resort for shelter, or to load or unload passengers or goods, or to obtain fuel, water, or supplies. This term applies to such places whether proclaimed public or not and whether natural or artifical.

*Inland waters.* This term, as used in reference to waters of the United States, its territories and possessions, means waters that lie landward of the boundary lines of inland waters as contained in 33 CFR part 82, as well as waters within its land territory, such as rivers and lakes, over which the United States exercises sovereignty.

*Marine utility station.* A station in the maritime mobile service consisting of one or more handheld radiotelephone units licensed under a single authorization. Each unit is capable of operation while being hand-carried by an individual. The station operates under the rules applicable to ship stations when the unit is aboard a vessel, and under the rules applicable to private coast stations when the unit is on land.

*Maritime control communications.* Communications between private coast and ship stations or between ship stations licensed to a state or local governmental entity, which relate directly to the control of boating activities or assistance to ships.

*Maritime mobile repeater station.* A land station at a fixed location established for the automatic retransmission of signals to extend the range of communication of ship and coast stations.

*Maritime mobile-satellite service.* A mobile-satellite service in which mobile

earth stations are located on board ships. Survival craft stations and EPIRB stations may also participate in this service.

*Maritime mobile service.* A mobile service between coast stations and ship stations, or between ship stations, or between associated on-board communication stations. Survival craft stations and EPIRB stations also participate in this service.

*Maritime mobile service identities.* An international system for the identification of radio stations in the maritime mobile service. The system is comprised of a series of nine digits which are transmitted over the radio path to uniquely identify ship stations, ship earth stations, coast stations, coast earth stations and groups of stations.

*Maritime radiodetermination service.* A maritime radiocommunication service for determining the position, velocity, and/or other characteristics of an object, or the obtaining of information relating to these parameters, by the propagation properties of radio waves.

*Maritime support station.* A station on land used in support of the maritime services to train personnel and to demonstrate, test and maintain equipment.

*Navigable waters.* This term, as used in reference to waters of the United States, its territories and possessions, means the waters shoreward of the baseline of its territorial sea and internal waters as contained in 33 CFR 2.05–25.

*Navigational communications.* Safety communications pertaining to the maneuvering of vessels or the directing of vessel movements. Such communications are primarily for the exchange of information between ship stations and secondarily between ship stations and coast stations.

*Noncommercial communications.* Communication between coast stations and ship stations other than commercial transport ships, or between ship stations aboard other than commercial transport ships which pertain to the needs of the ship.

*Non-selectable transponder.* A transponder whose coded response is displayed on any conventional radar operating in the appropriate band.

*On-board communication station.* A low-powered mobile station in the maritime mobile service intended for use for internal communications on board a ship, or between a ship and its lifeboats and liferafts during lifeboat drills or operations, or for communication within a group of vessels being towed or pushed, as well as for line handling and mooring instructions.

*On-board repeater.* A radio station that receives and automatically retransmits signals between on-board communication stations.

*Open sea.* The water area of the open coast seaward of the ordinary low-water mark, or seaward of inland waters.

*Operational fixed station.* A fixed station, not open to public correspondence, operated by entities that provide their own radiocommunication facilities in the private land mobile, maritime or aviation services.

*Passenger ship safety certificate.* A certificate issued by the Commandant of the Coast Guard after inspection of a passenger ship which complies with the requirements of the Safety Convention.

*Pilot.* Pilot means a Federal pilot required by 46 U.S.C. 764, a state pilot required under the authority of 46 U.S.C. 211, or a registered pilot required by 46 U.S.C. 216.

*Port operations communications.* Communications in or near a port, in locks or in waterways between coast stations and ship stations or between ship stations, which relate to the operational handling, movement and safety of ships and in emergency to the safety of persons.

*Portable ship station.* A ship station which includes a single transmitter intended for use upon two or more ships.

*Private coast station.* A coast station, not open to public correspondence, which serves the operational, maritime control and business needs of ships.

*Public coast station.* A coast station that offers radio communication common carrier services to ship radio stations.

*Public correspondence.* Any telecommunication which the offices and stations must, by reason of their being at the disposal of the public, accept for transmission.

*Radar beacon (RACON).* A receiver-transmitter which, when triggered by a

radar, automatically returns a distinctive signal which can appear on the display of the triggering radar, providing range, bearing and identification information.

*Radioprinter operations.* Communications by means of a direct printing radiotelegraphy system using any alphanumeric code, within specified bandwidth limitations, which is authorized for use between private coast stations and their associated ship stations on vessels of less than 1600 gross tons.

*Safety communication.* The transmission or reception of distress, alarm, urgency, or safety signals, or any communication preceded by one of these signals, or any form of radiocommunication which, if delayed in transmission or reception, may adversely affect the safety of life or property.

*Safety signal.* (1) The safety signal is the international radiotelegraph or radiotelephone signal which indicates that the station sending this signal is preparing to transmit a message concerning the safety of navigation or giving important meteorological warnings.

(2) In radiotelegraphy, the international safety signals consists of three repetitions of the group ''TTT'', sent before the call, with the letters of each group and the successive groups clearly separated from each other.

(3) In radiotelephony, the international safety signal consists of three oral repetitions of ''Security'', pronounced as the French word ''Securite'', sent before the call.

*Selectable transponder.* A transponder whose coded response may be inhibited or displayed on a radar on demand by the operator of that radar.

*Selective calling.* A means of calling in which signals are transmitted in accordance with a prearranged code to operate a particular automatic attention device at the station whose attention is sought.

*Ship earth station.* A mobile earth station in the maritime mobile-satellite service located on board ship.

*Ship or vessel. Ship* or *vessel* includes every description of watercraft or other artificial contrivance, except aircraft, capable of being used as a means of transportation on water whether or not it is actually afloat.

*Ship radio station license.* An authorization issued by the Commission to operate a radio station onboard a vessel.

*Ship station.* A mobile station in the maritime mobile service located onboard a vessel which is not permanently moored, other than a survival craft station.

*Station.* One or more transmitters or a combination of transmitters and receivers, including the accessory equipment, necessary at one location for carrying on radiocommunication services.

*Survival craft station.* A mobile station in the maritime or aeronautical mobile service intended solely for survival purposes and located on any lifeboat, liferaft or other survival equipment.

*Underway.* A vessel is underway when it is not at anchor, made fast to the shore, or aground.

*Urgency signal.* (1) The urgency signal is the international radiotelegraph or radiotelephone signal which indicates that the calling station has a very urgent message to transmit concerning the safety of a ship, aircraft, or other vehicle, or of some person on board or within sight.

(2) In radiotelegraphy, the international urgency signal consists of three repetitions of the group ''XXX'', sent before the call, with the letters of each group and the successive groups clearly separated from each other.

(3) In radiotelephony, the international urgency signal consists of three oral repetitions of the group of words ''PAN PAN'', each word of the group pronounced as the French word ''PANNE'' and sent before the call.

*Vessel traffic service (VTS).* A U.S. Coast Guard traffic control service for ships in designated water areas to prevent collisions, groundings and environmental harm.

*Watch.* The act of listening on a designated frequency.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 7417, Mar. 11, 1987; 52 FR 35244, Sept. 18, 1987; 56 FR 3783, Jan. 31, 1991; 57 FR 26778, June 16, 1992; 58 FR 16504, Mar. 29, 1993; 60 FR 35510, July 10, 1995]

## Subpart B—Applications and Licenses

### § 80.11 Scope.

This subpart contains the procedures and requirements for the filing of applications for licenses to operate radio facilities in the maritime services. Part 1 of the Commission's rules contains the general rules of practice and procedure applicable to proceedings before the FCC.

### § 80.13 Station license required.

(a) Except for those excluded in paragraph (c) of this section, stations in the maritime service must be licensed by the FCC either individually or by fleet.

(b) One ship station license will be granted for operation of all maritime services transmitting equipment on board a vessel.

(c) A ship station is licensed by rule and does not need an individual license issued by the FCC if the ship station is not subject to the radio equipment carriage requirements of the Communications Act or any other treaty or agreement to which the United States is signatory, the ship station does not travel to foreign ports, and the ship station does not make international communications. A ship station licensed by rule is authorized to transmit radio signals using a marine radio operating in the 156–162 MHz band, any type of EPIRB, and any type of radar installation. All other transmissions must be authorized under a ship station license. Even though an individual license is not required, a ship station licensed by rule must be operated in accordance with all applicable operating requirements, procedures, and technical specifications found in this Part 80.

[61 FR 18226, Apr. 24, 1996]

### § 80.15 Eligibility for station license.

(a) *General.* A station license cannot be granted to or held by a foreign government or its representative.

(b) *Public coast stations and Alaska-public fixed stations.* A station license for a public coast station or an Alaska-public fixed station cannot be granted to or held by:

(1) Any alien or the representative of any alien;

(2) Any foreign government or its representative;

(3) Any corporation organized under the laws of any foreign government;

(4) Any corporation of which any officer or director is an alien;

(5) Any corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or its representative, or by a corporation organized under the laws of a foreign country;

(6) Any corporation directly or indirectly controlled by any other corporation of which any officer or more than one-fourth of the directors are aliens, if the Commission finds that the public interest will be served by the refusal or revocation of such license; or

(7) Any corporation directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or its representatives, or by any corporation organized under the laws of a foreign country, if the Commission finds that the public interest will be served by the refusal or revocation of such license.

(c) *Private coast and marine utility stations.* The supplemental eligibility requirements for private coast and marine utility stations are contained in § 80.501(a).

(d) *Ship stations.* A ship station license may only be granted to:

(1) The owner or operator of the vessel;

(2) A subsidiary communications corporation of the owner or operator of the vessel;

(3) A State or local government subdivision; or

(4) Any agency of the U.S. Government subject to section 301 of the Communications Act.

(e) *EPIRB stations.* (1) New class C EPIRB stations will not be authorized after February 1, 1995. Class C EPIRB stations installed and licensed before February 1, 1995, will be authorized until February 1, 1999:

(i) For use on board vessels operating within 32 kilometers (approximately 20 miles) of shore and in the Great Lakes, or

(ii) On passenger and cargo vessels with survival craft as required or recommended by the U.S. Coast Guard.

(2) Class A or B EPIRB stations will be authorized for use on board the following types of vessels:

(i) Vessels authorized to carry survival craft; or

(ii) Vessels expected to travel in waters beyond the range of marine VHF distress coverage which is generally considered to be more than 32 kilometers (approximately 20 miles) offshore; or

(iii) Vessels required to be fitted with EPIRB's to comply with U.S. Coast Guard regulations.

(3) A 406.025 MHz EPIRBs may be used by any ship required by U.S. Coast Guard regulations to carry an EPIRB or by any ship that is equipped with a VHF ship radio station.

[51 FR 31213, Sept. 2, 1986, as amended at 53 FR 37308, Sept. 26, 1988; 58 FR 33344, June 17, 1993]

### §80.17 Administrative classes of stations.

(a) Stations in the Maritime Mobile Service are licensed according to class of station as follows:

(1) Public coast stations.

(2) Private coast stations.

(3) Maritime support stations.

(4) *Ship stations.* The ship station license may include authority to operate other radio station classes aboard ship such as; radionavigation, on-board, satellite, EPIRB, radiotelephone, radiotelegraph and survival craft.

(5) Marine utility stations.

(b) Stations on land in the Maritime Radiodetermination Service are licensed according to class of station as follows:

(1) Shore radiolocation stations.

(2) Shore radionavigation stations.

(c) Fixed stations in the Fixed Service associated with the maritime services are licensed as follows:

(1) Operational fixed stations.

(2) Alaska-public fixed stations.

(3) Alaska-private fixed stations.

### §80.19 Standard forms to be used.

The following table indicates the correct standard form or other means to be used when submitting an application. Forms may be obtained from the Commission at Gettysburg, PA 17325, Washington, DC 20554 or any of its District Offices.

| Class of station(s) | Application for | Use |
|---|---|---|
| Ship | New license | FCC Form 506. |
| | Renewal of license without modification | FCC Form 405–B. |
| | Renewal of license with modification | FCC Form 506. |
| | Modification of license | FCC Form 506. |
| | Temporary operating authority in conjunction with application for a new license or modification of license. | FCC Form 506–A. |
| | Radio inspection and certification | FCC Form 801.[1] |
| | Exemption | FCC Form 820. |
| | Special temporary authority | Letter/Telegram. |
| | Transfer of control of corporation | FCC Form 703. |
| Public coast | New license | FCC Form 503. |
| Private coast | Modification of license | FCC Form 503. |
| Operational fixed | Renewal of license with modification | FCC Form 503. |
| Shore radionavigation | Assignment of authorization | FCC Forms 1046 and 503. |
| Shore radiolocation | Transfer of Control of Corporation | FCC Form 703. |
| Maritime support | Renewal of license without modification | FCC Form 452–R |
| Alaska-public fixed | Special temporary authority | Letter/Telegram. |
| Alaska-private fixed | | |
| Marine utility | | |

[1] FCC Form 808 also required when inspection is to be conducted during other than normal business hours.

[51 FR 31213, Sept. 2,1986, as amended at 56 FR 64715, Dec. 12, 1991]

### § 80.21 Supplemental information required.

Applications for radio stations to be located within designated radio protection areas, radio stations with a proposed antenna structure which will require antenna markings, a new public coast stations proposing operations in the 156–162 MHz band and new ship stations on vessels not located in the United States must contain supplementary information as indicated in this section. Other supplemental information may be required by other rule sections of this part concerning particular maritime services.

(a) To minimize harmful interference at the National Radio Astronomy Observatory site at Green Bank, Pocahontas County, WV, and at the Naval Radio Research Observatory site at Sugar Grove, Pendleton County, WV, an applicant for a new station authorization (other than mobile or temporary fixed), or for modification of an existing license to change the frequency, power, antenna location, height or directivity within the area bounded by 39°15′N. on the north, 78°30′W. on the east, 37°30′N. on the south and 80°30′W. on the west, must, at the time of filing such application with the Commission, notify the Director, National Radio Astronomy Observatory, Attn: Interference Office, Post Office Box No. 2, Green Bank, WV 24944, in writing, of the geographical coordinates of the antenna, antenna height, antenna directivity if any, proposed frequency, type of emission, and power. The application must show the date notification was made to the Observatory. The Commission will allow twenty (20) days after receipt of the notification for comments or objections. If a timely objection is received, the Commission will consider the comments or objections and act appropriately.

(b) Protection for Federal Communications Commission monitoring stations:

(1) Geographical coordinates of FCC facilities which require protection are listed in § 0.121(c) of this chapter. Applications for stations (except mobile stations) which will be located within 80 km (50 miles) of the referenced coordinates are examined to determine extent of possible interference. A clause protecting the monitoring station may be added to the station license.

(2) Prospective applicants of stations for which the calculated value of expected field strength exceeds 10 mV/m ($-65.8$ dBW/m$^2$) at the referenced coordinates, should consult with the FCC to determine if any protection is necessary. Write:

Chief, Compliance and Information Bureau, Federal Communications Commission, Washington, DC 20554.

(c) Each application for a new public coast station operating on frequencies in the band 156–162 MHz must include as supplementary information a chart, with supporting data, showing the service area contour computed in accordance with subpart P of this part.

(d) Each application for a new public coast station operating on frequencies in the band 156–162 MHz to be located within the coordination boundaries of ''Arrangement ''A'' of the Canada/U.S.A. Frequency Coordination Agreement above 30 MHz'', must comply with the provisions of the ''Canada/U.S.A. Channeling Agreement for VHF Maritime, Public Correspondence'' as contained in § 80.57.

(e) An application for a new station on a vessel not located in the United States must include:

(1) A statement that the vessel is not documented or otherwise registered by any foreign authority; and

(2) A statement that the foreign authorities where the vessel is located will not or cannot license the vessel radio equipment, or that they do not object to the licensing of the equipment by the United States.

[51 FR 31213, Sept. 2, 1986, as amended at 60 FR 50122, Sept. 28, 1995]

### § 80.23 Filing of applications.

Rules about the filing of applications for radio station licenses are contained in this section. Applications requiring fees as set forth in part 1, subpart G of this chapter must be filed with the Federal Communications Commission in accordance with § 1.1102 of the Rules.

(a) Each application must specify an address in the United States to be used by the Commission in serving documents or directing correspondence to the licensee.

(b) An original of each application must be filed.

(c) One application for two or more new maritime utility stations may be submitted when the applicant and proposed area of operation for each station is the same.

(d) One application for transfer of control may be submitted for two or more stations subject to this part when the individual stations are clearly identified and the following elements are the same for all existing or requested station authorizations involved:

(1) Applicant;

(2) Specific details of basic request.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 10231, Mar. 31, 1987; 57 FR 26778; June 16, 1992]

### §80.25 License term.

(a) Licenses for ship stations in the maritime services will normally be issued for a term of ten years from the date of original issuance, major modification, or renewal.

(b) Licenses other than ship stations in the maritime services will normally be issued for a term of five years from the date of original issuance, major modification, or renewal.

(c) Licenses for stations engaged in developmental operation will be issued for a period not to exceed one year from date of grant.

[51 FR 31213, Sept. 2, 1986, as amended at 58 FR 68062, Dec. 23, 1993]

### §80.29 Changes during license term.

(a) The following table indicates the required action for changes made during the license term:

| Type of change | Required action |
|---|---|
| Mailing address | Written notice to the Commission. |
| Name of licensee (without change in ownership, control or corporate structure). | Written notice to the Commission. |
| Transfer of control of a corporation. | Comply with §1.924 of this chapter. |
| Assignment of a radio station license. | Comply with §1.924 of this chapter. |
| Name of the vessel | Written notice to the Commission. |
| Addition of transmitting equipment which operates on a frequency or frequency band not authorized on present license. | Application for modification of license. |
| Addition or replacement of transmitting equipment on a frequency or frequency band authorized on present license. | None (provided the equipment is properly type accepted and the emission characteristics remain the same). |
| Increased number of mobiles (AMTS). | Written notice to the Commission. |

(b) Written notices must be sent to the Federal Communications Commission, Gettysburg, PA 17325.

[51 FR 31213, Sept. 2, 1986, as amended at 56 FR 3783, Jan. 31, 1991]

### §80.31 Cancellation of license.

When a station subject to this part which is not a communication common carrier permanently discontinues operation, the licensee must return the station license to the Commission's office at P.O. Box 1040, Gettysburg, PA 17325, for cancellation. Communication common carrier stations subject to this part must comply with the discontinuance of service provisions of part 63 of this chapter.

### §80.33 Developmental license.

This section contains rules about the licensing of developmental operations at stations subject to this part.

(a) *Supplemental eligibility*. An authorization for developmental operation will be issued only to persons eligible to operate such stations on a regular basis.

(b) *Showing required*. Each application for a developmental license must be accompanied by a letter showing that:

(1) The applicant has an organized plan of development leading to an objective;

(2) A point has been reached in the program where actual transmission by radio is essential to progress;

(3) The program will contribute to the use of the radio services subject to this part;

(4) The program will be conducted by qualified personnel;

(5) The applicant is legally qualified and possesses technical facilities for conduct of the program as proposed; and

(6) The public interest, convenience and necessity will be served by the proposed operation.

(c) *Signature and statement of understanding.* The showing must be signed by the applicant and state that the applicant agrees that any developmental license issued will be accepted with the express understanding that it is subject to change in any of its terms or to cancellation in its entirety at any time, upon reasonable notice but without a hearing, if, in the opinion of the Commission, circumstances should so require.

(d) *Assignable frequencies.* Applicants for a developmental license may be authorized to use a frequency or frequencies available for the service and class of station proposed. The number of frequencies assignable to a particular station will depend upon the specific requirements of the developmental program and the number of frequencies available for use in the area where the station is to be operated.

(e) *Developmental program.* (1) The developmental program as described by the applicant in the application for authorization must be substantially followed unless the Commission otherwise directs.

(2) Where some phases of the developmental program are not covered by the general rules of the Commission and the rules in this part, the Commission may specify supplemental or additional requirements or conditions.

(3) The Commission may, from time to time, require a station engaged in developmental work to conduct special tests which are reasonable to the authorized developmental program.

(f) *Use of developmental stations.* (1) Stations authorized to conduct developmental operations must conform to all applicable technical and operating requirements contained in this part, unless a waiver is specifically provided in the station authorization.

(2) Communication with any station of a country other than the United States is prohibited unless specifically provided in the station authorization.

(3) Developmental operations must not cause harmful interference to the operation of stations regularly authorized to use the frequency or frequencies.

(g) *Report of operation required.* A report on the results of the developmental program must be filed within 60 days of the expiration of the license. A report must accompany a request for renewal of the license. Matters which the applicant does not wish to disclose publicly may be so labeled; they will be used solely for the Commission's information. However, public disclosure is governed by § 0.467 of this chapter. The report must include the following:

(1) Results of operation to date.

(2) Analysis of the results obtained.

(3) Copies of any published reports.

(4) Need for continuation of the program.

(5) Number of hours of operation on each authorized frequency during the term of the license to the date of the report.

### § 80.37 One authorization for a plurality of stations.

*Marine utility stations.* One station license may be issued to authorize a designated maximum number of marine utility stations operating at temporary unspecified locations, normally in multiples of ten stations when:

(a) The licensee of each station is the same; and

(b) The authorized area of operation of each station is the same.

### § 80.39 Authorized station location.

This section describes the circumstances under which a coast station location is classified as permanent or temporary unspecified.

(a) *Permanent.* Whenever a station is to transmit from a single location, the station location is *permanent* and the location must be shown on the application.

(b) *Temporary unspecified.* Whenever a station is to transmit from unspecified locations within a prescribed geographical area, the station location is *temporary unspecified* and the proposed geographical operating area must be shown on the application.

### § 80.41 Control points and dispatch points.

This section applies to coast or fixed stations at permanent locations.

(a) Applicants must provide the address or location of the control point where station records will be kept.

(b) When the address or location of a control point where station records are kept is to be changed, the licensee must request a modification of the station license.

(c) Control points not collocated with station records and dispatch points may be installed and used without obtaining any authorization from the Commission.

### §80.43 Equipment acceptable for licensing.

Transmitters listed in §80.203 must be type accepted for a particular use by the Commission based upon technical requirements contained in subparts E and F of this part.

### §80.45 Frequencies.

When an application is submitted on FCC Form 503, the applicant must propose frequencies to be used by the station. The applicant must ensure that frequencies requested are consistent with the applicant's eligibility, the proposed class of station operation and the frequencies available for assignment as contained in subpart H of this part.

### §80.47 Operation during emergency.

A station may be used for emergency communications when normal communication facilities are disrupted. The Commission may order the discontinuance of any such emergency communication service.

### §80.49 Time in which station is placed in operation.

This section applies to public coast and public fixed stations. When a new license has been issued or additional operating frequencies have been authorized, if the station or frequencies authorized have not been placed in operation within eight months from the date of the grant, the authorization becomes invalid and must be returned to the Commission for cancellation.

### §80.51 Ship earth station licensing.

(a) In cases where a ship earth station is required to be commissioned before it is certified to use a privately owned satellite system, FCC Form 506 must be submitted to the Commission prior to transmission on any of the satellite frequency bands allocated for maritime satellite communications.

(b) A ship earth station authorized to operate the INMARSAT space segment must display the Commission license in conjunction with the commissioning certificate issued by the INMARSAT Organization. Ship earth stations that were operating in the MARISAT system and are not commissioned by the INMARSAT Organization will continue to be used in the INMARSAT system without a commissioning certificate issued by the INMARSAT Organization. The continued use of such equipment, however, will not be permitted after September 1, 1991, unless a commissioning certificate is obtained from the INMARSAT Organization. Notwithstanding the requirements in this paragraph, ship earth stations can operate in the INMARSAT space segment without an INMARSAT issued commissioning certificate provided an appropriate written approval is obtained from the INMARSAT Organization in addition to the Commission's license.

### §80.53 Application for a portable ship station license.

(a) The Commission may grant a license permitting operation of a portable ship station aboard different vessels of the United States. Each application for a portable ship station must include a showing that:

(1) The station will be operated as an established class of station on board ship, and

(2) A station license for portable equipment is necessary to eliminate frequent application to operate a ship station on board different vessels.

### §80.54 Automated Maritime Telecommunications System (AMTS)—System Licensing.

AMTS licensees will be issued blanket authority for a system of coast stations and mobile units (subscribers). AMTS applicants will specify the maximum number of mobile units to be placed in operation during the license period.

[56 FR 3783, Jan. 31, 1991]

**§ 80.55 Application for a fleet station license.**

(a) An applicant may apply for licenses for two or more radiotelephone stations aboard different vessels on the same application. Under these circumstances a fleet station license may be issued for operation of all radio stations aboard the vessels in the fleet.

(b) The fleet station license is issued on the following conditions:

(1) The licensee must keep a current list of vessel names and registration numbers authorized by the fleet license;

(2) The vessels do not engage in voyages to any foreign country;

(3) The vessels are not subject to the radio requirements of the Communications Act or the Safety Convention.

**§ 80.56 Transfer of ship station license prohibited.**

A ship station license may not be assigned. Whenever the vessel ownership is transferred, the previous authorization must be forwarded to the Commission for cancellation. The new owner must file for a new authorization.

**§ 80.57 Canada/U.S.A. channeling arrangement for VHF maritime public correspondence.**

(a) *Canada/U.S.A. arrangement.* Pursuant to arrangements between the United States and Canada, assignment of VHF frequencies in the band 156–162 MHz to public coast stations in certain areas of Washington state, the Great Lakes and the east coast of the United States must be made in accordance with the provisions of this section.

(b) *Definitions.* On the west coast, specific terms are defined as follows:

(1) *Inland Waters Public Correspondence Sector.* A distinct geographical area in which one primary and one supplementary channel is allotted. A number of local channels may also be authorized.

(2) *Coastal Waters Public Correspondence Sector.* A distinct geographical area in which one primary and one supplementary channel is allotted. Local channels may also be authorized.

(3) *Inland Waters.* Inland waters of western Washington and British Columbia bounded by 47 degrees latitude on the south, the Canada/U.S.A. Coordination Zone Line B on the north, and to the west by 124 degrees 40 minutes longitude at the west entrance to the Strait of Juan de Fuca.

(4) *Coastal Waters.* Waters along the Pacific Coast of Washington state and Vancouver Island within the Canada/U.S.A. Coordination Zone.

(5) *Inland Waters Primary Channel.* A channel intended to cover the greater portion of an Inland Waters Public Correspondence Sector. It may provide some coverage to an adjacent sector but must not provide coverage beyond the adjacent sector. Harmful interference beyond the adjacent sector must not occur. Only one primary channel will be authorized in any sector.

(6) *Inland Waters Supplementary Channel.* A channel intended to improve coverage within a sector or to relieve traffic congestion on the primary channel. It may provide some coverage of an adjacent sector but must not provide coverage beyond the adjacent sector. Harmful interference beyond the adjacent sector must not occur. Only one supplementary channel will be authorized in any sector.

(7) *Inland Waters Local Channel.* A channel designed to provide local coverage of certain bays, inlets and ports where coverage by primary or supplementary channels is poor or where heavy traffic loading warrants. A local channel must not cause harmful interference to any primary or supplementary channels. Coverage must be confined to the designated sector.

(8) *Coastal Waters Primary Channel.* Same as (5) except for technical characteristics.

(9) *Coastal Waters Supplementary Channel.* Same as (6) except for technical characteristics.

(10) *Coastal Waters Local Channel.* Same as (7) except for technical characteristics.

(c) *Technical characteristics.* On the west coast, technical characteristics of public correspondence stations will be as follows:

(1) *Inland Waters Primary and Supplementary Channels.* The effective radiated power (ERP) must not exceed 60 watts. Antenna height must not exceed 152 meters (500 feet) above mean sea level (AMSL) with the exceptions

noted in paragraph (d)(5) of this section.

(2) *Inland Waters Local Channel.* ERP must not exceed 8 watts with an antenna height of no more than 15 meters (50 feet) AMSL or the ERP must not exceed 2 watts with an antenna height of no more than 30 meters (100 feet) AMSL.

(3) *Coastal Waters Primary and Supplementary Channels.* ERP must not exceed 125 watts with no antenna restrictions.

(4) *Coastal Waters Local Channel.* ERP must not exceed 10 watts with a maximum antenna height of 76 meters (250 feet) AMSL.

(5) Harmful interference will be determined and resolved using the definition and procedures of the ITU Radio Regulations.

(6) To keep the ERP and antenna elevations at a minimum and to limit coverage to the desired areas, an informal application may be filed for special temporary authority in accordance with §§ 1.41 and 1.925 to conduct a field survey to obtain necessary data for informal application. Such data may accompany the application and be used in lieu of theoretical calculations as required in subpart P of this part. The Seattle FCC District Office must be notified in advance of scheduled tests.

(d) *Canada/U.S.A. channeling arrangement for West Coast VHF maritime mobile public correspondence.* (1) The provisions of the Canada/U.S. channeling arrangement apply to waters of the State of Washington and of the Province of British Columbia within the coordination boundaries of ''Arrangement A'' of the Canada/U.S.A. Frequency Coordination Agreement above 30 MHz. In addition, all inland waters as far south as Olympia are to be included. A map of these waters is contained in paragraph (d)(6) of this section, Figure 1.

(2) The channeling arrangement applies to the following VHF public correspondence channels: Channels 24, 84, 25, 85, 26, 86, 27, 87 and 28.

(3) Public correspondence stations may be established by either country in accordance with the provisions of the arrangements. However, there must be an exchange of information prior to the establishment of new stations or a change in technical parameters of existing stations. Any channel except that used as primary or supplementary channel in a given sector is available for use as a local channel in that sector. Local channels are not protected from interference caused by primary or supplementary channels in adjacent sectors if these stations are in compliance with this section.

(4) Preliminary local Canadian/U.S. coordination is required for all applications at variance with this section. This coordination will be in accordance with the provisions of Arrangement ''A'' of the Canada/U.S. Frequency Coordination Agreement over 30 MHz. Stations at variance with the arrangement are not protected from interference and must not cause interference to existing or future stations which are in accordance with the agreement.

(5) Stations in existence at the time of the arrangement must have complied with the provisions of the arrangement within 12 months after it became effective with the following exceptions:

(i) Public coast (VHF) stations:

KOH627 Tacoma, Washington
KOH630 Seattle, Washington
WXY956 Camano, Washington
VAI2 Mount Parke, British Columbia
VAS5 Watts Point, British Columbia
XLK672 Bowen Island, British Columbia

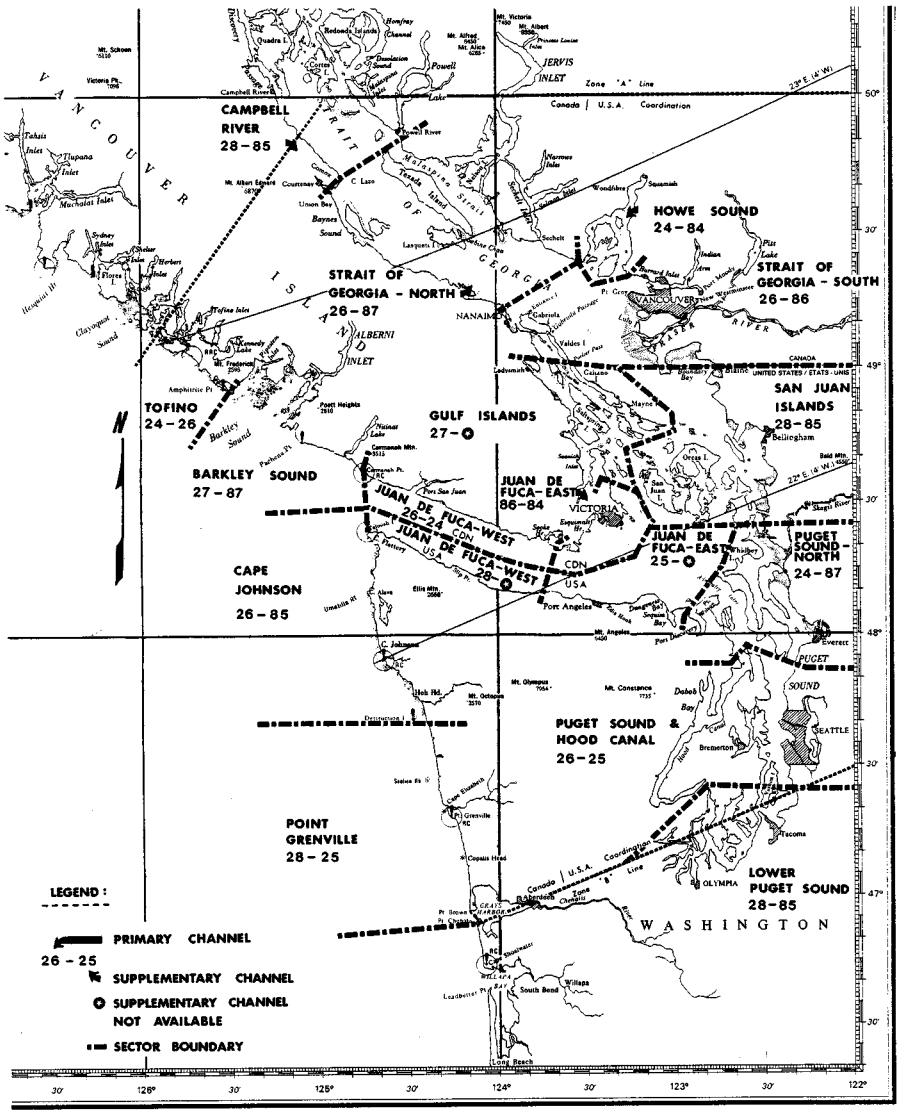
(ii) These stations employing frequencies assigned at the time of the arrangement may be maintained with existing antenna heights in excess of 152 meters (500 feet) unless harmful interference to existing stations is identified and reported directly to the Federal Communications Commission or through the Public Correspondence Committee of the North Pacific Marine Radio Council.

(6) The agreed channeling arrangements for the west coast are as follows:

| Public correspondence sector | Primary channel | Supplementary channel |
|---|---|---|
| British Columbia (Coastal Waters): | | |
| Tofino | 24 | 26 |
| Barkley Sound | 27 | 87 |
| British Columbia (Inland Waters) | | |
| Juan de Fuca West (Canada) | 26 | 24 |
| Juan de Fuca East (Canada) | 86 | 84 |
| Gulf Islands | 27 | [1] |
| Strait of Georgia South | 26 | 86 |
| Howe Sound | 24 | 84 |
| Strait of Georgia North | 26 | 87 |

| Public correspondence sector | Primary channel | Supplementary channel |
|---|---|---|
| Campbell River | 28 | 85 |
| Washington (Coastal Waters): | | |
| Cape Johnson | 26 | 85 |
| Point Grenville | 28 | 25 |
| Washington (Inland Waters): | | |
| Juan de Fuca West (U.S.A.) | 28 | [1] |
| Juan de Fuca East (U.S.A.) | 25 | [1] |
| San Juan Islands | 28 | 85 |
| Puget Sound North | 24 | 87 |
| Puget Sound Hood Canal | 26 | 25 |
| Lower Puget Sound | 28 | 85 |

[1] Supplementary channel not available.


CAMPBELL RIVER 28-85
HOWE SOUND 24-84
STRAIT OF GEORGIA - NORTH 26-87
STRAIT OF GEORGIA - SOUTH 26-86
TOFINO 24-26
GULF ISLANDS 27-
SAN JUAN ISLANDS 28-85
BARKLEY SOUND 27-87
JUAN DE FUCA-EAST 86-84
JUAN DE FUCA-WEST 26-24
JUAN DE FUCA-WEST 28-
JUAN DE FUCA-EAST 25-
PUGET SOUND-NORTH 24-87
CAPE JOHNSON 26-85
PUGET SOUND & HOOD CANAL 26-25
POINT GRENVILLE 28-25
LOWER PUGET SOUND 28-85
WASHINGTON
LEGEND:
PRIMARY CHANNEL
26 - 25
SUPPLEMENTARY CHANNEL
SUPPLEMENTARY CHANNEL NOT AVAILABLE
SECTOR BOUNDARY

(e) *Canada/U.S.A. VHF channeling arrangement on the Great Lakes and the St. Lawrence Seaway.* Channels on the Great Lakes and the St. Lawrence Seaway will be assigned as follows:

(1) The provisions of the arrangement apply to the waters of the Great Lakes and the St. Lawrence Seaway within the coordination boundaries of ''Arrangement A'' of the Canada/U.S.A. Frequency Coordiantion Agreement above 30 MHz.

(2) The arrangement applies to the following public correspondence channels: Channels 24, 84, 25, 85, 26, 86, 27, 87, 28, and 88.

(3) Canada and the U.S.A. use the following channeling arrangement:

(i) Canadian channels: 24, 85, 27, 88 (Note 1).

(ii) U.S.A. channels: 84, 25, 86, 87, 28 (Note 2).

(iii) Shared channels: 26 (Note 3).

NOTES:

1. Also assignable to U.S. Stations within the frequency coordination zone following successful coordination with Canada.

2. Also assignable to Canadian station within the frequency coordination zone following successful coordination with the United States.

3. Changes to existing assignments and new assignments within the frequency coordination zone of either country are subject to prior coordination with the other Administration.

(f) *Canada/U.S.A. channeling arrangement for East Coast VHF maritime mobile public correspondence.* For purposes of this section, channels on the east coast will be assigned as follows:

(1) The provisions of the arrangement apply to the Canadian and U.S.A. east coast waters including the St. Lawrence Seaway within the coordination boundaries of ''Arrangement A'' of the Canada/U.S.A. Frequency Coordination Agreement above 30 MHz.

(2) The arrangement applies to the following public correspondence channels: Channels 24, 84, 25, 85, 26, 86, 27, 87, 28, and 88.

(3) Canada and the U.S.A. use the following channeling arrangement:

(i) Canadian channels: 24, 85, 27, 88 (Note 1).

(ii) U.S.A. channels: 84, 25, 86, 87, 28 (Note 2).

(iii) Shared channel: 26 (Note 3).

NOTES:

1. Also assignable to U.S. stations within the frequency coordination zone following successful coordination with Canada.

2. Also assignable to Canadian stations within the frequency coordination zone following successful coordination with the United States.

3. Changes to existing assignments and new assignments within the frequency coordination zone of either country are subject to prior coordination with the other Administration.

### § 80.59 Compulsory ship inspections.

(a) Application for inspection of ships subject to the Communications Act or the Safety Convention. FCC Form 801, including documentation that the appropriate inspection fees have been paid, must be used to apply for inspection and certification for ships subject to Part II or Part III of Title III of the Communications Act or the Safety Convention. An inspection of the bridge-to-bridge radio stations on board vessels subject to the Vessel Bridge-to-Bridge Radiotelephone Act will be conducted when the vessels are additionally subject to any of the laws and treaties mentioned in the previous sentence.

(1) Applications for inspections of ships subject to Part II or Part III of Title III or the Safety Convention must be submitted to the Commission in sufficient time to reach the FCC field office serving the port where the ship is to be inspected at least three days prior to the proposed inspection date.

(2) If the inspection described in paragraph (a)(1) of this section is to be scheduled on a Sunday, national holiday or during other than established working hours on any other day, the applicant must additionally submit FCC Form 808 to the FCC field office serving the port where the ship is to be inspected at least three days prior to the inspection.

(b) Inspection and certification of a ship subject to the Great Lakes Agreement. The FCC will not inspect Great Lakes Agreement vessels. An inspection and certification of a ship subject to the Great Lakes Agreement must be made by a technician holding one of the following: an FCC General Radiotelephone Operator License, a GMDSS Radio Maintainer's License, a Second

Class Radiotelegraph Operator's Certificate, or a First Class Radiotelegraph Operator's Certificate. The certification required by § 80.953 must be entered into the ship's log. The technician conducting the inspection and providing the certification must not be the vessel's owner, operator, master, or an employee of any of them. Additionally, the vessel owner, operator, or ship's master must certify that the inspection was satisfactory. There are no FCC prior notice requirements for any inspection pursuant to § 80.59(b).

(c) *Application for exemption.* FCC Form 820 must be used to apply for exemption from the radio provisions of part II or III of title III of the Communications Act, the Safety Convention, or the Great Lakes Radio Agreement, or for modification or renewal of an exemption previously granted. Applications for exemptions must be submitted to Federal Communications Commission, Waiver Requests, P.O. Box 358300, Pittsburgh, Pennsylvania, 15251–5300. Such applications must be accompanied by the appropriate fee amount, as set forth in § 1.1102 of this chapter. Emergency requests must be filed with the Federal Communications Commission, Office of the Secretary, 1919 M Street, NW., room 222, Washington, DC 20554.

(NOTE: With emergency requests, do not send the fee, you will be billed.)

(d) *Temporary waiver of annual inspection.* The Commission may grant a waiver of the annual inspection for a period not to exceed 30 days from the time of first arrival of a ship at a United States port directly from a foreign port for the sole purpose of enabling the vessel to proceed coastwise to another port in the United States where an inspection can be made.

(1) An informal application (such as a letter or telegram, or telephone call to be confirmed by letter) for waiver of inspection must be submitted by either the vessel owner, the vessel's operating agency, the ship station licensee or the master of the vessel. The application must be submitted not earlier than 3 days in advance of the vessel's arrival at the United States port. The application must be submitted to the Commission's Engineer in Charge of the FCC District Office nearest the port of arrival. The application must include:

(i) The ship's name and radio call sign;

(ii) The name of the first United States port of arrival directly from a foreign port;

(iii) The date of arrival;

(iv) The date and port at which annual inspection will be formally requested to be conducted;

(v) Reason for requesting waiver; and

(vi) A statement that the ship's compulsory radio equipment is operable.

(e) *Compensation for overtime services.* Under section 4(f)(3) of the Communications Act, Engineers in Charge and Radio Engineers of the Compliance and Information Bureau of the Federal Communications Commission who may be required to remain on duty to perform services in connection with the inspection of ship radio equipment and apparatus for the purpose of Part II of Title III of the Communications Act or the Great Lakes Radio Agreement at night or on Sundays and holidays must receive extra compensation to be paid by the master, owner, or agent of the vessel under the following regulations:

(1) The rates of extra compensation are payable in cases where the services of such engineers have been duly requested and they have reported for duty, even though no actual service may be performed.

(2) The extra compensation for overtime services is in addition to the regular compensation paid by the government in the cases of engineers whose compensation is fixed on the ordinary per diem basis and those receiving compensation per month or per annum.

(3) Extra compensation for *waiting time* will not be allowed unless and until the engineer actually reports for duty.

(4) For the purpose of computing extra compensation, the word *night* means the time between the established closing hour of one day at the office involved and the established opening hour of the following business day at such office, but will not include any such time within the 24 hours of a Sunday or holiday. Each Sunday and each holiday will comprise the 24 hours between midnight and midnight. For the

purposes of this section, the time between the established closing hour of an office and midnight of the day immediately preceding a Sunday or holiday and the time from midnight until the established opening hour of the day immediately following the Sunday or holiday will be considered as a single night. The term *holiday* includes only government recognized holidays, and such other days as may be designated national holidays by the President or Congress.

(5) For authorized service in excess of 8 hours on any day excluding Sunday and holidays, extra compensation equivalent to one-half day's pay is payable for each 2 hours or fraction thereof of at least 1 hour that the overtime extends beyond the 8 hours when the overtime is not less than 1 hour. The maximum amount which may be paid for authorized overtime services on any day other than on a Sunday or holiday must not exceed 2½ days' pay.

(6) In computing the amount earned for overtime at the rate of ''one-half day's pay for each 2 hours or fraction thereof of at least 1 hour that the overtime extends beyond the established closing hour'', one-half day's pay must be one-half of the gross daily rate of pay; each 2 hours is the time period for the purpose of computation; at least 1 hour means the minimum service in any 2-hour overtime period for which extra pay may be granted, and each additional period in the amount of 2 hours or fraction thereof of at least 1 hour will entitle the engineer to an additional one-half day's pay. Payment of extra compensation for services consisting of at least 1 hour is authorized from the established closing hour, even though such services may not actually begin until later, *Provided,* That the engineer rendering the service remained on duty after the established closing hour, in which case the time between the established closing hour, and the time of beginning the actual services must be computed as waiting time. Where the performance of actual service is preceded by such a waiting time there should be an affirmative statement that the engineer was required to remain on duty between the established closing hour and the time of beginning the actual services.

(7) In computing extra compensation where the services rendered are in broken periods, the time served should be combined with the waiting time and computed as continuous service.

(8) The same considerations must apply when charging for waiting time as govern the charge for services actually rendered. No charge should be made unless after having reported for duty the waiting time amounts to at least 1 hour.

(9) For any authorized services performed on Sundays and holidays, totalling not more than 8 hours, extra compensation is payable equivalent to two day's pay in addition to any regular compensation for such days. For any authorized service in excess of 8 hours (starting either before or after 5 p.m. local time) extra compensation at the rate of one-half days' pay, based on the normal daily rate of pay, for each two hours of service or fraction thereof of not less than 1 hour, is payable in addition to the extra compensation payable for service up to and including 8 hours of service. The maximum extra compensation payable for work on Sundays and holidays is 4½ days' pay.

(10) When engineers are in travel status overtime will apply the same as if they were at an official station. However, compensation for such overtime must not include travel time.

(11) Assessments and collection of fees against steamship companies for overtime services must be made even though the payment to employees for such services may not be made until funds are appropriated for that purpose.

(12) An application on FCC Form 808 must be filed with the office being requested to furnish overtime services before such assignment can be made.

(13) Overtime services must be billed to the steamship companies as soon as possible after the services have been performed and on a collection voucher (FCC Form 907). Remittance shall be by postal money order or certified check payable to the *Collector of Customs, Treasury Department* and forwarded to that officer at the port indicated on the voucher, who shall in turn deposit such remittance on a properly designated receipt account.

(14) Protests against the extraction of extra compensation must be forwarded to the Commission at Washington, DC, and a copy sent to the office which furnished the overtime services.

[51 FR 31213, Sept. 2, 1986, as amended at 56 FR 64715, Dec. 12, 1991; 60 FR 50122, Sept. 28, 1995; 61 FR 8478, Mar. 5, 1996; 61 FR 25805, May 23, 1996]

## Subpart C—Operating Requirements and Procedures

STATION REQUIREMENTS—GENERAL

### §80.61 Commisson inspection of stations.

All stations and required station records must be made available for inspection by authorized representatives of the Commission.

### §80.63 Maintenance of transmitter power.

(a) The power of each radio transmitter must not be more than that necessary to carry on the service for which the station is licensed.

(b) Except for transmitters using single sideband and independent sideband emissions, each radio transmitter rated by the manufacturer for carrier power in excess of 100 watts must contain the instruments necessary to determine the transmitter power during its operation.

STATION REQUIREMENTS—LAND STATIONS

### §80.67 General facilities requirements for coast stations.

(a) All coast stations licensed to transmit in the band 156–162 MHz must be able to transmit and receive on 156.800 MHz and at least one working frequency in the band.

(b) All coast stations that operate telephony on frequencies in the 1605–3500 kHz band must be able to transmit and receive using J3E emission on the frequency 2182 kHz and at least one working frequency in the band. In addition, each such public coast station must transmit and receive H3E emission on the frequency 2182 kHz.

### §80.68 Facilities requirements for public coast stations using telegraphy.

Public coast station using telegraphy must be provided with the following facilities.

(a) Stations having a frequency assignment below 150 kHz must:

(1) Transmit A1A emission on at least one working frequency within the band 100–150 kHz;

(2) Receive A1A emission on all radio channels authorized for transmission by mobile stations operating in the maritime mobile service for telegraphy within the band 100–150 kHz.

(b) Stations having a frequency assignment within the 405–525 kHz band must transmit and receive on 500 kHz and at least one working frequency in the band.

(c) Stations having frequency assignments above 4000 kHz must be equipped to receive on each of their assigned frequencies and all ship station radiotelegraphy frequencies in the same subband as the assigned frequency of the coast station. See subpart H of this part for the list of frequencies.

### §80.69 Facilities requirement for public coast stations using telephony.

Public coast stations using telephony must be provided with the following facilities.

(a) When the station is authorized to use frequencies in the 1605–3500 kHz band, equipment meeting the requirements of §80.67(b) must be installed at each transmitting location.

(b) The transmitter power on the frequency 2182 kHz must not exceed 50 watts carrier power for normal operation. During distress, urgency and safety traffic, operation at maximum power is permitted.

### §80.70 Special provisions relative to coast station VHF facilities.

(a) Coast stations which transmit on the same radio channel above 150 MHz must minimize interference by reducing radiated power, by decreasing antenna height or by installing directional antennas. Coast stations at locations separated by less than 241 kilometers (150 miles) which transmit on the same radio channel above 150 MHz must also consider a time-sharing arrangement. The Commission may order

station changes if agreement cannot be reached between the involved licensees.

(b) Coast stations which transmit on a radio channel above 150 MHz and are located within interference range of any station within Canada or Mexico must minimize interference to the involved foreign station(s), and must notify the Commission of any station changes.

### § 80.71 Operating controls for stations on land.

Each coast station, Alaska-public fixed station and Alaska-private fixed station must provide operating controls in accordance with the following:

(a) Each station using telegraphy or telephony must be capable of change-over from transmission to reception and vice versa within two seconds excluding a change in operating radio channel.

(b) During it hours of service, each station must be capable of:

(1) Commencing operation within one minute after the need to do so occurs;

(2) Discontinuing all emission within five seconds after emission is no longer desired. The emission of an unattended station in an automated multistation system at which restoration to standby is automatic on conclusion of a call must be discontinued within three seconds of the disconnect signal or, if a disconnect signal is not received, within twenty seconds after reception of the final carrier transmission from a ship station.

(c) Each station using a multichannel installation for telegraphy must be capable of changing from one telegraphy channel to any other telegraphy channel within the same sub-band below 525 kHz within five seconds. This requirement need not be met by equipment intended for use only in emergencies and not used for normal communication.

(d) Every coast station using a multichannel installation for radiotelephony must be capable of changing from one telephony channel to another telephony channel within:

(1) Five seconds within the frequency band 1605–3500 kHz; or

(2) Three seconds within the band 156–162 MHz. This requirement also applies to marine utility stations.

### § 80.72 Antenna requirements for coast stations.

All emissions of a coast station a marine-utility station operated on shore using telephony within the frequency band 30–200 MHz must be vertically polarized.

### § 80.74 Public coast station facilities for a telephony busy signal.

A ''busy'' signal, when used by a public coast station in accordance with the provisions of § 80.111(d), must consist of the transmission of a single audio frequency regularly interrupted, as follows:

(a) *Audio frequency*: Not less than 100 nor more than 1100 Hertz, provided the frequency used for this purpose will not cause auto alarms or selective-ringing devices to be operated.

(b) *Rate of interruption*: 60 times per minute ± 10%.

(c) *Duration of each interruption*: 0.5 second ± 10%.

### § 80.76 Requirements for land station control points.

Each coast or fixed station subject to this part must have the following facilities:

(a) Except for marine utility stations, a visual indication of antenna current; or a pilot lamp, meter or equivalent device which provides continuous visual indication whenever the transmitter control circuits have been actuated.

(b) Capability to aurally monitor all transmissions originating at dispatch points and to disconnect the dispatch points from the transmitter or to terminate the operation of the transmitter.

(c) Facilities which will permit the responsible operator to turn the carrier of the radio transmitter on and off at will.

## STATION REQUIREMENTS—SHIP STATIONS

### § 80.79 Inspection of ship station by a foreign Government.

The Governments or appropriate administrations of countries which a ship visits may require the license of the ship station or ship earth station to be produced for examination. When the license cannot be produced without

delay or when irregularities are observed, Governments or administrations may inspect the radio installations to satisfy themselves that the installation conforms to the conditions imposed by the Radio Regulations.

**§80.80 Operating controls for ship stations.**

(a) Each control point must be capable of:

(1) Starting and discontinuing operation of the station;

(2) Changing frequencies within the same sub-band;

(3) Changing from transmission to reception and vice versa.

(4) In the case of stations operating in the 156–162 MHz bands, reducing power output to one watt or less in accordance with §80.215(e).[1]

(b) Each ship station using telegraphy must be capable of changing from telegraph transmission to telegraph reception and vice versa without manual switching.

(c) Each ship station using telephony must be capable of changing from transmission to reception and vice versa within two seconds excluding a change in operating radio channel.

(d) During its hours of service, each ship station must be capable of:

(1) Commencing operation within one minute;

(2) Discontinuing all emission within five seconds after emission is no longer desired.

(e) Each ship station using a multichannel installation for telegraphy (except equipment intended for use only in emergencies on frequencies below 515 kHz) must be capable of changing from one radio channel to another within:

(1) Five seconds if the channels are within the same sub-band; or

(2) Fifteen seconds if the channels are not within the same sub-band.

(f) Each ship station and marine-utility station using a multi-channel installation for telephony must be capable of changing from one radio channel to another within:

(1) Five seconds within the band 1605–3500 kHz; or

(2) Three seconds within the band 156–162 MHz.

(g)(1) Any telegraphy transmitter constructed since January 1, 1952, that operates in the band 405–525 kHz with an output power in excess of 250 watts must be capable of reducing the output power to 150 watts or less.

(2) The requirement of paragraph (g)(1) of this section does not apply when there is available in the same station a transmitter capable of operation on the international calling frequency 500 kHz and at least one working frequency within the band 405–525 kHz, capable of being energized by a source of power other than an emergency power source and not capable of an output in excess of 100 watts when operated on such frequencies.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35244, Sept. 18, 1987]

**§80.81 Antenna requirements for ship stations.**

All telephony emissions of a ship station or a marine utility station on board ship within the frequency band 30–200 MHz must be vertically polarized.

**§80.83 Protection from potentially hazardous RF radiation.**

Any license or renewal application for a ship earth station that will cause exposure to radiofrequency (RF) radiation in excess of the RF exposure guidelines specified in §1.1307(b) of the Commission's Rules must comply with the environmental processing rules set forth in §§1.1301–1.1319 of this chapter.

[53 FR 28225, July 27, 1988]

[1] Ship station transmitters, except hand-held portable transmitters, manufactured after January 21, 1987 must automatically reduce the carrier power to one watt or less when turned to the frequency 156.375 MHz or 156.650 MHz. All ship station tramsmitters, except hand-held portable transmitters, used after January 21, 1997, must automatically reduce power as described above. A manual override device must be provided which when held by the operator will permit full carrier power operation on channels 13 and 67. Hand-held portable transmitters must be capable of reducing power to one watt, but need not do so automatically.

OPERATING PROCEDURES—GENERAL

### § 80.86 International regulations applicable.

In addition to being regulated by these rules, the use and operation of stations subject to this part are governed by the Radio Regulations and the radio provisions of all other international agreements in force to which the United States is a party.

### § 80.87 Cooperative use of frequency assignments.

Each radio channel is available for use on a shared basis only and is not available for the exclusive use of any one station or station licensee. Station licensees must cooperate in the use of their respective frequency assignments in order to minimize interference and obtain the most effective use of the authorized radio channels.

### § 80.88 Secrecy of communication.

The station licensee, the master of the ship, the responsible radio operators and any person who may have knowledge of the radio communications transmitted or received by a fixed, land, or mobile station subject to this part, or of any radiocommunication service of such station, must observe the secrecy requirements of the Communications Act and the Radio Regulations. See sections 501, 502, and 705 of the Communications Act and Article 23 of the Radio Regulations.

### § 80.89 Unauthorized transmissions.

Stations must not:

(a) Engage in superfluous radiocommunication.

(b) Use telephony on 243 MHz.

(c) Use selective calling on 2182 kHz or 156.800 MHz.

(d) When using telephony, transmit signals or communications not addressed to a particular station or stations. This provision does not apply to the transmission of distress, alarm, urgency, or safety signals or messages, or to test transmissions.

(e) When using telegraphy, transmit signals or communications not addressed to a particular station or stations, unless the transmission is preceded by CQ or CP or by distress, alarm, urgency, safety signals, or test transmissions.

(f) Transmit while on board vessels located on land. Vessels in the following situations are not considered to be on land for the purposes of this paragraph:

(1) Vessels which are aground due to a distress situation;

(2) Vessels in drydock undergoing repairs; and

(3) State or local government vessels which are involved in search and rescue operations including related training exercises.

(g) Transmit on frequencies or frequency bands not authorized on the current station license.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35244, Sept. 18, 1987]

### § 80.90 Suspension of transmission.

Transmission must be suspended immediately upon detection of a transmitter malfunction and must remain suspended until the malfunction is corrected, except for transmission concerning the immediate safety of life or property, in which case transmission must be suspended as soon as the emergency is terminated.

### § 80.91 Order of priority of communications.

(a) The order of priority of radiotelegraph communications is as follows:

(1) Distress calls including the international distress signal for radiotelegraphy, the international radiotelegraph alarm signal, the international radiotelephone alarm signal, distress messages and distress traffic.

(2) Communications preceded by the international radiotelegraph urgency signal.

(3) Communications preceded by the international radiotelegraphy safety signal.

(4) Communications relative to radio direction-finding bearings.

(5) Communications relative to the navigation and safe movement of aircraft.

(6) Communications relative to the navigation, movements, and needs of ships, including weather observation messages destined for an official meteorological service.

(7) Government communications for which priority right has been claimed.

(8) Service communications relating to the working of the radiocommunication service or to communications previously transmitted.

(9) All other communications.

(b) The order of priority of radiotelephone communications is as follows:

(1) Distress calls including the international distress signal for radiotelephony, the international radiotelephone alarm signal, distress messages and distress traffic.

(2) Communications preceded by the international radiotelephone urgency signal, or known to the station operator to consist of one or more urgent messages concerning the safety of a person, aircraft or other mobile unit.

(3) Communications preceded by the international radiotelephone safety signal, or known to the station operator to consist of one or more messages concerning the safety of navigation or important meteorological warnings.

(4) Communications known by the station operator to consist of one or more messages relative to the navigation, movements and needs of ships, including weather observation messages destined for an official meteorological service.

(5) Government communications for which priority right has been claimed.

(6) All other communications.

### §80.92 Prevention of interference.

(a) The station operator must determine that the frequency is not in use by monitoring the frequency before transmitting, except for transmission of signals of distress.

(b) When a radiocommunication causes interference to a communication which is already in progress, the interfering station must cease transmitting at the request of either party to the existing communication. As between nondistress traffic seeking to commence use of a frequency, the priority is established under §80.91.

(c) Except in cases of distress, communications between ship stations or between ship and aircraft stations must not interfere with public coast stations. The ship or aircraft stations which cause interference must stop transmitting or change frequency upon the first request of the affected coast station.

### §80.93 Hours of service.

(a) *All stations.* All stations whose hours of service are not continuous must not suspend operation before having concluded all communication required in connection with a distress call or distress traffic.

(b) *Public coast stations.* (1) Each public coast station whose hours of service are not continuous must not suspend operation before having concluded all communication involving messages or calls originating in or destined to mobile stations within range and mobile stations which have indicated their presence.

(2) Unless otherwise authorized by the Commission upon adequate showing of need, each public coast station authorized to operate on frequencies in the 3000–23,000 kHz band must maintain continuous hours of service.

(c) *Compulsory ship stations.* Compulsory ship stations whose service is not continous may not suspend operation before concluding all traffic originating in or destined for public coast stations situated within their range and mobile stations which have indicated their presence.

(d) *Other than public coast or compulsory ship stations.* The hours of service of stations other than public coast or compulsory ship stations are determined by the station licensee.

### §80.94 Control by coast or Government station.

When communicating with a coast station or any Government station in the maritime mobile service, ship stations must comply with the instruction given by the coast station or Government station relative to the order and time of transmission, the choice of frequency, the suspension of communication and the permissible type of message traffic that may be transmitted. This provision does not apply in the event of distress.

### §80.95 Message charges.

(a) Charges must not be made for service of:

(1) Any public coast station unless tariffs for the service are on file with the Commission;

(2) Any station other than a public coast station or an Alaska—public fixed station, except cooperatively shared stations covered by § 80.503;

(3) Distress calls and related traffic; and

(4) Navigation hazard warnings preceded by the SAFETY signal.

(b) The licensee of each ship station is responsible for the payment of all charges accruing to any other station(s) or facilities for the handling or forwarding of messages or communications transmitted by that station.

(c) In order to be included in the ITU List of Coast Stations public coast stations must recognize international Accounting Authority Identification Codes (AAIC) for purposes of billing and accounts settlement in accordance with Article 66 of the Radio Regulations. Stations which elect not to recognize international AAIC's will be removed from the ITU List of Coast Stations.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35244, Sept. 18, 1987]

### § 80.96 Maintenance tests.

Stations are authorized to engage in test transmissions necessary for maintenance of the station. Test transmissions must conform to appropriate test operating procedures.

### § 80.97 Radiotelegraph operating procedures.

This section applies to ships and coast stations authorized to transmit in the band 405–525 kHz.

(a) Except for the transmission of distress or urgency signals, all transmissions must cease within the band 485–515 kHz during each 500 kHz silence period.

(b) Stations transmitting telegraphy must use the service abbreviations (''Q'' code) listed in Appendix 14 to the Radio Regulations.

(c) The call consists of:

(1) The call sign of the station called, not more than twice; the word ''DE'' and the call sign of the calling station, not more than twice; if useful, the frequency on which the called station should reply; and the letter ''K''.

(2) If the call is transmitted twice at an interval of not less than one minute, it must not be repeated until after an interval of three minutes.

(d) The reply to calls consists of: The call sign of the calling station, not more than twice; the word ''DE''; and the call sign of the station called, once only.

### § 80.98 Radiotelegraph testing procedures.

(a) Stations authorized to use telegraphy may conduct tests on any assigned frequency. Emissions must not cause harmful interference. When radiation is necessary the radiotelegraph testing procedure described in this paragraph must be followed:

(1) The operator must not interfere with transmissions in progress.

(2) The operator must transmit ''IE'' (two dots, space, one dot) on the test frequency as a warning that test emissions are about to be made. When the frequency of the test emission is within the frequency band 405–525 kHz, a watch must be maintained on 500 kHz throughout the test period.

(3) If any station transmits ''AS'' (wait), testing must be suspended. When transmission of ''IE'' is resumed and no response is heard, the test may proceed.

(4) Test signals composed of a series of ''VVV'' having a duration of not more than ten seconds, followed by the call sign of the testing station will be transmitted. The call sign must be sent clearly at a speed of approximately 10 words per minute. This test transmission must not be repeated until a period of at least one minute has elapsed. On 500 kHz in a region of heavy traffic, at least five minutes must elapse before the test transmission is repeated.

(b) When testing is conducted on 500 kHz, no tests will be conducted during the 500 kHz silence periods. Care must be exercised not to so prolong and space the dash portion of the ''VVV'' series as to form the alarm signal.

(c) When testing is conducted on any frequency in the band 8362–8366 kHz, tests must not actuate any automatic alarm receiver.

**§80.99 Radiotelegraph station identification.**

This section applies to coast, ship and survival craft stations authorized to transmit in the band 405–525 kHz.

(a) The station transmitting radiotelegraph emissions must be identified by its call sign. The call sign must be transmitted with the telegraphy emission normally used by the station. The call sign must be transmitted at 20 minute intervals when transmission is sustained for more than 20 minutes. When a ship station is exchanging public correspondence communications, the identification may be deferred until completion of each communication with any other station.

(b) The requirements of this section do not apply to survival craft stations when transmitting distress signals automatically or when operating on 121.500 MHz for radiobeacon purposes.

(c) Emergency position indicating radiobeacon stations do not require identification.

**§80.100 Morse code requirement.**

The code employed for telegraphy must be the Morse code specified in the Telegraph Regulations annexed to the International Telecommunication Convention. Pertinent extracts from the Telegraph Regulations are contained in the ''Manual for Use by the Maritime Mobile and Maritime Mobile-Satellite Services'' published by the International Telecommunication Union.

**§80.101 Radiotelephone testing procedures.**

This section is applicable to all stations using telephony except where otherwise specified.

(a) Station licensees must not cause harmful interference. When radiation is necessary or unavoidable, the testing procedure described below must be followed:

(1) The operator must not interfere with transmissions in progress.

(2) The testing station's call sign, followed by the word ''test'', must be announced on the radio-channel being used for the test.

(3) If any station responds ''wait'', the test must be suspended for a minimum of 30 seconds, then repeat the call sign followed by the word ''test'' and listen again for a response. To continue the test, the operator must use counts or phrases which do not conflict with normal operating signals, and must end with the station's call sign. Test signals must not exceed ten seconds, and must not be repeated until at least one minute has elapsed. On the frequency 2182 kHz or 156.800 MHz, the time between tests must be a minimum of five minutes.

(b) Testing of transmitters must be confined to single frequency channels on working frequencies. However, 2182 kHz and 156.800 MHz may be used to contact ship or coast stations as appropriate when signal reports are necessary. Short tests on 2182 kHz by vessels with DSB (A3) equipment for distress and safety purposes are permitted to evaluate the compatibility of that equipment with an A3J emission system. U.S. Coast Guard stations may be contacted on 2182 kHz or 156.800 MHz for test purposes only when tests are being conducted during inspections by Commission representatives, when qualified radio technicians are installing or repairing the station radiotelephone equipment, or when qualified ship's personnel conduct an operational check requested by the U.S. Coast Guard. In these cases the test must be identified as ''FCC'' or ''technical''.

(c) Survival craft transmitter tests must not be made within actuating range of automatic alarm receivers. Survival craft transmitters must not be tested on the frequency 500 kHz during the silence periods.

**§80.102 Radiotelephone station identification.**

This section applies to all stations using telephony which are subject to this part.

(a) Except as provided in paragraphs (d) and (e) of this section, stations must give the call sign in English. Identification must be made:

(1) At the beginning and end of each communication with any other station.

(2) At 15 minute intervals when transmission is sustained for more than 15 minutes. When public correspondence is being exchanged with a ship or aircraft station, the identification may be deferred until the completion of the communications.

(b) Private coast stations located at drawbridges and transmitting on the navigation frequency 156.650 MHz may identify by use of the name of the bridge in lieu of the call sign.

(c) Ship stations transmitting on any authorized VHF bridge-to-bridge channel may be identified by the name of the ship in lieu of the call sign.

(d) Ship stations operating in a vessel traffic service system or on a waterway under the control of a U.S. Government agency or a foreign authoriy, when communicating with such an agency or authority may be identified by the name of the ship in lieu of the call sign, or as directed by the agency or foreign authority.

(e) VHF public coast station may identify by means of the approximate geographic location of the station or the area it serves when it is the only VHF public coast station serving the location or there will be no conflict with the identification of any other station.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35244, Sept. 18, 1987]

### § 80.103 Digital selective calling (DSC) operating procedures.

(a) Operating procedures for the use of DSC equipment in the maritime mobile service are as contained in CCIR Recommendation 541 as modified by paragraph (c) of this section.

(b) When using DSC techniques, coast and ship stations must use nine digit maritime mobile service identities.

(c) DSC acknowledgement of DSC distress and safety calls must be made by designated coast stations and such acknowledgement must be in accordance with procedures contained in CCIR Recommendation 541. Nondesignated public and private coast stations must follow the guidance provided for ship stations in CCIR Recommendation 541 with respect to DSC ''Acknowledgement of distress calls'' and ''Distress relays''.

### § 80.104 Identification of radar transmissions not authorized.

This section applies to all maritime radar transmitters except radar beacon stations.

(a) Radar transmitters must not transmit station identification.

(b) [Reserved]

## OPERATING PROCEDURES—LAND STATIONS

### § 80.105 General obligations of coast stations.

Each coast station or marine-utility station must acknowledge and receive all calls directed to it by ship or aircraft stations. Such stations are permitted to transmit safety communication to any ship or aircraft station.

### § 80.106 Intercommunication in the mobile service.

(a) Each public coast station must exchange radio communications with any ship or aircraft station at sea; and each station on shipboard or aircraft at sea must exchange radio communications with any other station on shipboard or aircraft at sea or with any public coast station.

(b) Each public coast station must acknowledge and receive all communications from mobile stations directed to it, transmit all communications delivered to it which are directed to mobile stations within range in accordance with their tariffs. Discrimination in service is prohibited.

### § 80.107 Service of private coast stations and marine-utility stations.

A private coast station or a marine-utility station is authorized to transmit messages necessary for the private business and operational needs of ships and the safety of aircraft.

### § 80.108 Transmission of traffic lists by coast stations.

(a) Each coast station is authorized to transmit lists of call signs in alphabetical order of all mobile stations for which they have traffic on hand. These traffic lists will be transmitted on the station's normal working frequencies at intervals of:

(1) In the case of telegraphy, at least two hours and not more than four hours during the working hours of the coast station.

(2) In the case of radiotelephony, at least one hour and not more than four hours during the working hours of the coast station.

(b) The announcement must be as brief as possible and must not be repeated more than twice. Coast stations may announce on a calling frequency that they are about to transmit call lists on a specific working frequency.

### §80.109 Transmission to a plurality of mobile stations by a public coast station.

Group calls to vessels under the common control of a single entity and information for the general benefit of mariners including storm warnings, ordinary weather, hydrographic information and press materials may be transmitted by a public coast station simultaneously to a plurality of mobile stations.

### §80.110 Inspection and maintenance of antenna structure markings and associated control equipment.

The owner of each antenna structure required to be painted and/or illuminated under the provisions of Section 303(q) of the Communications Act of 1934, as amended, shall operate and maintain the antenna structure painting and lighting in accordance with part 17 of this chapter. In the event of default by the owner, each licensee or permittee shall be individually responsible for conforming to the requirements pertaining to antenna structure painting and lighting.

[61 FR 4368, Feb. 6, 1996]

### §80.111 Radiotelephone operating procedures for coast stations.

This section applies to all coast stations using telephony which are subject to this part.

(a) *Limitations on calling.* (1) Except when transmitting a general call to all stations for announcing or preceding the transmission of distress, urgency, or safety messages, a coast station must call the particular station(s) with which it intends to communicate.

(2) Coast stations must call ship stations by voice unless it is known that the particular ship station may be contacted by other means such as automatic actuation of a selective ringing or calling device.

(3) Coast stations may be authorized emission for selective calling on each working frequency.

(4) Calling a particular station must not continue for more than one minute in each instance. If the called station does not reply, that station must not again be called for two minutes. When a called station does not reply to a call sent three times at intervals of two minutes, the calling must cease for fifteen minutes. However, if harmful interference will not be caused to other communications in progress, the call may be repeated after three minutes.

(5) A coast station must not attempt to communicate with a ship station that has specifically called another coast station until it becomes evident that the called station does not answer, or that communication between the ship station and the called station cannot be carried on because of unsatisfactory operating conditions.

(6) Calls to establish communication must be initiated on an available common working frequency when such a frequency exists and it is known that the called ship maintains a simultaneous watch on the common working frequency and the appropriate calling frequency(ies).

(b) *Time limitation on calling frequency.* Transmissions by coast stations on 2182 kHz or 156.800 MHz must be minimized and any one exchange of communications must not exceed one minute in duration.

(c) *Change to working frequency.* After establishing communications with another station by call and reply on 2182 kHz or 156.800 MHz coast stations must change to an authorized working channel for the transmission of messages.

(d) *Use of busy signal.* A coast station, when communicating with a ship station which transmits to the coast station on a radio channel which is a different channel from that used by the coast station for transmission, may transmit a ''busy'' signal whenever transmission from the ship station is being received. The characteristics of the ''busy'' signal are contained in §80.74.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35244, Sept. 18, 1987]

OPERATING PROCEDURES—SHIP STATIONS

### § 80.114 Authority of the master.

(a) The service of each ship station must at all times be under the ultimate control of the master, who must require that each operator or such station comply with the Radio Regulations in force and that the ship station is used in accordance with those regulations.

(b) These rules are waived when the vessel is under the control of the U.S. Government.

### § 80.115 Operational conditions for use of associated ship units.

(a) Associated ship units may be operated under a ship station authorization. Use of an associated ship unit is restricted as follows;

(1) It must only be operated on the safety and calling frequency 156.800 MHz or on commercial or noncommercial VHF intership frequencies appropriate to the class of ship station with which it is associated.

(2) Except for safety purposes, it must only be used to communicate with the ship station with which it is associated or with associated ship units of the same ship station. Such associated ship units may not be used from shore.

(3) It must be equipped to transmit on the frequency 156.800 MHz and at least one appropriate intership frequency.

(4) Calling must occur on the frequency 156.800 MHz unless calling and working on an intership frequency has been prearranged.

(5) Power is limited to one watt.

(6) The station must be identified by the call sign of the ship station with which it is associated and an appropriate unit designator.

(b) State or local government vehicles used to tow vessels involved in search and rescue operations are authorized to operate on maritime mobile frequencies as associated ship units. Such operations must be in accordance with paragraph (a) of this section, except that the associated ship unit: May be operated from shore; may use Distress, Safety and Calling, Intership Safety, Liaison, U.S. Coast Guard, or Maritime Control VHF intership frequencies; and may have a transmitter power of 25 watts.

### § 80.116 Radiotelephone operating procedures for ship stations.

(a) *Calling coast stations.* (1) Use by ship stations of the freqency 2182 kHz for calling coast stations and for replying to calls from coast stations is authorized. However, such calls and replies should be on the appropriate ship-shore working frequency.

(2) Use by ship stations and marine utility stations of the frequency 156.800 MHz for calling coast stations and marine utility stations on shore, and for replying to calls from such stations, is authorized. However, such calls and replies should be made on the appropriate ship-shore working frequency.

(b) *Calling ship stations.* (1) Except when other operating procedure is used to expedite safety communication, ship stations, before transmitting on the intership working frequencies 2003, 2142, 2638, 2738, or 2830 kHz, must first establish communications with other ship stations by call and reply on 2182 kHz. Calls may be initiated on an intership working frequency when it is known that the called vessel maintains a simultaneous watch on the working frequency and on 2182 kHz.

(2) Except when other operating procedures are used to expedite safety communications, the frequency 156.800 MHz must be used for call and reply by ship stations and marine utility stations before establishing communication on one of the intership working frequencies. Calls may be initiated on an intership working frequency when it is known that the called vessel maintains a simultaneous watch on the working frequency and on 156.800 MHz.

(c) *Change to working frequency.* After establishing communication with another station by call and reply on 2182 kHz or 156.800 MHz stations on board ship must change to an authorized working frequency for the transmission of messages.

(d) *Limitations on calling.* Calling a particular station must not continue for more than 30 seconds in each instance. If the called station does not reply, the station must not again be

called until after an interval of 2 minutes. When a called station called does not reply to a call sent three times at intervals of 2 minutes, the calling must cease and must not be renewed until after an interval of 15 minutes; however, if there is no reason to believe that harmful interference will be caused to other communications in progress, the call sent three times at intervals of 2 minutes may be repeated after a pause of not less than 3 minutes. In event of an emergency involving safety, the provisions of this paragraph do not apply.

(e) *Limitations on working.* Any one exchange of communications between any two ship stations on 2003, 2142, 2638, 2738, or 2830 kHz or between a ship station and a private coast station on 2738 or 2830 kHz must not exceed 3 minutes after the stations have established contact. Subsequent to such exchange of communications, the same two stations must not again use 2003, 2142, 2638, 2738, or 2830 kHz for communication with each other until 10 minutes have elapsed.

(f) *Transmission limitation on 2182 kHz and 156.800 MHz.* To facilitate the reception of distress calls, all transmissions on 2182 kHz and 156.800 MHz (channel 16) must be minimized and transmissions on 156.800 MHz must not exceed 1 minute.

(g) *Limitations on commercial communication.* On frequencies in the band 156–162 MHz, the exchange of commercial communication must be limited to the minimum practicable transmission time. In the conduct of ship-shore communication other than distress, stations on board ship must comply with instructions given by the private coast station or marine utility station on shore with which they are communicating.

(h) *2182 kHz silence periods.* To facilitate the reception of distress calls, transmission by ship or survival craft stations is prohibited on any frequency (including 2182 kHz) within the band 2173.5–2190.5 kHz during each 2182 kHz silence period.

SPECIAL PROCEDURES—PUBLIC COAST STATIONS

**§80.121 Public coast stations using telegraphy.**

(a) *Narrow-band direct-printing (NB–DP) operating procedures.* (1) When both terminals of the NB–DP circuit are satisfied that the circuit is in operable condition, the message preamble must be transmitted in the following format:

(i) One carriage return and one line feed,

(ii) Serial number or number of the message,

(iii) The name of the office of origin,

(iv) The number of words,

(v) The date of handing in of the message,

(vi) The time of handing in of the message, and

(vii) Any service instructions. (See The ITU ''Manual for Use by the Maritime Mobile and Maritime Mobile-Satellite Services''.)

(2) Upon completion of transmission of the preamble, the address, text and signature must be transmitted as received from the sender.

(3) Upon completion of transmission of the signature the coast station must, following the signal ''COL'', routinely repeat all service indications in the address and for figures or mixed groups of letters, figures or signs in the address, text or signature.

(4) In telegrams of more than 50 words, routine repetition must be given at the end of each page.

(5) Paragraphs (a) (1) through (4) of this section need not be followed when a direct connection is employed.

(6) In calling ship stations by narrow-band direct-printing, the coast station must use the ship station selective calling number (5 digits) and its assigned coast station identification number (4 digits). Calls to ship stations must employ the following format: Ship station selective call number, repeated twice; ''DE'', sent once; and coast station identification number, repeated twice. When the ship station does not reply to a call sent three times at intervals of two minutes, the

calling must cease and must not be renewed until after an interval of fifteen minutes.

(7) A public coast station authorized to use NB–DP frequencies between 4000 kHz and 27500 kHz may use class A1A emission on the ''mark'' frequency for station identification and for establishing communications with ship stations. The radio station license must reflect authority for this type of operation, and harmful interference must not be caused.

(b) *Watch on ship calling frequencies.* (1) Public coast stations using telegraphy must maintain a continuous watch during their working hours for calls from ship stations on frequencies in the same band(s) in which the coast station is licensed to operate. See subpart H of this part.

(2) Such station must employ receivers which are capable of being accurately set to any designated calling frequency in each band for which the receiver is intended to operate. The time required to set the receiver to a frequency must not exceed five seconds. The receiver must have a long term frequency stability of not more than 50 Hz and a minimum sensitivity of two microvolts across receiver input terminals of 50 ohms, or equivalent. The audio harmonic distortion must not exceed five percent at any rated output power.

(c) *Radiotelegraph frequencies.* Radiotelegraph frequencies available for assignment to public coast stations are contained in subpart H of this part.

### § 80.122 Public coast stations using facsimile and data.

Facsimile operations are a form of telegraphy for the transmission and receipt of fixed images between authorized coast and ship stations. Facsimile and data techniques may be implemented in accordance with the following paragraphs.

(a) *Supplemental Eligibility Requirements.* Public coast stations are eligible to use facsimile and data techniques with ship stations.

(b) *Assignment and use of frequencies.* (1) Frequencies in the 2000–27500 kHz bands in part 2 of the Commission's rules as available for shared use by the maritime mobile service and other radio services are assignable to public coast stations for providing facsimile communications with ship stations. Additionally, frequencies in the 156–162 MHz band available for assignment to public coast stations for radiotelephone communications that are contained in subpart H of this part are also available for facsimile and data communications.

(2) Equipment used for facsimile and data operations is subject to the applicable provisions of subpart E of this part.

(3) The use of voice on frequencies authorized for facsimile operations in the bands 2000–27500 kHz listed in subpart H of this part is limited to setup and confirmation of receipt of facsimile transmissions.

[57 FR 43407, Sept. 21, 1992]

## SPECIAL PROCEDURES—PRIVATE COAST STATIONS

### § 80.131 Radioprinter operations.

Radioprinter operations provide a relatively low cost system of record communications between authorized coast and ship stations in accordance with the following paragraphs.

(a) *Supplementary eligibility requirement.* A radioprinter authorization for a private coast station may be issued to the owner or operator of a ship of less than 1600 gross tons, a community of ships all of which are less than 1600 gross tons, or an association whose members operate ships of less than 1600 gross tons.

(b) *Scope of communications.* Only those communications which concern the business and operational needs of vessels are authorized.

(c) *Assignment and use of frequencies.* (1) Frequencies may be assigned to private coast stations for radioprinter use from the appropriate bands listed in subpart H of this part.

(2) Frequencies in the listed bands are shared with other radio services including the maritime mobile service. Each assigned frequency is available on a shared use basis only, not for the exclusive use of any one station or licensee.

(d) *Coast station responsibilities.* (1) Private coast stations must propose

frequencies and provide the names of ships to be served with the application.

(2) Private coast station licensees must provide copies of their license to all ships with which they are authorized to conduct radioprinter operations.

SPECIAL PROCEDURES—SHIP STATIONS

### §80.141 General provisions for ship stations.

(a) *Points of communication.* Ship stations and marine utility stations on board ships are authorized to communicate with any station in the maritime mobile service.

(b) *Service requirements for all ship stations.* (1) Each ship station must receive and acknowledge all communications which are addressed to the ship or to any person on board.

(2) Every ship, on meeting with any direct danger to the navigation of other ships such as ice, a derelict vessel, a tropical storm, subfreezing air temperatures associated with gale force winds causing severe icing on superstructures, or winds of force 10 or above on the Beaufort scale for which no storm warning has been received, must transmit related information to ships in the vicinity and to the authorities on land unless such action has already been taken by another station. All such radio messages must be preceded by the safety signal.

(3) A ship station may accept communications for retransmission to any other station in the maritime mobile service. Whenever such messages or communications have been received and acknowledged by a ship station for this purpose, that station must retransmit the message as soon as possible.

(c) *Service requirements for vessels.* Each ship station provided for compliance with Part II of Title III of the Communications Act must provide a public correspondence service on voyages of more than 24 hours for any person who requests the service.

(1) Compulsory radiotelegraph ships must provide this service during the hours the radio operator is normally on duty.

(2) Compulsory radiotelephone ships must provide this service for at least four hours daily. The hours must be prominently posted at the principal operating location of the station.

(d) Operating conditions. Effective August 1, 1994, VHF hand-held, portable transmitters used while connected to an external power source or a ship antenna must be equipped with an automatic timing device that deactivates the transmitter and reverts the transmitter to the receive mode after an uninterrupted transmission period of five minutes, plus or minus 10 percent. Additionally, such transmitters must have a device that indicates when the automatic timer has deactivated the transmitter. See also §80.203(c).

[51 FR 31213, Sept. 2, 1986, as amended at 56 FR 57988, Nov. 15, 1991]

### §80.142 Ships using radiotelegraphy.

(a) *Calling by narrow-band direct-printing.* (1) NB–DP ship stations must call United States public coast stations on frequencies designated for NB–DP operation.

(2) Where it is known that the coast station maintains a watch on working frequencies for ship station NB–DP calls the ship station must make its initial NB–DP call on those frequencies.

(3) Calls to a coast station or other ship station must employ the following format: Coast station identification number, repeated twice; ''DE'', sent once; and ship station selective call number, repeated twice. When the coast station does not reply to a call sent three times at intervals of two minutes, the calling must cease for fifteen minutes.

(b) *NB-DP operating procedure.* The operation of NB-DP equipment in the maritime mobile service must be in accordance with the operating procedures contained in the latest version of CCIR Recommendation 492 that does not prevent the use of existing equipment.

(c) *Required channels for radiotelegraphy.* (1) Each ship station using telegraphy on frequencies within the band 405–525 kHz must be capable of:

(i) Transmit and receive on 500 kHz using the authorized emissions, and

(ii) Transmit on at least two working frequencies and receive on all other frequencies necessary for their service using authorized emissions, and

(iii) When a radiotelegraph installation is compulsory, a fourth frequency within this band which is authorized specifically for direction finding must also be provided.

(2) Each ship station using telegraphy on frequencies within the band 90–160 kHz must be capable of transmitting and receiving Class A1A emission on the frequency 143 kHz, and on at least two additional working frequencies within this band except that portion between 140 kHz and 146 kHz.

(3) Each ship station using telegraphy and operating in the bands between 4000–27500 kHz must be capable of transmitting and receiving Class A1A or J2A emission on at least one frequency authorized for calling and at least two frequencies authorized for working in each of the bands for which facilities are provided to carry on its service.

(4) Each ship station using telegraphy in Region 2 on frequencies within the band 2065–2107 kHz must be capable of transmitting and receiving Class A1A or J2A emission on at least one frequency in this band authorized for working in addition to a frequency in this hand authorized for calling.

[51 FR 31213, Sept. 2, 1986, as amended at 54 FR 49993, Dec. 4, 1989]

### § 80.143 Required frequencies for radiotelephony.

(a) Except for compulsory vessels, each ship radiotelephone station licensed to operate in the band 1605–3500 kHz must be able to receive and transmit J3E emission on the frequency 2182 kHz. Ship stations are additionally authorized to receive and transmit H3E emission for communications with foreign coast stations and with vessels of foreign registry. If the station is used for other than safety communications, it must be capable also of receiving and transmitting the J3E emission on at least two other frequencies in that band. However, ship stations which operate exclusively on the Mississippi River and its connecting waterways, and on high frequency bands above 3500 kHz, need be equipped with 2182 kHz and one other frequency within the band 1605–3500 kHz. Additionally, use of A3E emission is permitted for distress and safety purposes on 2182 kHz for portable survival craft equipment also having the capability to operate on 500 kHz and for transmitters authorized for use prior to January 1, 1972.

(b) Except as provided in paragraph (c) of this section, at least one VHF radiotelephone transmitter/receiver must be able to transmit and receive on the following frequencies:

(1) The distress, safety and calling frequency 156.800 MHz;

(2) The primary intership safety frequency 156.300 MHz;

(3) One or more working frequencies; and

(4) All other frequencies necessary for its service.

(c) Where a ship ordinarily has no requirement for VHF communications, handheld VHF equipment may be used solely to comply with the bridge-to-bridge navigational communication requirements contained in subpart U of this part.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35244, Sept. 18, 1987]

### § 80.145 Class C EPIRB operational procedures.

Class C EPIRBs must be used for distress purposes only after use of the VHF/FM radiotelephone installation, in accordance with § 80.320, has proved unsuccessful or when a VHF/FM radiotelephone installation is not fitted, or when specifically requested to do so by a station engaged in search and rescue operations.

## SHIPBOARD GENERAL PURPOSE WATCHES

### § 80.146 Watch on 500 kHz.

During their hours of service, ship stations using frequencies in the authorized bands between 405–525 kHz must, remain on watch on 500 kHz except when the operator is transmitting on 500 kHz or operating on another frequency. The provisions of this section do not relieve the ship from complying with the requirements for a safety watch as prescribed in §§ 80.304 and 80.305.

### § 80.147 Watch on 2182 kHz.

Ship stations must maintain a watch on 2182 kHz as prescribed by § 80.304(b).

### §80.148 Watch on 156.8 MHz (Channel 16).

At least one VHF ship station per compulsory vessel while underway must maintain a watch on 156.800 MHz whenever such station is not being used for exchanging communications. The watch is not required:

(a) Where a ship station is operating only with handheld bridge-to-bridge VHF radio equipment under §80.143(c) of this part;

(b) For vessels subject to the Bridge-to-Bridge Act and participating in a Vessel Traffic Service (VTS) system when the watch is maintained on both the bridge-to-bridge frequency and a separately assigned VTS frequency; or

(c) For a station on board a voluntary vessel equipped with digital selective calling (DSC) equipment, maintaining a continuous DSC watch on 156.525 MHz whenever such station is not being used for exchanging communications, and while such station is within the VHF service area of a U.S. Coast Guard radio facility which is DSC equipped.

[51 FR 31213, Sept. 2, 1986, as amended at 58 FR 16504, Mar. 29, 1993]

VIOLATIONS

### §80.149 Answer to notice of violation.

(a) Any person receiving official notice of violation of the terms of the Communications Act, any legislative act, executive order, treaty to which the United States is a party, terms of a station or operator license, or the rules and regulations of the Federal Communications Commission must within 10 days from such receipt, send a written answer, in duplicate, to the office of the Commission originating the official notice. If an answer cannot be sent or an acknowledgment made within such 10-day period by reason of illness or other unavoidable circumstances, acknowledgment and answer must be made at the earliest practicable date with a satisfactory explanation of the delay. The answer to each notice must be complete in itself and must not be abbreviated by references to other communications or answers to other notices. The answer must contain a full explanation of the incident involved and must set forth the action taken to prevent a continuation or recurrence. If the notice relates to lack of attention to or improper operation of the station or to log or watch discrepancies, the answer must give the name and license number of the licensed operator on duty.

(b) When an official notice of violation, impending violation, or discrepancy, pertaining to any provision of Part II of Title III of the Communications Act or the radio provisions of the Safety Convention, is served upon the master or person responsible for a vessel and any instructions appearing on such document issued by a representative of the Commission are at variance with the content of paragraph (a) of this section, the instructions issued by the Commission's representative supersede those set forth in paragraph (a) of this section.

## Subpart D—Operator Requirements

### §80.151 Classification of operator licenses and endorsements.

(a) Commercial radio operator licenses issued by the Commission are classified in accordance with the Radio Regulations of the International Telecommunication Union.

(b) The following licenses are issued by the Commission. International classification, if different from the license name, is given in parentheses. The licenses and their alphanumeric designator are listed in descending order.

(1) T–1. First Class Radiotelegraph Operator's Certificate.

(2) T–2. Second Class Radiotelegraph Operator's Certificate.

(3) G. General Radiotelephone Operator License (radiotelephone operator's general certificate).

(4) T–3. Third Class Radiotelegraph Operator's Certificate (radiotelegraph operator's special certificate).

(5) MP. Marine Radio Operator Permit (radiotelephone operator's restricted certificate).

(6) RP. Restricted Radiotelephone Operator Permit (radiotelephone operator's restricted certificate).

(c) The following license endorsements are affixed by the Commission

to provide special authorizations or restrictions. Applicable licenses are given in parentheses.

(1) Ship Radar endorsement (First and Second Class Radiotelegraph Operator's Certificate, General Radiotelephone Operator License).

(2) Six Months Service endorsement (First and Second Class Radiotelegraph Operator's Certificate).

(3) Restrictive endorsements; relating to physical handicaps, English language or literacy waivers, or other matters (all licenses).

COAST STATION OPERATOR REQUIREMENTS

### § 80.153 Coast station operator requirements.

(a) Except as provided in § 80.179, operation of a coast station transmitter must be performed by a person holding a commercial radio operator license of the required class, who is on duty at the control point of the station. The operator is responsible for the proper operation of the station.

(b) The minimum class of radio operator license required for operation of each specific classification of station is set forth below:

*Minimum Operator License*

*Public coast telegraph, all classes*—T–2.

—Manual Morse under supervision of T1 or T2—T–3.

—NB–DP under supervision of T1 or T2—T–3, G or MP.

*Coast telephone,* all classes:

—Exceeding 250 watts carrier power or 1,500 watts peak envelope power—T–2 or G.

Except in Alaska regional and local area stations—T–3, G or MP.

—250 watts or less carrier power or 1,500 watts or less peak envelope power operating on frequencies below 30 MHz—T–3, G or MP.

Except in Alaska—None.

—250 watts or less carrier power operating on frequencies above 30 MHz—None.

(c) *Special Operating Conditions*: (1) When a coast telephone station of any class is used to transmit manual telegraphy the telegraph key operator must hold a third-class or higher radiotelegraph operator's license.

(2) An operational fixed station associated with a coast station may be operated by the operator of the associated coast station.

[51 FR 31213, Sept. 2, 1986, as amended at 54 FR 10008, Mar. 9, 1989; 54 FR 40058, Sept. 29, 1989]

SHIP STATION OPERATOR REQUIREMENTS

### § 80.155 Ship station operator requirements.

Except as provided in §§ 80.177 and 80.179, operation of transmitters of any ship station must be performed by a person holding a commercial radio operator license or permit of the class required below. The operator is responsible for the proper operation of the station.

[54 FR 10008, Mar. 9, 1989]

### § 80.156 Control by operator.

The operator on board ships required to have a holder of a commercial operator license or permit on board may, if authorized by the station licensee or master, permit an unlicensed person to modulate the transmitting apparatus for all modes of communication except Morse code radiotelegraphy.

[51 FR 34984, Oct. 1, 1986]

### § 80.157 Radio officer defined.

A *radio officer* means a person holding a first or second class radiotelegraph operator's certificate issued by the Commission who is employed to operate a ship radio station in compliance with Part II of Title III of the Communications Act. Such a person is also required to be licensed as a *radio officer* by the U.S. Coast Guard when employed to operate a ship radiotelegraph station.

[53 FR 46455, Nov. 17, 1988]

### § 80.159 Operator requirements of Title III of the Communications Act and the Safety Convention.

(a) Each telegraphy passenger ship equipped with a radiotelegraph station in accordance with Part II of Title III of the Communications Act must carry one radio officer holding a first or second class radiotelegraph operator's certificate and a second radio officer holding either a first or second class radiotelegraph operator's certificate. The holder of a second class radiotelegraph

operator's certificate may not act as the chief radio officer.

(b) Each cargo ship equipped with a radiotelegraph station in accordance with Part II of Title III of the Communications Act and which has a radiotelegraph auto alarm must carry a radio officer holding a first or second class radiotelegraph operator's certificate who has had at least six months service as a radio officer on board U.S. ships. If the radiotelegraph station does not have an auto alarm, a second radio officer who holds a first or second class radiotelegraph operator's certificate must be carried.

(c) Each cargo ship equipped with a radiotelephone station in accordance with Part II of Title III of the Communications Act must carry a radio operator who meets the following requirements:

(1) Where the station power does not exceed 1500 watts peak envelope power, the operator must hold a marine radio operator permit or higher class license.

(2) Where the station power exceeds 1500 watts peak envelope power, the operator must hold a general radiotelephone radio operator license or higher class license.

(d) Each ship transporting more than six passengers for hire equipped with a radiotelephone station in accordance with Part III of Title III of the Communications Act must carry a radio operator who meets the following requirements:

(1) Where the station power does not exceed 250 watts carrier power or 1500 watts peak envelope power, the radio operator must hold a marine radio operator permit or higher class license.

(2) Where the station power exceeds 250 watts carrier power or 1500 watts peak envelope power, the radio operator must hold a general radiotelephone operator license or higher class license.

[51 FR 31213, Sept. 2, 1986, as amended at 54 FR 40058, Sept. 29, 1989]

### §80.161 Operator requirements of the Great Lakes Radio Agreement.

Each ship subject to the Great Lakes Radio Agreement must have on board an officer or member of the crew who holds a marine radio operator permit or higher class license.

### §80.163 Operator requirements of the Bridge-to-Bridge Act.

Each ship subject to the Bridge-to-Bridge Act must have on board a radio operator who holds a restricted radiotelephone operator permit or higher class license.

### §80.165 Operator requirements for voluntary stations.

| | *Minimum operator license* |
|---|---|
| Ship Morse telegraph | T–2. |
| Ship direct-printing telegraph | MP. |
| Ship telephone, more than 250 watts carrier power or 1,000 watts peak envelope power. | G. |
| Ship telephone, not more than 250 watts carrier power or 1,000 watts peak envelope power. | MP. |
| Ship telephone, not more than 100 watts carrier power or 400 watts peak envelope power: | |
| Above 30 MHz | None.[1] |
| Below 30 MHz | RP. |
| Ship earth station | RP. |

[1] RP required for international voyage.

## General Operator Requirements

### §80.167 Limitations on operators.

The operator of maritime radio equipment other than T–1, T–2, or G licensees, must not:

(a) Make equipment adjustments which may affect transmitter operation;

(b) Operate any transmitter which requires more than the use of simple external switches or manual frequency selection or transmitters whose frequency stability is not maintained by the transmitter itself.

### §80.169 Operators required to adjust transmitters or radar.

(a) All adjustments of radio transmitters in any radiotelephone station or coincident with the installation, servicing, or maintenance of such equipment which may affect the proper operation of the station, must be performed by or under the immediate supervision and responsibility of a person holding a first or second class radiotelegraph operator's certificate or a general radiotelephone operator license.

(b) Only persons holding a first or second class radiotelegraph operator

certificate must perform such functions at radiotelegraph stations transmitting Morse code.

(c) Only persons holding an operator certificate containing a ship radar endorsement must perform such functions on radar equipment.

[51 FR 31213, Sept. 2, 1986, as amended at 54 FR 40058, Sept. 29, 1989]

### § 80.175 Availability of operator licenses.

All operator licenses required by this subpart must be readily available for inspection.

### § 80.177 When operator license is not required.

(a) No radio operator authorization is required to operate:

(1) A shore radar, a shore radiolocation, maritime support or shore radionavigation station;

(2) A survival craft station or an emergency position indicating radio beacon;

(3) A ship radar station if:

(i) The radar frequency is determined by a nontunable, pulse type magnetron or other fixed tuned device, and

(ii) The radar is capable of being operated exclusively by external controls;

(4) An on board station; or

(5) A ship station operating in the VHF band on board a ship voluntarily equipped with radio and sailing on a domestic voyage.

(b) No radio operator license is required to install a VHF transmitter in a ship station if the installation is made by, or under the supervision of, the licensee of the ship station and if modifications to the transmitter other than front panel controls are not made.

(c) No operator license is required to operate coast stations of 250 watts or less carrier power or 1500 watts or less peak envelope power operating on frequencies above 30 MHz, or marine utility stations.

(d) No radio operator license is required to install a radar station on a voluntarily equipped ship when a manual is included with the equipment that provides step-by-step instructions for the installation, calibration, and operation of the radar. The installation must be made by, or under the supervision of, the licensee of that ship station and no modifications or adjustments other than to the front panel controls are to be made to the equipment.

[51 FR 31213, Sept. 2, 1986, as amended at 53 FR 41434, Oct. 28, 1987]

### § 80.179 Unattended operation.

The following unattended transmitter operations are authorized:

(a) EPIRB operations when emergency conditions preclude attendance of the EPIRB transmitter by a person.

(b) Automatic use of a transmitter during narrow band-direct printing (NB–DP) operations in accordance with CCIR Recommendation 476 or 625.

(c) Automatic use of a transmitter during digital selective calling (DSC) operations in accordance with CCIR Recommendations 493 and 541.

(d) Automatic use of transmitter when operating as part of the Automated Maritime Telecommunications System (AMTS) or an automated multi-station system for which provisions are contained in this part.

(e) Automatic use of a VHF transmitter to send brief digital communications relating to the condition or safety of vessels while moored when all of the following conditions are met:

(1) The equipment must be using DSC in accordance with CCIR Recommendations 493 and 541 as modified by this section.

(2) Sensors must automatically activate the transmitter only under one or more of the following conditions:

(i) Fire, explosion;

(ii) Flooding;

(iii) Collision;

(iv) Grounding;

(v) Listing, in danger of capsizing;

(vi) Sinking;

(vii) Disabled and adrift; and

(viii) Undesignated condition related to ship safety.

(3) The ''ROUTINE'' DSC category must be used.

(4) Communications must be selectively addressed to an individual station.

(5) Transmitter output power must not exceed one watt.

(6) The call must employ a fixed format and must be in conformity with Recommendation 493 as follows:

Format specifier: Individual call—symbol 120 sent twice.

Address: 9 digit maritime mobile service identity of called station.

Category: Routine—symbol 100.

Self-identification: 9 digit ship station identity.

Message 1: Telecommand symbol 126 sent twice.

Message 2: Telecommand symbol 126 sent 6 times.

End of sequence: Symbol 127.

Error-check character: Check sum.

(7) Such transmissions are permitted only on channel 70 and the transmitter must be inhibited automatically whenever there is another call in progress on Channel 70.

(8) The call sequence for any one alarm must not be repeated until after an interval of at least five seconds. Further repetition is permitted only after intervals of at least fifteen minutes each. Repetitions following fifteen-minute waiting intervals must not exceed three.

[54 FR 10008, Mar. 9, 1989]

## Subpart E—General Technical Standards

### §80.201 Scope.

This subpart gives the general technical requirements for the use of frequencies and equipment in the maritime services. These requirements include standards for equipment authorization, frequency tolerance, modulation, emission, power and bandwidth.

### §80.203 Authorization of transmitters for licensing.

(a) Each transmitter authorized in a station in the maritime services after September 30, 1986, except as indicated in paragraphs (g), (h) and (i) of this section, must be type accepted by the Commission for part 80 operations. The procedures for type acceptance are contained in part 2 of this chapter. Transmitters of a model type accepted or type approved before October 1, 1986 will be considered type accepted for use in ship or coast stations as appropriate.

(b) The external controls, of maritime station transmitters capable of operation in the 156–162 MHz band and manufactured in or imported into the United States after August 1, 1990, or sold or installed after August 1, 1991, must provide for selection of only maritime channels for which the maritime station is authorized. Such transmitters must not be capable of being programmed by station operators using external controls to transmit on channels other than those programmed by the manufacturer, service or maintenance personnel.

(1) Any manufacturer procedures and special devices for programming must only be made available to service companies employing licensed service and maintenance personnel that meet the requirements of §80.169(a) and must not be made available with information normally provided to consumers.

(2) The channels preprogrammed by manufacturers, service and maintenance personnel for selection by the external controls of a maritime station transmitter must be limited to those channels listed in this part and the duplex channels listed in Appendix 18 of the international Radio Regulations. The duplex channels listed in Appendix 18 of the international Radio Regulations must be used only in the specified duplex mode. Simplex operations on Appendix 18 duplex channels that are not in accordance with this part are prohibited.

(3) Programming of authorized channels must be performed only by a person holding a first or second class radiotelegraph operator's certificate or a general radiotelephone operator's license using any of the following procedures:

(i) Internal adjustment of the transmitter;

(ii) Use of controls normally inaccessible to the station operator;

(iii) Use of external devices or equipment modules made available only to service and maintenance personnel through a service company; and

(iv) Copying of a channel selection program directly from another transmitter (cloning) using devices and procedures made available only to service and maintenance personnel through a service company.

(4) VHF maritime radio station transmitters capable of being programmed by station operators by

means of external controls that are installed in a maritime station by August 1, 1991, are authorized for use indefinitely at the same maritime station.

(c) All VHF ship station transmitters that are either manufactured in or imported into the United States, on or after August 1, 1993, or are initially installed on or after August 1, 1994, must be equipped with an automatic timing device that deactivates the transmitter and reverts the transmitter to the receive mode after an uninterrupted transmission period of five minutes, plus or minus 10 per cent. Additionally, such transmitters must have a device that indicates when the automatic timer has deactivated the transmitter. VHF ship station transmitters initially installed before August 1, 1994, are authorized for use indefinitely at the same maritime station. VHF handheld, portable transmitters are not required to comply with the requirements in paragraph (c) of this section except when used as described in § 80.141.

(d) Except for radar equipment, applicants for type acceptance of radio equipment designed to satisfy Part II of Title III of the Communications Act or the Safety Convention must also submit with their application a working unit of the type for which type acceptance is desired. Manufacturers of radar equipment intended for installation on voluntarily equipped ships by persons without FCC operators license must include with their equipment authorization application a manual that provides step-by-step procedures for the installation, calibration, and operation of the radar stations.

(e) Double sideband (DSB) radiotelephone equipment operating in the 1605–27500 kHz band will be authorized only for use in ship stations. Such equipment must comply with Chapter IV of the Safety Convention, operate only on the frequency 2182 kHz, and be marked ''Distress and Safety Use Only''.

(f) Transmitters type accepted for single sideband suppressed carrier radiotelephone transmissions may be used for facsimile transmissions without filing for a type acceptance modification provided the transmitters retain type acceptance and comply with the applicable standards in this part.

(g) Manufacturers of ship earth station transmitters intended for use in the INMARSAT space segment must comply with the verification procedures given in part 2 of this chapter. Such equipment must be verified in accordance with the technical requirements provided by INMARSAT and must be type approved by INMARSAT for use in the INMARSAT space segment. The ship earth station input/output parameters, the data obtained when the equipment is integrated in system configuration and the pertinent method of test procedures that are used for type approval of the station model which are essential for the compatible operation of that station in the INMARSAT space segment must be disclosed by the manufacturer upon request of the FCC or the United States Signatory. Witnessing of the type approval tests and the disclosure of the ship earth station equipment design or any other information of a proprietary nature will be at the discretion of the ship earth station manufacturer. Transmitters of a model that was type accepted by MARISAT for use in its system will be considered verified for use in the INMARSAT system. However, the continued use of such equipment will not be permitted after September 1, 1991, unless verified under the Commission's procedures.

(h) In addition to the type acceptance requirements contained in part 2 of this chapter applicants for type acceptance of 406.025 MHz radiobeacons must also comply with the type acceptance procedures contained in § 80.1061 of this part.

(i) Type acceptance is not required for U.S. Government furnished transmitters to fulfill a U.S. Government contract. However, such transmitters must comply with all technical requirements in this part.

(j) Type acceptance is not required for transmitters authorized for developmental stations.

(k) Type acceptance of individual radio transmitters requested by station applicants or licensees must also follow the type acceptance procedure in paragraph (a) of this section. However, operation of such transmitters must be

limited to the specific units individually identified on the station authorization. Such transmitters will not be included in the Commission's ''Radio Equipment List''.

(l) Ship station transmitters may be type accepted for emissions not shown in § 80.205 of this part. However, such emissions are not authorized for use in the United States or for communications with U.S. coast stations.

(m) Ship station MF, HF, and VHF transmitters may employ external or internal devices to send synthesized voice transmissions for distress and safety purposes on any distress and safety frequency authorized for radiotelephony listed in § 80.369 provided the following requirements are met:

(1) The technical characteristics of the distress transmissions must comply with this part.

(2) A transmitter and any internal device capable of transmitting a synthesized voice message must be type accepted as an integral unit.

(3) The synthesized voice distress transmission must begin with the words ''this is a recording'' and should be comprised of at least:

(i) the radiotelephone distress call as described in § 80.315(b) and the ship's position as described in § 80.316(c); or

(ii) the radiotelephone distress message as described in § 80.316(b). If available, the ship's position should be reported as described in § 80.316(c).

(4) Such transmission must be initiated manually by an off-switch that is protected from inadvertent activation and must cause the transmitter to switch to an appropriate distress and safety frequency. The radiotelephone distress call and message described in §§ 80.203(m)(3) (i) and (ii), respectively, may be repeated. However, the entire transmission including repeats must not exceed 45 seconds from beginning to end. Upon ending the transceiver must return to the receive mode and must not be capable of sending the synthesized distress call for at least thirty seconds. Placing the switch to the off position must stop the distress transmission and permit the transmitter to be used to send and receive standard voice communications.

(5) Use of the microphone must cause the synthesized voice distress transmission to cease and allow the immediate use of the transmitter for sending and receiving standard voice communications.

[51 FR 31213, Sept. 2, 1986, as amended at 53 FR 41434, Oct. 28, 1987; 53 FR 37308, Sept. 26, 1988; 54 FR 31839, Aug. 2, 1989; 56 FR 3787, Jan. 31, 1991; 56 FR 57496, Nov. 12, 1991; 56 FR 57988, Nov. 15, 1991; 57 FR 8727, Mar. 12, 1992]

### § 80.205 Bandwidths.

(a) An emission designator shows the necessary bandwidth for each class of emission of a station except that in ship earth stations it shows the occupied or necessary bandwidth, whichever is greater. The following table gives the class of emission and corresponding emission designator and authorized bandwidth:

| Class of emission | Emission designator | Authorized bandwidth (kHz) |
|---|---|---|
| A1A | 160HA1A | 0.4 |
| A1B [1] | 160HA1B | 0.4 |
| A1D [12] | 16K0A1D | 20.0 |
| A2A | 2K66A2A | 2.8 |
| A2B [1] | 2K66A2B | 2.8 |
| A2D [12] | 16K0A2D | 20.0 |
| A3E | 6K00A3E | 8.0 |
| A3N [2] | 2K66A3N | 2.8 |
| A3X [3] | 3K20A3X | 25.0 |
| F1B [4] | 280HF1B | 0.3 |
| F1B [5] | 300HF1B | 0.5 |
| F1B [6] | 16KOF1B | 20.0 |
| F1C | 2K80F1C | 3.0 |
| F1D [12] | 16K0F1D | 20.0 |
| F2B [6] | 16KOF2B | 20.0 |
| F2C [7] | 16KOF2C | 20.0 |
| F2D [12] | 16K0F2D | 20.0 |
| F3C | 2K80F3C | 3.0 |
| F3C [7] | 16KOF3C | 20.0 |
| F3E [8] | 16KOF3E | 20.0 |
| F3N [9] | 20MOF3N | 20,000.0 |
| G1D [12] | 16K0G1D | 20.0 |
| G2D [12] | 16K0G2D | 20.0 |
| G3D [10] | 16KOG3D | 20.0 |
| G3E [8] | 16KOG3E | 20.0 |
| G3N [3 13] | 16KOG3N | 20.0 |
| H2A | 1K40H2A | 2.8 |
| H2B [1] | 1K40H2B | 2.8 |
| H3E [11] | 2K80H3E | 3.0 |
| H3N | 2K66H3N | 2.8 |
| J2A | 160HJ2A | 0.4 |
| J2B [4] | 280HJ2B | 0.3 |
| J2B | 300HJ2B | 0.5 |
| J2B | 2K80J2B | 3.0 |
| J2C | 2K80J2C | 3.0 |
| J3C | 2K80J3C | 3.0 |
| J3E [11] | 2K80J3E | 3.0 |
| J3N | 160HJ3N | 0.4 |
| NON | NON | 0.4 |
| PON | ([12]) | ([12]) |
| R3E [11] | 2K80R3E | 3.0 |

[1] On 500 kHz and 2182 kHz A1B, A2B, H2B and J2B emissions indicate transmission of the auto alarm signals.

[2] Applicable only to transmissions in the 405–525 kHz band for direction finding.
[3] Applicable only to EPIRB's.
[4] Radioprinter transmissions for communications with private coast stations.
[5] NB–DP radiotelegraph and data transmissions for communications with public coast stations.
[6] Applicable only to radioprinter and data in the 156–162 MHz band and radioprinter in the 216–220 MHz band.
[7] Applicable only to facsimile in the 156–162 MHz and 216–220 MHz bands.
[8] Applicable only when maximum frequency deviation is 5 kHz. See also paragraph (b) of this section.
[9] Applicable only to marine hand-held radar.
[10] Applicable only to on-board frequencies for maneuvering or navigation.
[11] Transmitters type accepted prior to December 31, 1969, for emission H3E, J3E and R3E and an authorized bandwidth of 3.5 kHz may continue to be operated. These transmitters will not be authorized in new installations.
[12] Applicable to radiolocation and associated telecommand ship stations operating on 154.585 MHz, 159.480 MHz, 160.725 MHz. 160.785 MHz, 454.000 MHz, and 459.000 MHz; emergency position indicating radiobeacons operating in the 406.000–406.1000 MHz frequency bank; and data transmissions in the 156–162 MHz band.
[13] Class C EPIRB stations may not be used after February 1, 1999.

(b) For land stations the maximum authorized frequency deviation for F3E or G3E emission is as follows:

(1) 5 kHz in the 72.0–73.0 MHz, 75.4–76.0 MHz and 156–162 MHz bands;

(2) 15 kHz for stations which were authorized for operation before December 1, 1961, in the 73.0–74.6 MHz band.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 7418, Mar. 11, 1987; 53 FR 37308, Sept. 26, 1988; 56 FR 11516, Mar. 19, 1991; 57 FR 43407, Sept. 21, 1992; 58 FR 33344, June 17, 1993; 59 FR 7714, Feb. 16, 1994]

### § 80.207 Classes of emission.

(a) Authorization to use radiotelephone and radiotelegraph emissions by ship and coast stations includes the brief use of radiotelegraphy, including keying only the modulating audio frequency, tone signals, digital selective calling and other signalling devices to establish or maintain communications, provided:

(1) That these signalling techniques, other than digital selective calling, are not used on frequencies designated for general purpose DSC calling and distress and safety DSC calling as listed in § 80.359 (a) and (b).

(2) The authorized radiotelephone emission bandwidth is not exceeded; and

(3) Harmful interference is not caused to stations operating in accordance with the Radio Regulations.

(4) Use of selective calling equipment based upon this section, other than DSC equipment, may be continued for at least three years subsequent to an FCC Order that will authorize DSC as the only selective calling technique permitted for use in the maritime services. To quality for the continuation, the equipment must be used at the same station location where it was installed and operating on the date of the indicated FCC Order. This paragraph is not applicable to AMTS in the 216–220 MHz band or to NB–DP equipment that complies with CCIR Recommendation 476.

(b) In radiotelegraphy communications employing a modulated carrier the carrier must be keyed and modulated by an audio frequency.

(c) Authorization to use single sideband emission is limited to emitting a carrier;

(1) For full carrier transmitters at a power level between 3 and 6 dB below peak envelope power;

(2) For suppressed carrier transmitters at a power level at least 40 dB below peak envelope power; and

(3) For reduced or variable level carrier:

(i) In the 1600–4000 kHz band:

(A) For coast station transmitters 18±2 dB below peak envelope power;

(B) For ship station transmitters installed before January 2, 1982, 16±2 dB below peak envelope power; and

(C) For ship station transmitters installed after January 1, 1982, 18±2 dB below peak envelope power.

(ii) In the 4000–27500 kHz band:

(A) For coast station transmitters 18±2 dB below peak envelope power;

(B) For ship station transmitters installed before January 2, 1978, 16±2 dB below peak envelope power; and

(C) For ship station transmitters installed after January 1, 1978, 18±2 dB below peak envelope power.

(d) The authorized classes of emission are as follows:

| Types of stations | Classes of emission |
|---|---|
| Ship Stations [1] | |
| Radiotelegraphy: | |
| 100–160 kHz | A1A |
| 405–525 kHz | A1A, J2A |
| 1605–27500 kHz: | |
| Manual | A1A, J2A |
| DSC | F1B, J2B |
| NB–DP | F1B, J2B |
| Facsimile | F1C, F3C, J2C, J3C |
| 156–162 MHz [2] | F1B,F2B,F2C,F3C,F1D,F2D |
| DSC | G2B |
| 216–220 MHz [3] | F1B, F2B, F2C, F3C |
| 1626.5–1646.5 MHz | ([4]) |

| Types of stations | Classes of emission |
|---|---|
| Radiotelephony: | |
| 1605–27500 kHz [5] | H3E, J3E, R3E |
| 27.5–470 MHz [6] | G3D, G3E |
| 1626.5–1646.5 MHz | ([4]) |
| Radiodetermination: | |
| 285–325 kHz [7] | A1A, A2A |
| 405–525 kHz (Direction Finding) [8]. | A3N, H3N, J3N, NON |
| 154–459 MHz: [12] | A1D, A2D, F1D, F2D, G1D, G2D |
| 2.4–9.5 GHz | PON |
| 14.00–14.05 GHz | F3N |
| Land Stations [1] | |
| Radiotelegraphy: | |
| 100–160 kHz | A1A |
| 405–525 kHz | A1A, J2A |
| 1605–2850 kHz: | |
| Manual | A1A, J2A |
| Facsimile | F1C, F3C, J2C, J3C |
| Alaska—Fixed | A1A, J2A |
| 4000–27500 kHz: | |
| Manual | A1A, J2A |
| DSC | F1B, J2B |
| NB–DP | F1B, J2B |
| Facsimile | F1C, F3C, J2C, J3C |
| Alaska—Fixed | A1A, A2A, F1B, F2B |
| 72–76 MHz | A1A, A2A, F1B, F2B |
| 156–162 MHz [2] | F1B,F2B,F2C,F3C,F1D,F2D |
| DSC | G2B |
| 216–220 MHz [3] | F1B, F2B, F2C, F3C |
| Radiotelephony: | |
| 1605–27500 kHz | H3E, J3E, R3E |
| 72–76 MHz | A3E, F3E, G3E |
| 156–470 MHz | G3E |
| Radiodetermination: | |
| 2.4–9.6 GHz | PON |
| Distress, Urgency and Safety: [8 9] | |
| 500 kHz [10] | A2A and A2B or H2A and H2B |
| 2182 kHz [10 11] | A2B, A3B, H2B, H3E, J2B, and J3E |
| 8364 kHz | A2A, H2A |
| 121.500 MHz | A3E, A3X, N0N |
| 123.100 MHz | A3E |
| 156.750 and 156.800 MHz [13]. | G3E, G3N |
| 243.000 MHz | A3E, A3X, N0N |
| 406.025 MHz | G1D |

[1] Excludes distress, EPIRB's, and survival craft.

[2] Frequencies used for public correspondence. See §§ 80.371(c) and 80.385(b). Transmitters type accepted before January 1, 1994, for G3E emissions will be authorized indefinitely for F2C, F3C, F1D and F2D emissions. Transmitters type accepted after January 1, 1994, will be authorized for F2C, F3C, F1D or F2D emissions only if they are type accepted specifically for each emission designator.

[3] Frequencies used in the Automated Maritime Telecommunications System (AMTS). See § 80.385(b).

[4] Types of emission are determined by the INMARSAT Organization.

[5] Transmitters type accepted prior to December 31, 1969, for emission H3E, J3E, and R3E and an authorized bandwidth of 3.5 kHz may continue to be operated. These transmitters will not be authorized in new installations.

[6] G3D emission must be used only by one-board stations for maneuvering or navigation.

[7] Frequencies used for cable repair operations. See § 80.375(b).

[8] For direction finding requirements see § 80.375.

[9] Includes distress emissions used by ship, coast, EPIRB's and survival craft stations.

[10] On 500 kHz and 2182 kHz A1B, A2B, H2B and J2B emissions indicate transmission of the auto alarm signals.

[11] Ships on domestic voyages must use J3E emission only.

[12] For frequencies 154.585 MHz, 159.480 MHz, 160.725 MHz, 160.785 MHz, 454.000 MHz and 459.000 MHz, authorized for offshore radiolocation and related telecommand operations.

[13] Class C EPIRB stations may not be used after February 1, 1999.

[51 FR 31213, Sept. 2, 1986; 51 FR 34984, Oct. 1, 1986; as amended at 52 FR 7418, Mar. 11, 1987; 52 FR 35244, Sept. 18, 1987; 53 FR 8905, Mar. 18, 1988; 53 FR 37308, Sept. 26, 1988; 54 FR 40058, Sept. 29, 1989; 54 FR 49993, Dec. 4, 1989; 56 FR 11516, Mar. 19, 1991; 57 FR 43407, Sept. 21, 1992; 58 FR 33344, June 17, 1993]

## § 80.209 Transmitter frequency tolerances.

(a) The frequency tolerance requirements applicable to transmitters in the maritime services are shown in the following table. Tolerances are given as parts in $10^6$ unless shown in Hz.

| Frequency bands and categories of stations | Tolerances [1] |
|---|---|
| (1) Band 100–525 kHz: | |
| (i) Coast stations: | |
| For single sideband emissions | 20 Hz. |
| For transmitters with narrow-band direct printing and data emissions. | 10 Hz. [2] |
| For transmitters with digital selective calling emissions. | 10 Hz. |
| For all other emissions | 100 |
| (ii) Ship stations: | |
| For transmitters with single sideband emissions type accepted or type approved before November 30, 1977. | 20 Hz. |
| For transmitters with other emissions type accepted or type approved before November 30, 1977. | 1000. [5] |
| For transmitters with narrow-band direct printing and data emissions. | 10 Hz. [2] |
| For transmitters with digital selective calling emissions. | 10 Hz. [3] |
| For all other transmitters type accepted or type approved after November 29, 1977. | 20 Hz. |
| (iii) Ship stations for emergency only: | |
| For transmitters type approved before November 30, 1977. | 3000. [5] |
| For all transmitters type accepted or type approved after November 29, 1977. | 20 Hz. |
| (iv) Survival craft stations: | |
| For transmitters type approved before November 30, 1977. | 5000. [5] |
| For transmitters type approved or type accepted after November 29, 1977. | 20 Hz. |
| (v) Radiodetermination stations: | |
| For all emissions | 100. |
| (2) Band 1600–4000 kHz: | |
| (i) Coast Stations and Alaska fixed stations: | |
| For single sideband and facsimile | 20 Hz. |
| For narrow-band direct-printing and data emissions. | 10 Hz. [2] |
| For digital selective calling emissions | 10 Hz. |
| For all other emissions | 50. |
| (ii) Ship stations: | |
| For transmitters with narrow-band direct printing and data emissions. | 10 Hz. [2] |
| For transmitters with digital selective calling emissions. | 10 Hz. [3] |

| Frequency bands and categories of stations | Tolerances[1] |
|---|---|
| For all other transmitters | 20 Hz. |
| (iii) Survival craft stations: | 20 Hz. |
| (iv) Radiodetermination stations: | |
| With power 200W or less | 20. |
| With power above 200W | 10. |
| (3) Band 4000–27500 kHz: | |
| (i) Coast stations and Alaska fixed stations: | |
| For single sideband and facsimile emissions. | 20 Hz. |
| For narrow-band direct printing and data emissions. | 10 Hz.[2] |
| For digital selective calling emissions | 10 Hz. |
| For Morse telegraphy emissions | 10. |
| For all other emissions | 15. |
| (ii) Ship stations: | |
| For transmitters with narrow-band direct printing and data emissions. | 10 Hz.[2] |
| For transmitters with digital selective calling emissions. | 10 Hz.[3] |
| For all other transmitters | 20 Hz. |
| (iii) Survival craft stations: | 50 Hz. |
| (4) Band 72–76 MHz: | |
| (i) Fixed stations: | |
| Operating in the 72.0–73.0 and 75.4–76.0 MHz bands. | 5. |
| Operating in the 73.0–74.6 MHz band | 50. |
| (5) Band 156–162 MHz: | |
| (i) Coast stations: | |
| For stations licensed to operate with a carrier power:. | |
| Below 3 watts | 10. |
| 3 to 100 watts | 5. |
| Above 100 watts | 2.5. |
| (ii) Ship stations | 10.[4] |
| (iii) Survival craft stations operating on 121.500 MHz. | 50. |
| (iv) EPIRBs: | |
| Operating on 121.500 and 243.000 MHz. | 50. |
| Operating on 156.750 and 156.800 MHz[6]. | 10. |
| (6) Band 216–220 MHz | |
| (i) Coast Stations: | |
| For all emissions | 5. |
| (ii) Ship stations: | |
| For all emissions | 5. |
| (7) Band 400–466 MHz: | |
| (i) EPIRBs operating on 406.025 MHz | 5. |
| (ii) On-board stations | 5. |
| (iii) Radiolocation and telecommand stations. | 5. |
| (8) Band 1626.5–1646.5 MHz: | |
| (i) Ship earth stations | 5. |

[1] Transmitters authorized prior to January 2, 1990, with frequency tolerances equal to or better than those required after this date will continue to be authorized in the maritime services provided they retain type acceptance and comply with the applicable standards in this part.

[2] The frequency tolerance for narrow-band direct printing and data transmitters installed before January 2, 1992, is 15 Hz for coast stations and 20 Hz for ship stations. The frequency tolerance for narrow-band direct printing and data transmitters type accepted or installed after January 1, 1992, is 10 Hz.

[3] Until February 2, 1999, the frequency tolerance for DSC ship station transmitters in the MF and HF bands that were installed before January 2, 1992, is 20 Hz. The frequency tolerance for DSC ship station transmitters in the MF and HF bands type accepted or installed after January 1, 1992, is 10 Hz. After February 1, 1999, the frequency tolerance for all DSC ship station transmitters in the MF and HF bands (regardless of installation date) is 10 Hz.

[4] For transmitters in the radiolocation and associated telecommand service operating on 154.585 MHz, 159.480 MHz, 160.725 MHz and 160.785 MHz the frequency tolerance is 15 parts in $10^6$.

[5] This frequency tolerance applies to ship station transmitters until February 1, 1999. Thereafter, the frequency tolerance is 20 Hz.

[6] Class C EPIRB stations may not be used after February 1, 1999.

(b) When pulse modulation is used in land and ship radar stations operating in the bands above 2.4 GHz the frequency at which maximum emission occurs must be within the authorized bandwidth and must not be closer than 1.5/T MHz to the upper and lower limits of the authorized bandwidth where ''T'' is the pulse duration in microseconds. In the band 14.00–14.05 GHz the center frequency must not vary more than 10 MHz from 14.025 GHz.

(c) For stations in the maritime radiodetermination service, other than ship radar stations, the authorized frequency tolerance will be specified on the license when it is not specified in this part.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 7418, Mar. 11, 1987; 53 FR 37308, Sept. 26, 1988; 54 FR 49994, Dec. 4, 1989; 57 FR 26778, June 16, 1992; 58 FR 33344, June 17, 1993]

## § 80.211 Emission limitations.

The emissions must be attenuated according to the following schedule.

(a) The mean power when using emissions H3E, J3E and R3E:

(1) On any frequency removed from the assigned frequency by more than 50 percent up to and including 150 percent of the authorized bandwidth:

at least 25 dB for transmitters installed before February 1, 1992,

at least 28 dB for transmitters installed on or after February 1, 1992;

(2) On any frequency removed from the assigned frequency by more than 150 percent up to and including 250 percent of the authorized bandwidth: At least 35 dB; and

(3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 plus $10\log_{10}$ (mean power in watts) dB.

(b) For transmitters operating in the band 1626.5–1646.5 MHz. In any 4 kHz band the mean power of emissions shall be attenuated below the mean output power of the transmitter as follows:

(1) Where the center frequency is removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: At least 25 dB;

(2) Where the center frequency is removed from the assigned frequency by more than 100 percent up to 250 percent of the authorized bandwidth: At least 35 dB; and

(3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 plus $10\log_{10}$ (mean power in watts) dB.

(c) In any 4 kHz band the peak power of spurious emissions and noise at the input to the transmit antenna must be attenuated below the peak output power of the station as follows:

(1) 125 dB at 1525.0 MHz, increasing linearly to 90 dB at 1612.5 MHz;

(2) 90 dB at 1612.5 MHz increasing linearly to 60 dB at 1624.0 MHz;

(3) 90 dB from 1624.0 MHz to 1650.0 MHz, except at frequencies near the transmitted carrier where the requirements of paragraphs (b)(1) through (3) of this section, apply;

(4) 60 dB at 1650.0 MHz decreasing linearly to 90 dB at 1662.5 MHz;

(5) 90 dB at 1662.5 MHz decreasing linearly to 125 dB at 1752.5 MHz; and

(6) 125 dB outside above range, except for harmonics which must comply with (b)(3) of this section.

(d) Radiotelegraph survival craft transmitters must comply with §80.223.

(e) The mean power of EPIRBs operating on 121.500 MHz, 243.000 MHz and 406.025 MHz must be as follows:

(1) On any frequency removed from the assigned frequency by more than 50 percent, up to and including 100 percent of the authorized bandwidth: At least 25 dB;

(2) On any frequency removed from the assigned frequency by more than 100 percent: at least 30 dB.

(f) The mean power when using emissions other than those in paragraphs (a), (b), (c) and (d) of this section:

(1) On any frequency removed from the assigned frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: At least 25 dB;

(2) On any frequency removed from the assigned frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: At least 35 dB; and

(3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least 43 plus $10\log_{10}$ (mean power in watts) dB.

(g) Developmental stations must conform to the standards for regular authorized stations.

[51 FR 31213, Sept. 2, 1986, as amended at 54 FR 40058, Sept. 29, 1989; 54 FR 49994, Dec. 4, 1989; 56 FR 11516, Mar. 19, 1991]

### §80.213 Modulation requirements.

(a) Transmitters must meet the following modulation requirements:

(1) When double sideband emission is used the peak modulation must be maintained between 75 and 100 percent;

(2) When phase or frequency modulation is used in the 156–162 MHz and 216–220 MHz bands the peak modulation must be maintained between 75 and 100 percent. A frequency deviation of ±5 kHz is defined as 100 percent peak modulation; and

(3) In single sideband operation the upper sideband must be transmitted. Single sideband transmitters must automatically limit the peak envelope power to their authorized operating power and meet the requirements in §80.207(c).

(b) Radiotelephone transmitters using A3E, F3E and G3E emission must have a modulation limiter to prevent any modulation over 100 percent. This requirement does not apply to survival craft transmitters, to transmitters that do not require a license or to transmitters whose output power does not exceed 3 watts.

(c) Coast station transmitters operated in the 72.0–73.0 MHz and 75.4–76.0 MHz bands must be equipped with an audio low-pass filter. The filter must be installed between the modulation limiter and the modulated radio frequency stage. At frequencies between 3 kHz and 15 kHz it must have an attenuation greater than at 1 kHz by at least $40\log_{10}$ (f/3) dB where ''f'' is the frequency in kilohertz. At frequencies above 15 kHz the attenuation must be at least 28 dB greater than at 1 kHz.

(d) Ship and coast station transmitters operating in the 156–162 MHz and

216–220 MHz bands must be capable of proper operation with a frequency deviation of ±5 kHz when using any emission authorized by § 80.207.

(e) Coast station transmitters operated in the 156–162 MHz band must be equipped with an audio low-pass filter. The filter must be installed between the modulation limiter and the modulated radio frequency stage. At frequencies between 3 kHz and 20 kHz it must have an attenuation greater than at 1 kHz by at least $60\log_{10}$ (f/3) dB where ''f'' is the audio frequency in kilohertz. At frequencies above 20 kHz the attenuation must be at least 50 dB greater than at 1 kHz.

(f) Radiodetermination ship stations operating on 154.585 MHz, 159.480 MHz, 160.725 MHz, 160.785 MHz, 454.000 MHz and 459.000 MHz must employ a duty cycle with a maximum transmission period of 60 seconds followed by a minimum quiescent period four times the duration of the transmission period.

(g) Radar stations operating in the bands above 2.4 GHz may use any type of modulation consistent with the bandwidth requirements in § 80.209(b).

(h) Radar transponder coast stations using the 2920–3100 MHz or 9320–9500 MHz band must operate in a variable frequency mode and respond on their operating frequencies with a maximum error equivalent to 100 meters. Additionally, their response must be encoded with a Morse character starting with a dash. The duration of a Morse dot is defined as equal to the width of a space and ⅓ of the width of a Morse dash. The duration of the response code must not exceed 50 microseconds. The sensitivity of the stations must be adjustable so that received signals below −10 dBm at the antenna will not activate the transponder. Antenna polarization must be horizontal when operating in the 9320–9500 MHz band and either horizontal or both horizontal and vertical when operating in the 2920–3100 MHz band. Racons using frequency agile transmitting techniques must include circuitry designed to reduce interference caused by triggering from radar antenna sidelobes.

(i) Variable frequency ship station transponders operating in the 2920–3100 MHz or 9320–9500 MHz band that are not used for search and rescue purposes must meet the following requirements:

(1) Non-selectable transponders must have the following characteristics:

(i) They must respond on all their frequencies with a maximum range error equivalent to 100 meters;

(ii) They must use a Morse encoding of ''PS'' (dot-dash-dash-dot, dot-dot-dot), meaning ''You should not come any closer''. The width of a Morse dot is defined as equal to the width of a space and ⅓ of the width of a Morse dash;

(iii) When they employ swept frequency techniques they must not transmit on any frequency for more than 10 seconds in any 120 second period;

(iv) Any range offset of their response must occur during their pause on the fixed frequency;

(v) The duration of the response code must not exceed 50 microseconds;

(vi) The sensitivity of the stations must be adjustable so that received signals below −10 dBm at the antenna input will not activate the transponder;

(vii) Antenna polarization must be horizontal when operating in the 9320–9500 MHz band and either horizontal or both horizontal and vertical when operating in the 2920–3100 MHz band.

(viii) Transponders using frequency agile techniques must include circuitry designed to reduce interference caused by triggering from radar antenna sidelobes.

(2) Selectable transponders must be authorized under part 5 of the Commission's rules until standards for their use are developed.

(j) The transmitted signals of search and rescue transponders must cause to appear on a radar display a series of at least 20 equally spaced dots.

(k) The modulation requirements for EPIRB's are contained in subpart V.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 7418, Mar. 11, 1987; 52 FR 28825, Aug. 4, 1987; 54 FR 40058, Sept. 29, 1989; 57 FR 43407, Sept. 21, 1992]

### § 80.215 Transmitter power.

(a) Transmitter power shown on the radio station authorization is the maximum power the licensee is authorized

to use. Power is expressed in the following terms:

(1) For single sideband emission: Peak evelope power;

(2) For G3E emission: Carrier power;

(3) For PON and F3N emission: Mean power;

(4) For all emissions in the 1626.5–1646.5 MHz band: equivalent isotropic radiated power.

(5) For all other emissions: the carrier power multiplied by 1.67.

(b) *Coast station frequencies below 27500 kHz.* The maximum power must not exceed the values listed below.

(1) Public coast stations, except Alaska:

(i) Radiotelegraphy:

100–160 kHz—80kW
405–525 kHz—40kW
2035–2065 kHz—6.6kW
4000–8000 kHz—10kW
8000–9000 kHz—20kW
12000–27500 kHz—30kW

(ii) Radiotelephony:

2000–4000 kHz—day—800W
2000–4000 kHz—night—400W
4000–27500 kHz—10kW

(2) Private coast stations, except in Alaska: 1kW

(3) Coast stations in Alaska, public and private:

405–525 kHz—265W
1605–12000 kHz—150W

(c) *Coast station frequencies above 27500 kHz.* The maximum power must not exceed the values listed below.

(1) Coast stations:

156–162 MHz—50W [1, 12]
216–220 MHz [2]

(2) Marine utility stations:

156–162 MHz—10W

(d) *Ship station frequencies below 27500 kHz.* The maximum power must not exceed the values listed below:

(1) Radiotelegraphy: All ships—2kW [3]

(2) Radiotelephony:

(i) All ships—Great Lakes and Inland Waters—150W

(ii) All ships—Open waters; 2000–4000 kHz—150W

2182 kHz—emergency, urgency, or safety ship to shore—400W [4]

(iii) All ships—Open waters; 4000–27500 kHz—1.5kW [5].

(3) Digital selective calling:

All ships 415–526.5 kHz—400 W
All ships 1605–4000 kHz—400 W
All ships 4000–27500 kHz—1.5 kW

(e) *Ship stations frequencies above 27500 kHz.* The maximum power must not exceed the values listed below.

(1) Ship stations 156–162 MHz—25W [6]

Marine utility stations and hand-held portable transmitters 156–162 MHz—10W

(2) Ship stations 216–220 MHz—25W [7]

(3) On board stations 456–468 MHz—4W [8]

(4) Ship earth stations 1626.5–1646.5 MHz [9]

(5) Ship radar stations with F3N emission—200 mW

(6) EPIRB—121.500 and 243.00 MHz [10]

(7) EPIRB—156.750 and 156.800 MHz [10]

(f) *Fixed stations.* The maximum power must not exceed the values listed below.

(1) Maritime support (receiver test):

R3E and J3C emission—150W
F3E emission—50W

(2) Operational fixed: 72–76 MHz and above 162 MHz [11]

(3) Alaska—Private fixed:

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[1] Maximum authorized power at the input terminals of the station antenna.

[2] See paragraph (h) of this section.

[3] For passenger ships 5000 gross tons and over—8kW. For cable-repair ships operating on radiodetermination frequencies, 15 watts; see § 80.375(b).

[4] For passenger ships 5000 gross tons and over—1kW.

[5] For passenger ships 5,000 gross tons and over 3kW.

[6] Reducible to 1 watt or less, except for transmitters limited to public correspondence channels and used in an automated system.

[7] Reducible to 2.5 watts or less; see paragraph (i) of this section.

[8] Type acceptance based on a carrier power of 4 watts with transmitter connected to a dummy load of matching impedance. The effective radiated power must not exceed 2 watts.

[9] See paragraph (k) of this section.

[10] See subpart V of this part.

[11] See paragraph (l) of this section.

[12] The frequencies 156.375 MHz and 156.650 MHz are primarily intership frequencies. When authorized for coast stations on a secondary basis, the normal output power must not exceed 1 watt and the maximum output power must not exceed 10 watts.

10–200 kHz—650W
405–525 kHz—265W
1605–12000 kHz—150W

(4) Alaska—Public fixed:

405–525 kHz—1kW
1605–12000 kHz—1kW

(g) The carrier power of ship station radiotelephone transmitters, except portable transmitters, operating in the 156–162 MHz band must be at least 8 but not more than 25 watts. Transmitters that use 12 volt lead acid storage batteries as a primary power source must be measured with a primary voltage between 12.2 and 13.7 volts DC. Additionally, unless otherwise indicated, equipment in radiotelephone ship stations operating in the 156–162 MHz band must meet the following requirements:

(1) All transmitters must be capable of reducing the carrier power to one watt or less;

(2) All remote control units that are used with transmitters manufactured after August 31, 1979, or installed after February 29, 1980, must be capable of causing the carrier power to be reduced to one watt or less;

(3) Except as indicated in (4) of this paragraph, all transmitters manufactured after January 21, 1987, or in use after January 21, 1997, must automatically reduce the carrier power to one watt or less when the transmitter is tuned to 156.375 MHz or 156.650 MHz, and must be provided with a manual override switch which when held by an operator will permit full carrier power operation on 156.375 MHz and 156.650 MHz;

(4) Hand-held portable transmitters are not required to comply with the automatic reduction of carrier power in (g)(3) of this section; and

(5) Transmitters dedicated for use on public correspondence duplex channels as additional equipment to a VHF ship station in the Great Lakes which meet all pertinent rules in this part are not required to reduce their carrier power to one watt.

(h) Coast stations in an AMTS may radiate as follows, subject to the condition that no harmful interference will be caused to television reception except that TV services authorized subsequent to the filing of the AMTS station application will not be protected.

(1) When located more than 169 kilometers (105 miles) from the antenna of a Channel 13 TV station and more than 129 kilometers (80 miles) from the antenna of a channel 10 station, the ERP of coast stations having an antenna height of 61 meters (200 feet) or less above ground must not exceed 1000 watts.

(2) Coast stations located less than 169 kilometers (105 miles) from a Channel 13 TV station, or less than 129 kilometers (80 miles) from a channel 10 station or when using a transmitting antenna height above ground greater than 61 meters (200 feet), must submit a plan to limit interference to TV reception. The plan must include:

(i) A description of the interference contour with indentification of the method used to determine this contour; and

(ii) A statement concerning the number of residences within the interference contour. The interference contour includes only areas inside the TV grade B contour with the latter determined assuming maximum permissible TV antenna height and power for broadcast stations and the actual facility parameters for translators and low power TV stations. See part 73, subpart E of this chapter for further information on TV grade B contour determination.

(3) When located as described in paragraph (h)(2) of this section, the coast station (or stations affecting the same TV Grade B contour) will be authorized if the applicant's plan has limited the interference contour(s) to fewer than 100 residences or if the applicant:

(i) Shows that the proposed site is the only suitable location;

(ii) Develops a plan to control any interference caused to TV reception within the Grade B contour from its operations; and

(iii) Agrees to make such adjustments in the TV receivers affected as may be necessary to eliminate interference caused by its operations.

(4) The applicant must eliminate any interference caused by its operation to TV reception within the Grade B contour that might develop within 90 days of the time it is notified in writing by the Commission. If this interference is not removed within the 90-day period,

operation of the coast station must be discontinued. The licensee is expected to help resolve all complaints of interference, whether inside or outside the Grade B contour.

(5) The transmitter output power must be 50 watts or less.

(i) A ship station must have a transmitter output power not exceeding 25 watts and an ERP not exceeding 18 watts. The transmitter must include the capability to reduce the carrier power to 2.5 watts with a front panel control. The maximum transmitter output power is permitted to be increased to 50 watts under the following conditions:

(1) Increases exceeding 25 watts are made only by radio command from the controlling coast stations; and

(2) The application for an equipment authorization demonstrates that the transmitter output power is 25 watts or less when external radio commands are not present.

(j) A ship installation with a transmitter output power exceeding 25 watts under the conditions of paragraph (i) of this section is exempted from the limitation of 18 watts ERP when operating in specific geographical areas identified in a plan for the use of higher power.

(k) Within the 1626.5–1646.5 MHz band the maximum e.i.r.p by a ship earth station in any direction in the horizontal plane or in the direction of the space station must not exceed +40 dB relative to one watt in any 4 kHz band in the main beam, except upon a satisfactory showing of need for greater power, in which case a maximum of +55 dB relative to one watt may be authorized.

(l) For operational fixed stations using frequencies in the 72–76 MHz band and for other classes of stations operating above 162.025 MHz, the transmitter power must be specified in the station authorization. Frequencies in the 72–76 MHz band are listed in §80.381. The operational requirements for 72–76 MHz are contained in subpart L of this part.

(m) For radiodetermination transmitters using A1D, A2D, F1D, F2D, G1D and G2D emissions on 154.585 MHz, 159.480 MHz, 160.725 MHz, 160.785 MHz, 454.000 MHz and 459.000 MHz the mean output power of the unmodulated carrier must not exceed 25 watts.

(n) For radiodetermination stations operating above 2400 MHz the output power must be as follows:

(1) For radar stations that use F3N emission the mean output power must not exceed 200 milliwatts;

(2) For search and rescue stations the output power must be at least 400 milliwatts peak e.i.r.p.

(3) For all other transponder stations the output power must not exceed 20 watts peak e.i.r.p. Licensees of non-selectable transponder coast stations operating in the 2920–3100 MHz and 9320–9500 MHz bands must notify in writing the USCG District Commander of any incremental increase of their station's output power above 5 watts peak e.i.r.p.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 7419, Mar. 11, 1987; 52 FR 35244, Sept. 18, 1987; 54 FR 40058, Sept. 29, 1989; 54 FR 49994, Dec. 4, 1989; 56 FR 3783, Jan. 31, 1991; 59 FR 35269, July 11, 1994]

### §80.217 Suppression of interference aboard ships.

(a) A voluntarily equipped ship station receiver must not cause harmful interference to any receiver required by statute or treaty.

(b) The electromagnetic field from receivers required by statute or treaty must not exceed the following value at a distance over sea water of one nautical mile from the receiver:

| Frequency of interfering emissions | Field intensity in microvolts per meter |
|---|---|
| Below 30 MHz | 0.1 |
| 30 to 100 MHz | .3 |
| 100 to 300 MHz | 1.0 |
| Over 300 MHz | 3.0 |

or

Deliver not more than the following amounts of power, to an artificial antenna having electrical characteristics equivalent to those of the average receiving antenna(s) use on shipboard:

| Frequency of interfering emissions | Power to artificial antenna in microwatts |
|---|---|
| Below 30 MHz | 400 |
| 30 to 100 MHz | 4,000 |
| 100 to 300 MHz | 40,000 |

| Frequency of interfering emissions | Power to artificial antenna in microwatts |
|---|---|
| Over 300 MHz | 400,000 |

### § 80.219 Special requirements for narrow-band direct-printing (NB–DP) equipment.

NB–DP and data transmission equipment installed in ship and coast stations before October 1, 1990, that operate on frequencies in the 4000–27500 kHz bands must conform to the technical requirements of CCIR Recommendations 476 or 625. Equipment installed on or after October 1, 1990, must conform to the technical requirements of CCIR Recommendation 625. Equipment installed before October 1, 1990, and built in accordance with CCIR Recommendation 476, however, may continue to be used.

[54 FR 49994, Dec. 4, 1989]

### § 80.221 Special requirements for automatically generating the radiotelephone alarm signal.

(a) Each device for automatically generating the radiotelephone alarm signal must be capable of being disabled to permit the immediate transmission of a distress call and message.

(b) The device must comply with the following requirements:

(1) The frequency tolerance of each tone must be ±1.5 percent;

(2) The duration tolerance of each tone must be ±50 milliseconds;

(3) The interval between successive tones must not exceed 50 milliseconds; and

(4) The amplitude ratio of the tones must be flat within 1.6 dB.

(c) Devices installed on or after January 1, 1983, must comply with the following requirements:

(1) The frequency tolerance of each tone must be ±1.5 percent;

(2) The duration tolerance of each tone must be ±10 milliseconds;

(3) The interval between successive tones must not exceed 4 milliseconds;

(4) The amplitude ratio of the tones must be flat within 1.6 dB;

(5) The output of the device must be sufficient to modulate the associated transmitter for H2B emission to at least 70 percent, and for J2B emission to within 3 dB of the rated peak envelope power;

(6) Light from the device must not interfere with the safe navigation of the ship;

(7) After activation the device must automatically generate the radiotelephone alarm signal for not less than 30 seconds and not more than 60 seconds unless manually interrupted;

(8) After generating the radiotelephone alarm signal or after manual interruption the device must be immediately ready to repeat the signal;

(9) The transmitter must be automatically switched from the stand-by condition to the transmit condition at the start and return to the stand-by condition at the conclusion of the radiotelephone alarm signal.

(d) Any device used by a station to automatically generate the radiotelephone alarm signal must be type accepted by the Commission.

[51 FR 31213, Sept. 2, 1986, as amended at 54 FR 40059, Sept. 29, 1989]

### § 80.223 Special requirements for survival craft stations.

(a) Survival craft stations capable of transmitting on:

(1) 500 kHz must be able to operate with class A2A and A2B or H2A and H2B emissions;

(2) 2182 kHz must be able to operate with A2B and A3E or H2B and H3E and J2B and J3E emissions;

(3) 8364 kHz must be able to operate with class A2A or H2A emission; and

(4) 121.500 MHz must be able to operate with A3E or A3N emission.

(b) Survival craft stations must be able to receive the frequency and types of emission which the transmitter is capable of using. Where the transmitter frequency is 8364 kHz the receiver must be able to receive A1A, A2A and H2A emissions throughout the 8320–8745 kHz band.

(c) Survival craft transmitters operating on 500 kHz or on 8364 kHz must be able to be manually keyed. If provisions are made for automatically transmitting the radiotelegraph alarm signal or the radiotelegraph distress signal, such provisions must meet the requirements in subpart F of this part.

(d) Any EPIRB carried as part of a survival craft station must comply

with the specific technical and performance requirements for its class contained in subpart V of this chapter.

[51 FR 31213, Sept. 2, 1986, as amended at 53 FR 8905, Mar. 18, 1988; 53 FR 37308, Sept. 26, 1988; 56 FR 11516, Mar. 19, 1991]

### §80.225 Requirements for digital selective calling (DSC) equipment.

This section specifies the requirements for optional DSC equipment installed in ship and coast stations. Reference to any CCIR Recommendation in this section is to the most recent CCIR approved Recommendation that does not prevent the use of existing equipment.

(a) DSC equipment installed in coast and ship stations must be designed in accordance with CCIR Recommendation 493. Classes A, B, and Class C DSC equipment must not be used with the sensors referred to in §80.179(e)(2).

(b) Manufacturers of Class C DSC equipment to be used on United States vessels must affix a clearly discernible permanent plate or label visible from the operating controls containing the following:

Warning. This equipment is designed to generate a digital maritime distress and safety signal to facilitate search and rescue. To be effective as a safety device, this equipment must be used only within communication range of a shore-based VHF marine channel 70 distress and safety watch system. The range of the signal may vary but under normal conditions should be approximately 20 nautical miles.

(c) Selective calling equipment, other than that designed in accordance with CCIR Recommendation 493, is authorized as follows:

(1) Equipment used in conjunction with the Automated Maritime Telecommunications System (AMTS) in the band 216–220 MHz,

(2) Equipment used to perform a selective calling function during narrowband direct-printing (NB–DP) operations in accordance with CCIR Recommendation 476 or 625, and

(3) Equipment functioning under the provisions of §80.207(a) until at least three years after mandatory DSC requirements become effective.

[54 FR 10009, Mar. 9, 1989]

### §80.227 Special requirements for protection from RF radiation.

As part of the information provided with transmitters for ship earth stations, manufacturers of each such unit must include installation and operating instructions to help prevent human exposure to radiofrequency (RF) radiation in excess of the RF exposure guidelines specified in §1.1307(b) of the Commission's Rules.

[53 FR 28225, July 27, 1988]

## Subpart F—Equipment Authorization for Compulsory Ships

### §80.251 Scope.

(a) This subpart gives the general technical requirements for type acceptance of equipment used on compulsory ships. Such equipment includes radiotelegraph transmitters, radiotelegraph auto alarms, automatic-alarm-signal keying devices, survival craft radio equipment, watch receivers, and radar.

(b) The equipment described in this subpart must be type accepted.

(c) The term *transmitter* means the transmitter unit and all auxiliary equipment necessary to make this unit operate as a main or emergency transmitter in a ship station at sea. Each separate motor-generator, rectifier, or other unit required to convert the ship primary power to the phase, frequency, or voltage necessary to energize the transmitter unit is considered a component of the transmitter.

(d) *Average ship station antenna* means an actual antenna installed on board ship having a capacitance of 750 picofarads and an effective resistance of 4 ohms at a frequency of 500 kHz, or an artificial antenna having the same electrical characteristics.

### §80.253 Technical requirements for main transmitter.

(a) The following table gives the operating carrier frequency, emission, modulation and average ship station antenna power requirements for the main transmitter.

| Operating frequency (kHz) | Frequency tolerance | | Class of emission | Percentage modulation for amplitude modulation | Modulation frequency for amplitude modulation | Power into average ship station antenna |
|---|---|---|---|---|---|---|
| | Parts [1] in $10^6$ | Hz [2] | | | | |
| 500 kHz ..... | 1,000 | 20 | A2A and A2B or H2A and H2B. | Not less than 70; not more than 100. | At least 1 frequency between 300 and 1250 Hertz, except for transmittal installed after July 1, 1951, at least 1 frequency between 450 and 1250 Hertz. | Not less than 200 watts. |
| Do ..... | 1,000 | 20 | A1A or J2A .... | ..... | ..... | Not less than 160 watts. |
| 410 and 2 working frequencies in the band 415 to 525. | 1,000 | 20 | A2A and A3N or H2A and H3N. | Not less than 70; not more than 100. | At least 1 frequency between 300 and 1250 Hertz, except for transmitters installed after July 1, 1951, at least 1 frequency between 450 and 1250 Hertz. | Not less than 200 watts. |
| Do ..... | 1,000 | 20 | A1A and N0N or J2A and J3N. | ..... | ..... | Not less than 160 watts. |

[1] For equipment type accepted or type approved before November 30, 1977.
[2] For equipment type accepted or type approval after November 29, 1977.

(b) A main transmitter must operate at its required antenna power when adjusted to any required operating frequency and energized by the main power supply of the ship station or by an equivalent power supply.

(c) A main transmitter must be equipped to measure (1) antenna current, (2) transmitter power supply voltages, and (3) anode or collector current(s).

(d) The antenna power must be determined at the operating carrier frequency by the product of the antenna resistance and the square of the average antenna current, both measured at the same point in the antenna circuit at approximately ground potential.

(e) A main transmitter producing more than 250 watts output power must have the output power reduced to not more than 150 watts when used for telegraphy. In stations where a separate telegraph transmitter operable on the same frequencies as the main transmitter with an output power of less than 250 watts, is installed, the power reduction requirement does not apply. Such separate transmitters must not obtain power from the emergency power supply.

### § 80.255 Technical requirements for reserve transmitter.

(a) The following table describes the operating carrier frequency, emission, modulation and average ship station antenna power requirements for the reserve transmitter.

| Operating frequency (kHz) | Frequency tolerance | | Class of emission | Percentage modulation for amplitude modulation | Modulation for frequency for amplitude modulation | Power into an average ship station antenna |
|---|---|---|---|---|---|---|
| | Parts [1] in $10^6$ | Hz [2] | | | | |
| 500 ..... | [3] 1,000 | 20 | A2A and A2B or H2A and H2B. | Not less than 70; not more 100. | At least 1 frequency between 300 and 1250 Hertz except for transmitters installed after July 1, 1951, at least 1 frequency between 450 and 1250 Hertz. | Not less than 25 watts. |
| 410 and 1 working frequency in the band 415 to 525. | [3] 1,000 | 20 | A2A and A3N or H2A and H3N. | .....do ..... | .....do ..... | .....do |

[1] For equipment type accepted or type approved before November 30, 1977.
[2] For equipment type accepted or type approved after November 29, 1977.
[3] Except for reserve transmitters whose use is confined solely to safety communications. Such transmitters must maintain a frequency tolerance of 3000 parts in $10.^6$

(b) A reserve transmitter must operate at its required antenna power when adjusted to the operating frequency and energized by the reserve power supply of the ship station or by an equivalent power supply.

(c) A reserve transmitter must be equipped to measure antenna current.

(d) The antenna power must be determined at the operating carrier frequency by the product of the antenna resistance and the square of the average antenna current both measured at the same point in the antenna circuit at approximately gound potential.

**§80.257 Manufacturing requirements for radiotelegraph automatic alarm receiver (auto alarm).**

(a) The auto alarm must consist of:

(1) A radio receiver capable of receiving emissions of classes A1A, A1B, A2A, A2B, H2A, H2B, J2A, and J2B over the frequency range 496 through 504 kHz.

(i) The receiver must reject signals +106 dB above one microvolt at ±150 kHz from the center frequency and +88 dB above one microvolt at ±40 kHz from the center frequency.

(ii) The receiver must respond to signals from 100 microvolts to 1 volt on the center frequency. There must be less than 6 dB variation in sensitivity from 496 kHz through 504 kHz.

(2) A device capable of selecting the alarm signal specified under §80.259 (a) and (b).

(3) A minimum of 3 audible alarm units to meet the three location installation requirements of §80.259(g).

(4) A testing device to determine locally that the auto alarm system is operative.

(b) The auto alarm may be constructed in one or more units but must be independent of the ship's regular radio receiving apparatus.

(c) A telephone jack must be provided to permit reception by a telephone receiver.

(d) Tuning and timing controls must not be accessible from the exterior of the device.

(e) Once set into operation the audible alarms must continue to function until switches off in the principal radiotelegraph operating room.

(f) A nonlocking or momentary-throw switch must be provided to permit temporary disconnection of the audible alarm on the bridge and in the operator's quarters when the auto alarm system is being tested.

(g) A failure of the auto alarm power supply must activate the audible alarms.

(h) The auto alarm must operate within specifications throughout the temperature range 0–50 degrees Celsius at relative humidities as high as 95%.

(i) The auto alarm must be protected from excessive currents, power supply reversals and voltage variations which could cause damage to any component.

(j) The auto alarm must be capable of operating when subjected to vibrations having a frequency between 20 and 30 Hertz and an amplitude of 0.76 mm (0.03 inch) in a direction at an angle of 30 to 45 degrees with the base of the auto alarm.

[51 FR 31213, Sept. 2, 1986, as amended at 58 FR 44952, Aug. 25, 1993]

**§80.259 Technical requirements for radiotelegraph auto alarm receiver.**

(a) For type acceptance the auto alarm in the absence of interference must be capable of being operated by four consecutive dashes whose length may vary from 6.0 to 3.5 seconds and the intervening spaces vary between 1.5 seconds to 10 milliseconds. These types of auto alarms must not respond to dashes longer than 6.31 seconds or shorter than 3.33 seconds nor to intervening spaces longer than 1.58 seconds or shorter than 5 milliseconds except as follows:

(1) Non-digital types employing resistance-capacitance timing, type approved before October 1, 1969, and placed in service on or before January 1, 1985, must not respond to dashes longer than 7.40 seconds or shorter than 2.80 seconds, nor to space intervals longer than 1.80 seconds or shorter than 5 milliseconds.

(2) Digital types employing a stable clock as the basic timing device, type approved before May 1, 1968, and placed in service on or before December 1, 1975, may accept dashes whose lower limits extends down to 3.0 seconds.

(b) The auto alarm must operate with a signal of 100 microvolts RMS at 500 kHz applied to an artificial antenna

consisting of a 20 microhenry inductance, a 500 picofarad capacitor, and a 5 ohm resistor connected in series in the absence of any interference and without manual adjustment. It must be capable of operation under these conditions on the following classes of emission:

(1) A1B;

(2) A2B with a carrier modulated at any modulation percentage from 30 through 100 percent with any modulation frequency from 300 through 1350 Hertz; and

(3) H2B with a carrier keyed and emitted at any power level from 3 through 6 decibels below peak envelope power, with any modulation frequency from 300 through 1350 Hertz.

(c) The auto alarm must operate with signal levels up to 1 volt under normal operating conditions.

(d) The auto alarm warning device must not be activated by atmospherics or by any signal from the antenna other than the alarm signal.

(e) The auto alarms must respond to the alarm signal through non-continuous interference caused by atmospherics and powerful signals other than the alarm signal. In the presence of atmospherics or interfering signals, the auto alarm must automatically adjust itself within a reasonable time to the condition in which it can most readily distinguish the alarm signal.

(f) The auto alarm must respond without adjustment and with practically uniform sensitivity to signals over a band extending no less than 4 kHz on each side of the 500 kHz radiotelegraph frequency and with a minimum attenuation of:

5 dB at 495.0 kHz and 505.0 kHz
40 dB at 487.0 kHz and 513.0 kHz
80 dB at 475.0 kHz and 525.0 kHz

(g) When the auto alarm is activated it must sound continuously a warning in the radiotelegraph operating room, in the radio operator's cabin, and on the bridge.

(h) The auto alarm must include a 500 kHz signal generator and a keying device which automatically disconnects the auto alarm from the antenna when an alarm signal of 100 microvolts is applied to test the auto alarm.

**§ 80.261 Technical requirements for automatic-alarm-signal keying device.**

(a) The automatic-alarm-signal keying device may consist of one or more units.

(b) The device must be designed to activate the keying circuits of any transmitter approved by the Commission for use as a main or reserve transmitter.

(c) Timing-adjustment controls must not be accessible from the exterior of the device.

(d) The device must be able to repeatedly transmit the alarm signal. For this purpose the dashes transmitted must have a duration of 3.8 to 4.2 seconds, and spaces between each of the twelve dashes constituting a series must have a duration of 0.8 to 1.2 seconds. Spaces between each series of twelve dashes must have a duration of 0.8 second to one minute. This operation must be sustainable with power supply voltage variations of ±15%.

(e) A single control, protected to avoid accidental manipulation, must be provided for placing the device into full operation within 30 seconds. Once in operation, the device must be capable of continuous operation without attention for a least one hour.

(f) When the ''on-off'' control of the device is placed in the ''off'' position, the keying circuit to the radio transmitter(s) must be automatically opened.

(g) The automatic-alarm-signal keying device must be capable of operation from a power supply independent of ship power. It may operate from the radio station emergency power supply.

(h) Instructions for adjustment of the device and the correct indication of any instrument incorporated to reveal improper operation must be inscribed on a plate mounted on the device in a position to be easily read by the operator.

(i) The keying circuit must be capable of switching 0.75 amperes DC through a 32 ohms non-inductive resistance. If the automatic-alarm-signal keying device is also intended to be used with transmitters requiring a keying circuit capability of 2 amperes DC through a 115 ohms non-inductive

resistance, the keying circuit of the device must comply with this latter requirement.

(j) The automatic-alarm-signal keying device must operate within specifications throughout the temperature range 0–50 degrees Celsius at relative humidities as high as 95%.

(k) The automatic-alarm-signal keying device must be protected from excessive currents, power supply reversals and voltage variations which could cause damage to any component.

(l) The automatic-alarm-signal keying device must be capable of operating when subjected to vibrations having a frequency between 20 and 30 Hertz and an amplitude of 0.76 mm (0.03 inch) in a direction at an angle of 30 to 45 degrees with the base of the automatic-alarm-signal keying device.

[51 FR 31213, Sept. 2, 1986, as amended at 58 FR 44952, Aug. 25, 1993]

### §80.263 Common requirements for survival craft radio equipment.

In addition to the requirements set forth in §§80.265 and 80.267, survival craft radio equipment must comply with the following:

(a) The radio equipment must be operable without tools.

(b) Each equipment must be provided with an instruction manual covering the design, installation, operation, and maintenance of the equipment.

(c) Simple instructions for the operation of the equipment must be prominently and permanently attached to it. These instructions must include information about the erection of the antenna(s), and automatic and manual transmission of the international distress and alarm signals on 500 kHz.

(d) An artificial antenna for test purposes must be provided.

(e) The survival craft radio transmitter must meet the following:

(1) Must be pretuned to the required frequencies. The operating frequencies must be maintained within the prescribed tolerances under varying voltages, antenna circuit characteristics, and other normal conditions of adjustment, and shock or vibration. The frequency control circuit adjustments must not be readily available to the person using the transmitter;

(2) Antenna tuning controls must be provided on the operating panel. An initial adjustment of these controls must resonate the antenna circuit at each required operating radio frequency. Resonance must be maintained without further adjustment of the controls during a normal operating period of the transmitter;

(3) The front panel must contain controls for manual operation on 500 kHz, manual operation on 8364 kHz, and automatic operation alternately on these two frequencies. Not more than one manual switch adjustment must be necessary to transmit automatically. For manual radiotelegraphy the transmitter and receiver, including their controls, must be arranged so that they can be operated from the same operating position and the time necessary to change from transmission to recepition and vice versa must not exceed two seconds; and

(4) In automatic operation the radio must:

(i) On 500 kHz transmit the international radiotelegraph alarm signal followed by the international radiotelegraph distress signal, the latter to be transmitted in one or more separate groups, each group consisting of three separate distress signals;

(ii) On 8364 kHz transmit the international radiotelegraph distress signal in one or more separate groups, each group consisting of three separate distress signals; this group or these groups to be followed by a continuous long dash of not less than 30 seconds in duration;

(iii) Transmit the specified signals by automatically changing the operating frequency of the transmitter from 500 kHz to 8364 kHz and vice versa with a transfer time interval not to exceed one second;

(iv) Completely de-energize the receiver during operation of the transmitter;

(v) Be capable of testing the required automatic keying arrangement without the generation of radio frequency energy; and

(vi) For automatic transmission of the international radiotelegraph distress signal, not exceed 16 words per minute or be less than 8 words per minute. The alarm signal dashes must

have a duration within the limits of 3.8 to 4.2 seconds, and the spaces between each of the 12 dashes constituting a series must have a duration within the limits of 0.8 to 1.2 seconds.

(f) Survival craft radio receivers must meet the following requirements:

(1) The receiver must be capable of receiving A2A or H2A emission over the 492–508 kHz band without manual tuning and when manually tuned must be capable of receiving A1A and A2A or H2A and J2A emission on any frequency in the 8320–8745 kHz band;

(2) The selectivity of the receiver preceeding the final detector must be flat within 6 dB over the band 492 to 508 kHz;

(3) The audio frequency response of the receiver must be flat within 6 dB over the range of frequencies between 400 and 1400 Hertz; and

(4) The receiver must be equipped with only one manually operated volume control.

(g) The artificial antenna must meet the following requirements:

(1) Provide a reliable test load for the transmitter at the frequencies 500 kHz and 8364 kHz of approximately the same electrical characteristics as the single wire or collapsible rod antenna required by this section;

(2) Be housed in a single container and provided with terminals. If more than two terminals are provided on the artificial antenna, all the terminals must be labelled; and

(3) Be prominently labelled ''FOR TEST USE ONLY''.

### § 80.265 Requirements for survival craft portable radio equipment.

(a) Survival craft portable radio equipment must be provided as a single portable buoyant unit consisting of a transmitter, receiver including headphones, power supply, grounding system, antenna system and line for lowering the apparatus. Each totally enclosed lifeboat must comply with the additional equipment requirements specified in this section:

(1) The radio must float in sea water and withstand a drop into sea water in various positions from a height of 6 meters (20 feet), without requiring repair or adjustment other than normal antenna tuning. The operating controls, indicating devices and instruments, including the headphones, must be protected against physical damage and from prolonged exposure to the weather. The radio must withstand submersion in sea water so that no part is less than 5 centimeters (2 inches) below the surface of the water for two hours without leaking;

(2) The radio must be fitted with handles or grips. It must be carryable by either one or two persons;

(3) The radio must be designed to attach to a lifeboat thwart by lashing or other acceptable means;

(4) The radio, exclusive of the line for lowering, must not weigh more than 27 kilograms (60 pounds). A radio for use in a totally enclosed lifeboat must not weigh more than 18 kilograms (40 pounds);

(5) The line for lowering must consist of not less than 12 meters (40 feet) of 9 thread manila or sisal rope, or the equivalent thereof, which must be securely attached to the radio at all times;

(6) All removable components necessary for the proper operation of the radio must be attached to this equipment;

(7) Each radio must have a durable removable plate showing clearly the survival craft radio call sign in letters and digits and in characters of the Morse code; and

(8) The maximum overall dimensions of the radio to be used in totally enclosed lifeboats including accessories must not exceed 35 by 40 by 50 centimeters (14 by 16 by 20 inches).

(b)(1) Portable survival craft radio transmitters must meet the following requirements:

| Operating frequency (kHz) | Frequency tolerance | | Type of emission | Modulation percentage (average of modulation percentage of positive and negative peaks | Modulation frequency | Average power output into specified artificial antenna | Artificial antenna |
|---|---|---|---|---|---|---|---|
| | Parts[1] in $10^6$ | Hz[2] | | | | | |
| 500 | 5,000 | 20 | A2A and A2B or H2A and H2B. | Not less than 70 | Not less than 450 nor greater than 1350 Hertz. | Not less than 1.7 watts. | 10 ohm resistance, 75 picofarads capacitance. |
| 500 | 5,000 | 20 | do | do | do | Not less than 2 watts[3]. | 15 ohms resistance, 100 picofarads capacitance. |
| 8364 | 200 | 50 | A2A and A3N or H2A and H3N. | do | do | Not less than 4 watts. | 40 ohms resistance. |

[1] For equipment type accepted or type approved before November 30, 1977.
[2] For equipment type accepted or type approved after November 29, 1977.
[3] In the case of equipment type approved prior to May 26, 1965, the power output may be 1.7 watts into an artificial antenna of 10 ohms resistance and 75 picofarads capacitance.

(2) The transmitter must be equipped with a visual indicator or indicators such as neon tubes to show antenna circuit resonance. Failure of the indicator(s) must not keep the transmitter from operating.

(c) Portable survival craft receivers must meet the following requirements:

(1) The audio output must be one milliwatt with a signal to noise power ratio of at least 10 to 1, when the receiver is supplied through the following artificial antennas with the respective radio frequency signals:

| Operating frequency, (kHz) | Signal strength (microvolts) | Modulation factor | Modulation (Hz) | Artificial antenna |
|---|---|---|---|---|
| 500 | 25 | 0.3 | 400 | 10 ohms resistance and 100 picofarads capacitance.[1] |
| 8364 | 100 | 0.3 | 400 | 40 ohms resistance. |

[1] In the case of equipment type approved prior to May 26, 1965, the artificial antenna may be 10 ohms resistance and 75 picofarads capacitance.

(2) The noise power present in the output of the receiver when the receiver is adjusted for A2A or H2A emission on 500 kHz and 8364 kHz must be determined with an unmodulated input signal of the indicated strength.

(d) The power supply must meet the following requirements:

(1) The source of power must be a manually operated electric generator capable of energizing the survival craft radio installation. The mechanical power applied to the crank handle(s) or the propelling lever(s) of the generator driving mechanism must not exceed a maximum of 0.15 horsepower for any operation of the survival craft radio installation at any temperature of the generator and its associated driving mechanism between minus 30 degrees and plus 50 degrees Celsius. Under these conditions the speed of rotation of the crank handle(s) must not be greater than 70 revolutions per minute nor must the cycles of operation of the propelling lever(s) be greater than 70 cycles per minute. The voltages applied to the radio installation must not vary from their normal values more than 20 percent at any generator speed in excess of the normal operating speed which can be manually developed.

(e) The antenna system must consist of a single wire antenna with a collapsible mast or a collapsible rod antenna conforming to the following requirements:

(1) The single wire antenna must be at least 12 meters (40 feet) of at least No. 10 AWG insulated extra-flexible stranded copper and include a means for fastening the wire to the antenna supports, and means for making electrical connection to the transmitter;

(2) Each totally enclosed lifeboat must be provided with a collapsible rod antenna which operates in either a freestanding position or supported only

by a grommet in the canopy of the lifeboat. The antenna must be capable of being erected from within of the enclosure. Antennas for use in totally enclosed lifeboats must be type accepted.

(f) The grounding system must consist of either a conducting wire or plate to provide an efficient ground for the portable survival craft equipment. The conducting wire must consist of a length of not less than 6 meters (20 feet) of No. 10 AWG bare stranded copper or equivalent copper braid weighted at one end for immersion in the sea. The ground plate must consist of a bare plate or strips of corrosion resistant metal having a total area of at least .6 square meters (6.5 square feet) and must be located on the hull of the lifeboat below the waterline. The electrical connection to the grounding conductor or to the ground plate must be made from inside the lifeboat.

### § 80.267 Requirements for survival craft nonportable radio equipment.

(a)(1) The radio transmitter must meet the following requirements:

| Operating frequency (kHz) | Frequency tolerance | | Type of emission | Modulation percentages (average of modulation percentage of positive and negative peaks) | Modulation frequency | Average power output into specified artificial antenna | Artificial antenna |
|---|---|---|---|---|---|---|---|
| | Parts [1] in $10^6$ | HZ [2] | | | | | |
| 500 | 5,000 | 20 | A2A and A2B or H2A and H2B. | Not less than 70 | Not less than 450 nor greater than 1350 Hertz. | Not less than 30 watts. | 10 ohms resistance and 100 picofarads capacitance. |
| 8364 | 200 | 50 | A2A or H2A ldes. | .....do | .....do | Not less than 40 watts. | 40 ohms resistance. |

[1] For equipment type accepted or type approved before November 30, 1977.
[2] For equipment type accepted or type approved after November 29, 1977.

(2) The transmitter must have an antenna current meter.

(b) Survival craft non-portable receivers must meet the following requirements:

(1) The audio output must be one milliwatt at a signal to noise power ratio of at least 10 to 1, when the receiver is supplied through the following artificial antennas with the respective radio frequency signals:

| Operating frequency, (kHz) | Signal strength (microvolts) | Modulation factor | Modulation (Hz) | Artificial antenna |
|---|---|---|---|---|
| 500 | 200 | 0.3 | 400 | 15 ohms resistance and 100 picofarads capacitance. |
| 8364 | 1,000 | 0.3 | 400 | 40 ohms resistance. |

(2) When the receiver is adjusted for A2A or H2A emission on 500 kHz and 8364 kHz the noise power present in the output of the receiver must be determined with an unmodulated input signal of the indicated strength;

(3) The audio output of the receiver must be capable of at least 8 dB above one milliwatt at the rated loan impedance.

### § 80.269 Technical requirements for radiotelephone distress frequency watch receiver.

(a) The radiotelephone distress frequency watch receiver is comprised of a receiver, a loudspeaker and a radiotelephone auto alarm device.

(b) The radiotelephone distress frequency watch receiver must meet the following requirements:

(1) The receiver must be capable of being switched to 2182 kHz and of receiving signals of at least A2A, A2B, H2A and H2B emissions;

(2) The receiver sensitivity must provide a SINAD of 20 dB at the audio output when a 30 microvolt signal with A2A, A2B, H2A, or H2B emission modulated 30% at 400 Hz is applied to the receiver RF terminals;

(3) The audio output of the receiver must be at least 50 milliwatts at the rated load impedance;

(4) The receiver must be provided with an auto alarm device which mutes the receiver (silences the loudspeaker) unless the radiotelephone alarm signal or the signal preceeding a vital navigational warning is received. When the auto alarm is activated the receiver audio output level must be louder than the output level of the received speech signal. Additionally, the receiver must meet the following requirements:

(i) When the receiver is muted its audio output power must be less than 1 milliwatt;

(ii) If tone filters are used to process the 1300 Hz and 2200 Hz tones the tolerance of their center frequency must be ±1.5 percent of the alerting frequency. The response must be flat within 6 dB to ±3% of the center frequency of the filters; and

(iii) The receiver must not be unmuted by atmospherics or by strong signals other than the radiotelephone alarm and the vital navigational warning signal.

(5) The receiver must be unmuted within 4 to 6 seconds when a double sideband alarm signal modulated at 70% is applied at its input terminals at a level which produces a SINAD of 10 dB under the following conditions:

(i) For radiotelephone alarm the signal must be modulated sequentially by a 1300 ±20 Hz tone and a 2200 ±35 Hz tone. The duration of each tone must be 250 ±50 milliseconds and the period between each tone must not exceed 50 milliseconds; and

(ii) For navigational warning the signal must be modulated by a 2200 ±35 Hz tone and the modulated carrier must be turned ''on'' for 250 ±50 milliseconds and then ''off'' for 250 ±50 milliseconds.

(6) The receiver must not be unmuted when a double sideband signal of 70 dB above the receiver measured sensitivity, modulated at 70% by a 2200 ±35 Hz tone with the following durations is applied at its input terminals:

(i) ''On'' periods of less than 175 milliseconds or more than 325 milliseconds followed by ''off'' periods of any duration; and

(ii) ''Off'' periods of less than 175 milliseconds or more then 425 milliseconds followed by ''on'' periods of any duration.

(7) The controls listed below must be provided on the exterior of the equipment:

(i) On/off switch with a visual indication that the device is on;

(ii) Volume control to adjust the audio output;

(iii) Control for dimming any light on the equipment;

(iv) Control for switching the auto alarm in and out of operation; and

(v) Control to manually reset the auto alarm to muted condition.

(8) The receiver must operate within specifications throughout the temperature range 0–50 degrees Celsius at relative humidities as high as 95%.

(9) The receiver must be capable of operating when subjected to vibrations having a frequency between 20 and 30 Hertz and an amplitude of 0.76 mm (0.03 inch) in a direction at an angle of 30 to 45 degrees with the base of the auto alarm.

[51 FR 31213, Sept. 2, 1986, as amended at 58 FR 44952, Aug. 25, 1993]

### §80.271 Technical requirements for portable survival craft radiotelephone transceivers.

(a) Portable survival craft radiotelephone transceivers must comply with the following:

(1) The transceivers must receive and transmit either on 457.525 MHz or on 156.800 MHz;

(2) The receiver must comply with the requirements in part 15, subpart C of this chapter and must have a sensitivity of not more than 2 microvolts. The sensitivity requirement must be met using the receiver sensitivity measurement procedure specified in the Radio Technical Commission for Marine Services (RTCM) Special Committee No. 66 Report MMS–R2;

(3) The effective radiated power of the transmitter must be at least 0.1 watt;

(4) The transceivers must be battery powered and operate for at least four hours with a transmit to receive ratio of 1:9 with no significant adverse effect upon the performance of the device;

(5) The transceivers must have a permanently attached waterproof label with the statement ''Complies with the

FCC requirements for survival craft two-way radiotelephone equipment''; and

(6) The antenna must be permanently attached to the device or its removal must require the use of a special tool.

(b) Portable radiotelephone transceivers that are already type accepted may be used to satisfy the survival craft radiotelephone requirement until October 1, 1993, provided the device meets the technical requirements in paragraphs (a)(1) through (3) of this section.

(c) Survival craft radiotelephone equipment installed after October 1, 1988, must be type accepted to meet the requirements of this section.

(d) After October 1, 1993, all portable radiotelephone transceivers that are used to satisfy the survival craft radiotelephone requirement must have been type accepted to meet the requirements of this section.

(e) Portable radiotelephone transceivers which are type accepted to meet the requirements of this section must be identified by an appropriate note in the Commission's Radio Equipment List.

### § 80.273 Technical requirements for radar equipment.

The technical requirements for radar equipment are contained in § 80.825.

## Subpart G—Safety Watch Requirements and Procedures

COAST STATION SAFETY WATCHES

### § 80.301 Watch requirements.

(a) Each public coast station operating on telegraphy frequencies in the band 405–535 kHz must maintain a watch for classes A1A, A2B and H2B emissions by a licensed radiotelegraph operator on the frequency 500 kHz for three minutes twice each hour, beginning at x h.15 and x h.45 Coordinated Universal Time (UTC).

(b) Each public coast station licensed to operate in the band 1605–3500 kHz must monitor such frequency(s) as are used for working or, at the licensee's discretion, maintain a watch on 2182 kHz.

(c) Except for distress, urgency or safety messages, coast stations must not transmit on 2182 kHz during the silence periods for three minutes twice each hour beginning at x h.00 and x h.30 Coordinated Universal Time (UTC).

(d) Each public coast station must provide assistance for distress communications when requested by the Coast Guard.

### § 80.302 Notice of discontinuance, reduction, or impairment of service involving a distress watch.

(a) When changes occur in the operation of a public coast station which include discontinuance, reduction or suspension of a watch required to be maintained on 500 kHz, 2182 kHz, or 156.800 MHz, notification must be made by the licensee to the nearest district office of the U.S. Coast Guard as soon as practicable. The notification must include the estimated or known resumption time of the watch.

(b) [Reserved]

### § 80.303 Watch on 156.800 MHz (Channel 16).

(a) During its hours of operation, each coast station operating in the 156–162 MHz band and serving rivers, bays and inland lakes except the Great Lakes, must maintain a safety watch on the frequency 156.800 MHz except when transmitting on 156.800 MHz.

(b) A coast station may be exempted from compliance with the watch requirement when Federal, State or Local Government stations maintain a watch on 156.800 MHz over 95% of the coast station's service area. Requests for an exemption must include a chart showing the receiving service area of the inland water public coast station. The coordinates, to the nearest minute, and the receiving service area of the Government stations maintaining the continuous watch on 156.800 MHz must be indicated on the same chart. The service area of these stations must be calculated using criteria specified in subpart P of this part.

(c) If the government station(s) providing the 156.800 MHz watch over the service area of an exempt station temporarily discontinues that watch, the exempt coast station upon receiving notice of this condition must maintain the watch on 156.800 HMz during the discontinuance. Automated maritime

communications systems' compliance with this requirement is limited to the use of existing facilities.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35245, Sept. 18, 1987]

SHIP STATION SAFETY WATCHES

**§80.304 Watch requirement during silence periods.**

(a) Each ship station operating on telegraphy frequencies in the band 405–535 kHz, must maintain a watch on the frequency 500 kHz of three minutes twice each hour beginning at x h.15 and x h.45 Coordinated Universal Time (UTC) by a licensed radiotelegraph officer using either a loudspeaker or headphone.

(b) Each ship station operating on telephony on frequencies in the band 1605–3500 kHz must maintain a watch on the frequency 2182 kHz. This watch must be maintained at least twice each hour for 3 minutes commencing at x h.00 and x h.30 Coordinated Universal Time (UTC) using either a loudspeaker or headphone. Expect for distress, urgency or safety messages, ship stations must not transmit during the silence periods on 2182 kHz.

**§80.305 Watch requirements of the Communications Act and the Safety Convention.**

(a) Each ship of the United States which is equipped with a radiotelegraph station for compliance with part II of title III of the Communications Act or chapter IV of the Safety Convention must:

(1) Keep a continuous and efficient watch on 500 kHz by means of radio officers while being navigated in the open sea outside a harbor or port. In lieu thereof, on a cargo ship equipped with a radiotelegraph auto alarm in proper operating condition, an efficient watch on 500 kHz must be maintained by means of a radio officer for at least 8 hours per day in the aggregate, i.e., for at least one-third of each day or portion of each day that the vessel is navigated in the open sea outside of a harbor or port.

(2) Keep a continuous and efficient watch on the radiotelephone distress frequency 2182 kHz from the principal radio operating position or the room from which the vessel is normally steered while being navigated in the open sea outside a harbor or port. A radiotelephone distress frequency watch receiver having a loudspeaker and a radiotelephone auto alarm facility must be used to keep the continuous watch on 2182 kHz if such watch is kept from the room from which the vessel is normally steered. After a determination by the master that conditions are such that maintenance of the listening watch would interfere with the safe navigation of the ship, the watch may be maintained by the use of the radiotelephone auto alarm facility alone.

(3) Keep a continuous and efficient watch on the VHF distress frequency 156.800 MHz from the room from which the vessel is normally steered while in the open sea outside a harbor or port. The watch must be maintained by a designated member of the crew who may perform other duties, relating to the operation or navigation of the vessel, provided such other duties do not interfere with the effectiveness of the watch. Use of a properly adjusted squelch or brief interruptions due to other nearby VHF transmissions are not considered to adversely affect the continuity or efficiency of the required watch on the VHF distress frequency. This watch need not be maintained by vessels subject to the Bridge-to-Bridge Act and participating in a Vessel Traffic Services (VTS) system as required or recommended by the U.S. Coast Guard, when an efficient listening watch is maintained on both the bridge-to-bridge frequency and a separate assigned VTS frequency.

(b) Each cargo ship of the United States which is equipped with a radiotelephone station for compliance with part II of title III of the Communications Act or chapter IV of the Safety Convention must while being navigated outside of a harbor or port:

(1) Keep a continuous watch on 2182 kHz in the room from which the vessel is normally steered while at sea, whenever such station is not being used for authorized traffic. Such watch must be maintained by at least one officer or crewmember who may perform other duties relating to the operation or navigation of the vessel, provided such other duties do not interfere with the

watch. A radiotelephone watch receiver having a loudspeaker and a radiotelephone auto alarm must be used to keep the continuous watch on 2182 kHz. After a determination by the master that maintenance of the watch would interfere with the safe navigation of the ship, the watch may be maintained by use of the radiotelephone auto alarm facility alone.

(2) Keep a continuous watch on 156.800 MHz from the room from which the vessel is normally steered. The watch must be maintained by a crewmember who may perform other duties, relating to the operation or navigation of the vessel, provided such other duties do not interfere with the watch. Use of properly adjusted squelch of brief interruptions due to other nearby VHF transmissions are not considered to adversely affect the watch. This watch need not be maintained by vessels subject to the Bridge-to-Bridge Act and participating in a Vessel Traffic Services (VTS) system when a watch is maintained on both the bridge-to-bridge frequency and a VTS frequency.

(c) Each vessel of the United States transporting more than six passengers for hire, which is equipped with a radiotelephone station for compliance with part III of title III of the Communications Act must, while being navigated in the open sea or any tidewater within the jurisdiction of the United States adjacent or contiguous to the open sea, keep a continuous watch on 2182 kHz while the vessel is beyond VHF communication range of the nearest VHF coast station, whenever the radiotelephone station is not being used for authorized traffic. A VHF watch must be kept on 156.800 MHz whenever such station is not being used for authorized traffic. The VHF watch must be maintained at the vessel's steering station actually in use by the qualified operator as defined by § 80.157 or by a crewmember who may perform other duties relating to the operation or navigation of the vessel, provided such other duties do not interfere with the watch. The use of a properly adjusted squelch is not considered to adversely affect the watch. The VHF watch need not be maintained by vessels subject to the Bridge-to-Bridge Act and participating in a Vessel Traffic Services (VTS) system when an efficient listening watch is maintained on both the bridge-to-bridge frequency and a VTS frequency.

### § 80.306 Provisions governing the radiotelegraph watch.

(a) The radio officer must use the main or reserve receiver, and either headphones or a loudspeaker to keep the watch on 500 kHz.

(b) During the watch, the radio officer may temporarily interrupt the required watch on 500 kHz while transmitting or receiving signals or messages to or from a station but only if it is not feasible to simultaneously handle such traffic and listen on 500 kHz by split headphones or a loudspeaker. The watch on 500 kHz must, however, without exception be maintained during the silence periods.

(c) During this watch, on vessels subject to the Communications Act and the Safety Convention on international voyages, the radio officer may discontinue listening when handling traffic on other frequencies or performing other essential radio duties, but only if it is impracticable to listen by split headphones or loudspeaker. The watch must always be maintained by a radio officer using headphones or loudspeaker during the silence periods. The term ''essential radio duties'' in this rule includes urgent repairs of radiocommunication equipment used for safety or radio navigational equipment by order of the master.

(d) When authorized by the master, the radio officer may perform maintenance repair of communications, navigation or other electronic equipment outside of the radiotelegraph room, provided that the listening watch on 500 kHz can be maintained by headphones, loudspeakers, portable receivers, or other suitable means. The watch on 500 kHz must be maintained in the radiotelegraph room during the silence period.

### § 80.307 Compulsory use of radiotelegraph auto alarm.

The radiotelegraph auto alarm required on a cargo ship subject to the radiotelegraph provisions of part II of title III of the Communications Act or

the Safety Convention must be in operation, connected to the main antenna and adjusted for optimum efficiency at all times while the ship is being navigated in the open sea when a radio officer is not listening on the frequency 500 kHz, except under the circumstances as set forth in §80.306(b).

### §80.308 Watch required by the Great Lakes Radio Agreement.

(a) Each ship of the United States that is equipped with a radiotelephone station for compliance with the Great Lakes Radio Agreement must when underway keep a watch on:

(1) 156.800 MHz on board a vessel 20 meters (65 feet) and over in length, a vessel engaged in towing (See §80.951(b)), or a vessel carrying more than 6 passengers for hire. This watch must be maintained whenever the station is not being used for authorized traffic. However, a watch on 156.800 MHz need not be maintained by a vessel maintaining a watch on the bridge-to-bridge frequency 156.650 MHz *and* participating in a Vessel Traffic Services (VTS) system and maintaining a watch on the specified VTS frequency.

(2) 156.650 MHz on board a vessel 38 meters (124 feet) and over in length, a vessel engaged in towing (See §80.951(b)), or a vessel carrying more than six passengers for hire. This watch must be maintained continuously and effectively. Sequential monitoring is not sufficient. Portable VHF equipment may be used to meet this requirement. Vessels are exempted from this requirement while transiting the St. Lawrence Seaway and complying with the Joint Regulations of the St. Lawrence Seaway Authority and St. Lawrence Seaway Development Corporation between the lower exit of St. Lambert Lock at Montreal and Crossover Island, New York and in the Welland Canal and approaches between Calling in Point No. 15 and No. 16.

(b) The watch must be maintained by the master, or person designated by the master, who may perform other duties provided they do not interfere with the effectiveness of the watch.

[53 FR 17052, May 13, 1988]

### §80.309 Watch required by the Bridge-to-Bridge Act.

In addition to the watch requirement contained in §80.148, all vessels subject to the Bridge-to-Bridge Act must keep a watch on the designated navigational frequency. The watch must be maintained by the master or person in charge of the vessel or the person designated by the master or person in charge to pilot or direct the movement of the vessel. The person standing watch may perform other duties provided such other duties do not interfere with the watch.

[51 FR 31213, Sept. 2, 1986, as amended at 57 FR 61012, Dec. 23, 1992]

### §80.310 Watch required by voluntary vessels.

Voluntary vessels not equipped with DSC must maintain a watch on 156.800 MHz (channel 16) whenever the radio is operating and is not being used to communicate. Noncommercial vessels, such as recreational boats, may alternatively maintain a watch on 156.450 MHz (channel 9) for call and reply purposes.

[57 FR 19552, May 7, 1992]

## DISTRESS, ALARM, URGENCY AND SAFETY PROCEDURES

### §80.311 Authority for distress transmission.

A mobile station in distress may use any means at its disposal to attract attention, make known its position, and obtain help. A distress call and message, however, must be transmitted only on the authority of the master or person responsible for the mobile station. No person shall knowingly transmit, or cause to be transmitted, any false or fraudulent signal of distress or related communication.

### §80.312 Priority of distress transmissions.

The distress call has absolute priority over all other transmissions. All stations which hear it must immediately cease any transmission capable of interfering with the distress traffic

and must continue to listen on the frequency used for the emission of the distress call. This call must not be addressed to a particular station. Acknowledgement of receipt must not be given before the distress message which follows it is sent.

### § 80.313 Frequencies for use in distress.

The frequencies specified in the bands below are for use by mobile stations in distress. The conventional emission is shown. When a ship station cannot transmit on the designated frequency or the conventional emission, it may use any available frequency or emission. Frequencies for distress and safety calling using digital selective calling techniques are listed in § 80.359(b). Distress and safety NB-DP frequencies are indicated by footnote 2 in § 80.361(b).

| Frequency band | Emission | Carrier frequency |
|---|---|---|
| 405–535 kHz | A2B | 500 kHz. |
| 1605–3500 kHz | J3E | 2182 kHz. |
| 4000–27, 5000 kHz | A2B | 8364 kHz. |
| 118–136 MHz | A3E | 121.500 MHz. |
| 156–162 MHz | F3E, PON | 156.800 MHz 156.750 MHz. |
| 243 MHz | A3N | 243.000 MHz. |

The maximum transmitter power obtainable may be used.

[51 FR 31213, Sept. 2, 1986; 51 FR 34984, Oct. 1, 1986]

### § 80.314 Distress signals.

(a) The international radiotelegraphy distress signal consists of the group ''three dots, three dashes, three dots'' (... ---...), symbolized herein by SOS, transmitted as a single signal in which the dashes are slightly prolonged so as to be distinguished clearly from the dots.

(b) The international radiotelephone distress signal consists of the word MAYDAY, pronounced as the French expression ''m'aider''.

(c) These distress signals indicate that a mobile station is threatened by grave and imminent danger and requests immediate assistance.

### § 80.315 Distress calls.

(a) The radiotelegraph distress call consists of:

(1) The distress signal SOS, sent three times;

(2) The word DE;

(3) The call sign of the mobile station in distress, sent three times.

(b) The radiotelephone distress call consists of:

(1) The distress signal MAYDAY spoken three times;

(2) The words THIS IS;

(3) The call sign (or name, if no call sign assigned) of the mobile station in distress, spoken three times.

### § 80.316 Distress messages.

(a) The radiotelegraph distress message consists of:

(1) The distress signal SOS;

(2) The name of the mobile station in distress;

(3) Particulars of its position;

(4) The nature of the distress;

(5) The kind of assistance desired;

(6) Any other information which might facilitate rescue.

(b) The radiotelephone distress message consists of:

(1) The distress signal MAYDAY;

(2) The name of the mobile station in distress;

(3) Particulars of its position;

(4) The nature of the distress;

(5) The kind of assistance desired;

(6) Any other information which might facilitate rescue, for example, the length, color, and type of vessel, number of persons on board.

(c) As a general rule, a ship must signal its position in latitude and longitude, using figures for the degrees and minutes, together with one of the words NORTH or SOUTH and one of the words EAST or WEST. In radiotelegraphy, the signal .-.-.- must be used to separate the degrees from the minutes. When practicable, the true bearing and distance in nautical miles from a known geographical position may be given.

### § 80.317 Radiotelegraph and radiotelephone alarm signals.

(a) The international radiotelegraph alarm signal consists of a series of twelve dashes sent in one minute, the duration of each dash being four seconds and the duration of the interval between consecutive dashes one second. The purpose of this special signal is the

actuation of automatic devices giving the alarm to attract the attention of the operator when there is no listening watch on the distress frequency.

(b) The international radiotelephone alarm signal consists of two substantially sinusoidal audio frequency tones transmitted alternately. One tone must have a frequency of 2200 Hertz and the other a frequency of 1300 Hertz, the duration of each tone being 250 milliseconds. When generated by automatic means, the radiotelephone alarm signal must be transmitted continuously for a period of at least 30 seconds, but not exceeding one minute; when generated by other means, the signal must be transmitted as continuously as practicable over a period of approximately one minute. The purpose of this special signal is to attract the attention of the person on watch or to actuate automatic devices giving the alarm.

### §80.318 Use of alarm signals.

(a) The radiotelegraph or radiotelephone alarm signal, as appropriate, must only be used to announce:

(1) That a distress call or message is about to follow;

(2) The transmission of an urgent cyclone warning. In this case the alarm signal may only be used by coast stations authorized by the Commission to do so; or

(3) The loss of a person or persons overboard. In this case the alarm signal may only be used when the assistance of other ships is required and cannot be satisfactorily obtained by the use of the urgency signal only, but the alarm signal must not be repeated by other stations. The message must be preceded by the urgency signal.

(b) In cases described in paragraphs (a)(2) and (3) of this section, the transmission of the warning or message by radiotelegraphy must not begin until two minutes after the end of the radiotelegraph alarm signal.

### §80.319 Radiotelegraph distress call and message transmission procedure.

(a) The radiotelegraph distress procedure consists of the following six steps: however, when time is vital, the first and second steps may be omitted. These two steps of the distress procedure may also be omitted in circumstances when transmission of the alarm signal is considered unnecessary:

(1) The radiotelegraph alarm signal;

(2) The distress call and an interval of two minutes;

(3) The distress call;

(4) The distress message;

(5) Two dashes of ten to fifteen seconds each;

(6) The call sign of the mobile station in distress.

(b) The radiotelegraph distress transmissions must be sent by means of the international Morse code at a speed not exceeding 16 words per minute nor less than 8 words per minute.

(c) The distress message, preceded by the distress call, must be repeated at intervals, especially during the 500 kHz international silence periods, until an answer is received. The radiotelegraph alarm signal may also be repeated, if necessary.

(d) The transmissions under paragraphs (a)(5) and (6) of this section, which are to permit direction finding stations to determine the position of the station in distress, may be repeated at frequent intervals if necessary.

(e) When the mobile station in distress receives no answer to a distress message transmitted on the distress frequency, the message may be repeated on any other available frequency on which attention might be attracted.

### §80.320 Radiotelephone distress call and message transmission procedure.

(a) The radiotelephone distress procedure consists of:

(1) The radiotelephone alarm signal (whenever possible);

(2) The distress call;

(3) The distress message.

(b) Radiotelephone distress transmissions must be made slowly and distinctly, each word being clearly pronounced to facilitate transcription.

(c) After the transmission by radiotelephony of its distress message, the mobile station may be requested to transmit suitable signals followed by its call sign or name, to permit direction-finding stations to determine its

position. This request may be repeated at frequent intervals if necessary.

(d) The distress message, preceded by the distress call, must be repeated at intervals until an answer is received. This repetition must be preceded by the radiotelephone alarm signal whenever possible.

(e) When the mobile station in distress receives no answer to a distress message transmitted on the distress frequency, the message may be repeated on any other available frequency on which attention might be attracted.

### § 80.321 Acknowledgement of receipt of distress message.

(a) Stations of the maritime mobile service which receive a distress message from a mobile station which is beyond any possible doubt in their vicinity must immediately acknowledge receipt. However, in areas where reliable communication with one or more coast stations is practicable, ship stations may defer this acknowledgement for a short interval so that a coast station may acknowledge receipt.

(b) Stations of the maritime mobile service which receive a distress message from a mobile station which beyond any possible doubt is not in their vicinity, must allow a short interval of time to elapse before acknowledging receipt of the message in order to permit stations nearer to the mobile station in distress to acknowledge receipt without interference.

### § 80.322 Form of acknowledgement.

(a) The acknowledgement of receipt of a radiotelegraph distress message is transmitted in the following form:

(1) The distress signal SOS;

(2) The call sign of the station sending the distress message, sent three times;

(3) The word DE;

(4) The call sign of the station acknowledging receipt, sent three times;

(5) The group RRR;

(6) The message signal SOS.

(b) The acknowledgement of receipt of a radiotelephone distress message is transmitted in the following form:

(1) The distress signal MAYDAY;

(2) The call sign or other identification of the station sending the distress message, spoken three times;

(3) The words THIS IS;

(4) The call sign or other identification of the station acknowledging receipt, spoken three times;

(5) The word RECEIVED;

(6) The distress signal MAYDAY.

### § 80.323 Information furnished by an acknowledging station.

(a) Every mobile station which acknowledges receipt of a distress message must on the order of the master or person responsible for the ship, aircraft, or other vehicle carrying such mobile station, transmit as soon as possible the following information in the order shown:

(1) Its identifier;

(2) Its position;

(3) The speed at which it is proceeding towards, and the approximate time it will take to reach the mobile station in distress.

(b) Before sending this message, the station must ensure that it will not interfere with the emissions of other stations better situated to render immediate assistance to the station in distress.

### § 80.324 Transmission of distress message by station not itself in distress.

(a) A mobile station or a land station which learns that a mobile station is in distress must transmit a distress message in any of the following cases:

(1) When the station in distress cannot transmit the distress message.

(2) When the master or person responsible for the ship, aircraft, or other vehicle not in distress, or for the land station, believes that further help is necessary.

(3) When, although not in a position to assist, it has heard a distress message which has not been acknowledged. When a mobile station transmits such a distress message, it must notify the authorities who may be able to assist.

(b) Transmission must be made on the international distress frequencies or on any other available frequency on which attention might be attracted.

(c) Transmission of the distress message must always be preceded by the call indicated below, which must itself

be preceded whenever possible by the radiotelegraph or radiotelephone alarm signal. This call consists of:

(1) When radiotelegraphy is used:

(i) The signal DDD SOS SOS SOS DDD:

(ii) The word DE;

(iii) The call sign of the transmitting station, sent three times.

(2) When radiotelephony is used:

(i) The signal MAYDAY RELAY, spoken three times;

(ii) The words THIS IS;

(iii) The call sign or other identification of the transmitting station, spoken three times.

(d) When the radiotelegraph alarm signal is used, an interval of two minutes must be allowed, whenever this is considered necessary, before the transmission of the call mentioned in paragraph (c)(1) of this section.

**§80.325 Control of distress traffic.**

(a) Distress traffic consists of all messages relating to the immediate assistance required by the mobile station in distress. In distress traffic, the distress signal must be sent before the call and at the beginning of the preamble of any radiotelegram.

(b) The control of distress traffic is the responsibility of the mobile station in distress or of the station which has sent the distress message. These stations may delegate the control of the distress traffic to another station.

(c) The station in distress or the station in control of distress traffic may impose silence either on all stations of the mobile service in the area or on any station which interferes with the distress traffic. It must address these instructions ''to all stations'' or to one station only, according to circumstances. In either case, it must use one of the following signals which are reserved for use by the mobile station in distress and for the station controlling distress traffic:

(1) In radiotelegraphy, the abbreviation QRT, followed by the distress signal SOS.

(2) In radiotelephony, the signal SEELONCE MAYDAY.

(d) If essential, any station of the mobile service near the ship, aircraft, or other vehicle in distress may also impose silence. It must use for this purpose:

(1) In radiotelegraphy, the abbreviation QRT, followed by the word DISTRESS and its own call sign;

(2) In radiotelephony, the word SEELONCE, followed by the word DISTRESS and its own call sign or other identification.

**§80.326 Notification of resumption of normal working.**

(a) When distress traffic has ceased, or when complete silence is no longer necessary on a frequency which has been used for distress traffic, the station which has controlled this traffic must transmit on that frequency a message addressed ''to all stations'' indicating that normal working may be resumed.

(1) In radiotelegraphy, this message consists of:

(i) The distress signal SOS;

(ii) The call ''to all stations'' (CQ), sent three times;

(iii) The word DE;

(iv) The call sign of the station sending the message;

(v) The time of handing in the message;

(vi) The name and call sign of the mobile station which was in distress;

(vii) The service abbreviation QUM.

(2) In radiotelephony, this message consists of:

(i) The distress signal MAYDAY;

(ii) The call ''Hello all stations'', spoken three times;

(iii) The words THIS IS;

(iv) The call sign or other identification of the station sending the message;

(v) The time of handing in of the message;

(vi) The name and call sign of the mobile station which was in distress;

(vii) The words SEELONCE FEENEE OR PRU-DONCE.

(b) Until they receive the foregoing message indicating that normal or limited working may be resumed, all stations which are aware of the distress traffic, and which are not taking part in it, are forbidden to transmit on the frequencies on which the distress traffic is taking place.

**§ 80.327 Urgency signals.**

(a) The urgency signal indicates that the calling station has a very urgent message to transmit concerning the safety of a ship, aircraft, or other vehicle, or the safety of a person. The urgency signal must be sent only on the authority of the master or person responsible for the mobile station.

(b) In radiotelegraphy, the urgency signal consists of three repetitions of the group XXX, sent with the individual letters of each group, and the successive groups clearly separated from each other. It must be transmitted before the call.

(c) In radiotelephony, the urgency signal consists of three oral repetitions of the group of words PAN PAN transmitted before the call.

(d) The urgency signal has priority over all other communications except distress. All mobile and land stations which hear it must not interfere with the transmission of the message which follows the urgency signal.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35245, Sept. 18, 1987]

**§ 80.328 Urgency message.**

(a) The urgency signal and call, and the message following it, must be sent on one of the international distress frequencies. Stations which cannot transmit on a distress frequency may use any other available frequency on which attention might be attracted.

(b) Mobile stations which hear the urgency signal must continue to listen for at least three minutes. At the end of this period, if no urgency message has been heard, they may resume their normal service. However, land and mobile stations which are in communication on frequencies other than those used for the transmission of the urgency signal and of the call which follows it may continue their normal work without interruption provided the urgency message is not addressed ''to all stations''.

(c) When the urgency signal has been sent before transmitting a message ''to all stations'' which calls for action by the stations receiving the message, the station responsible for its transmission must cancel it as soon as it knows that action is no longer necessary. This message of cancellation must likewise be addressed ''to all stations''.

**§ 80.329 Safety signals.**

(a) The safety signal indicates that the station is about to transmit a message concerning the safety of navigation or giving important meteorological warnings.

(b) In radiotelegraphy, the safety signal consists of three repetitions of the group TTT, sent with the individual letters of each group, and the successive groups clearly separated from each other. It must be sent before the call.

(c) In radiotelephony, the safety signal consists of the word SECURITE, pronounced as in French, spoken three times and transmitted before the call.

(d) The safety signal and call must be sent on one of the international distress frequencies (500 kHz or 8364 kHz radiotelegraph; 2182 kHz or 156.8 MHz radiotelephone). Stations which cannot transmit on a distress frequency may use any other available frequency on which attention might be attracted.

**§ 80.330 Safety message.**

(a) The safety signal and call must be followed by the safety message. Where practicable, the safety message should be sent on a working frequency, and a suitable announcement to this effect must be made at the end of the call.

(b) Except for the cases mentioned in paragraph (c) of this section, the safety signal when sent on the frequency 500 kHz must be transmitted toward the end of the first available silence period; the safety message must be transmitted immediately after the silence period.

(c) Messages about meteorological warnings, of cyclones, dangerous ice, dangerous wrecks, or any other imminent danger to marine navigation must be preceded by the safety signal.

(d) Stations hearing the safety signal must not make any transmission likely to interfere with the message.

**§ 80.331 Bridge-to-bridge communication procedure.**

(a) Vessels subject to the Bridge-to-Bridge Act transmitting on the designated navigational frequency must conduct communications in a format similar to those given below:

(1) This is the (name of vessel). My position is (give readily identifiable position, course and speed) about to (describe contemplated action). Out.

(2) Vessel off (give a readily identifiable position). This is (name of vessel) off (give a readily identifiable position). I plan to (give proposed course of action). Over.

(3) (Coast station), this is (vessel's name) off (give readily identifiable position). I plan to (give proposed course of action). Over.

(b) Vessels acknowledging receipt must answer ''(Name of vessel calling). This is (Name of vessel answering). Received your call,'' and follow with an indication of their intentions. Communications must terminate when each ship is satisfied that the other no longer poses a threat to its safety and is ended with ''Out''.

(c) Use of power greater than 1 watt in a bridge-to-bridge station shall be limited to the following three situations:

(1) Emergency.

(2) Failure of the vessel being called to respond to a second call at low power.

(3) A broadcast call as in paragraph (a)(1) of this section in a blind situation, e.g., rounding a bend in a river.

### §80.332 Equipment to aid search and rescue operations.

(a) Survival craft stations may transmit distress, urgency and safety signals, calls and messages.

(b) EPIRB's may transmit only in accordance with the requirements of subparts V and X of this part.

### §80.333 Stations in the maritime mobile-satellite service.

The provisions of §§80.311 and 80.324 apply to the operations of ship earth stations in the maritime mobile-satellite service.

## Subpart H—Frequencies

RADIOTELEGRAPHY

### §80.351 Scope.

The following sections describe the carrier frequencies and general uses of radiotelegraphy with respect to the following:

—Distress, urgency, safety, call and reply.
—Working.
—Digital selective calling (DSC).
—Narrow-band direct-printing (NB–DP).
—Facsimile.

### §80.353 General uses—radiotelegraphy.

(a) Unless otherwise indicated radiotelegraphy may be used by ship and public coast stations only.

(b) The signal code for Morse telegraphy must be the international Morse code signals specified in the Telegraph Regulations annexed to the International Telecommunication Convention.

(c) To facilitate communications, ship stations transmitting by means of radiotelegraphy must use the service abbreviations (''Q'' signals) listed in Appendix 14 to the ITU Radio Regulations whenever practicable.

(d) In order to reduce interference stations must attempt to select calling frequencies which provide the most favorable propagational characteristics for effecting reliable communications.

(e) Coast stations may apply to use for telegraphy communications any additional coast station frequencies that are allocated for such communications in the 10–27500 kHz band that are not listed in this part. See the Table of Frequency allocations in §2.106 of this chapter. The use of such frequencies will be authorized initially with a six month provisional period.

(f) Radiotelegraphy stations communicating with a Government station may transmit on a Government frequency when authorized to do so by the Government station or agency if the emission, bandwidth and frequency tolerance of the non-Government station are within the same limits as the Government station.

### §80.355 Distress, urgency, safety, call and reply Morse code frequencies.

This section describes the distress, urgency, safety, call and reply carrier frequencies assignable to stations for Morse code radiotelegraphy.

(a) *Frequencies in the 100–160 kHz band.* The international calling frequency in the 100–160 kHz band is 143 kHz using A1A or J2A emission. When a ship station operating in the 100–160 kHz band desires to communicate with

a coast station, it must call on the frequency 143 kHz unless the International List of Coast Stations provides otherwise. Coast stations must reply on their normal working frequency in this band. Only individual calls, replies to such calls, and transmission of signals preparatory to traffic may be transmitted on 143 kHz.

(b) *Frequencies in the 405–535 kHz band.* (1) The international distress, urgency, safety, call and reply frequency used by ship and coast stations operating in the 405–525 kHz band is 500 kHz. A2A and A2B or H2A and H2B emissions are preferred for distress calls, distress traffic and for urgency and safety messages. For call and reply messages A1A or J2A emission must be used. In order to facilitate distress communications routine correspondence tranmissions on 500 kHz must be reduced to a minimum.

(2) In Region 2 and areas of heavy traffic ship stations must request coast stations to listen on the ship station's working frequencies.

(3) In areas where 500 kHz is used for distress a ship or coast station must use the supplementary calling frequency 512 kHz for routine calling and normally request a reply on its working frequency. The called station may reply on 512 kHz when requested to do so by the calling station.

(c) *Frequencies in the 2000–27500 kHz band*—(1) *Survival craft frequencies:* Survival craft operating on 8364 kHz must use A2A or H2A emission to establish communications related to search and rescue operations.

(2) *Ship station frequencies.* The following table describes the calling frequencies in the 4000–27500 kHz band which are available for use by authorized ship stations equipped with crystal controlled oscillators for A1A or J2A radiotelegraphy. There are two series of frequencies for worldwide use and two series of frequencies for each geographic region. Ship stations with synthesized transmitters may operate on every full 100 Hz increment in the 0.5 kHz channel for the frequencies listed, except for 100 Hz above and below those designated for worldwide use. During normal business hours when not communicating on other frequencies, all U.S. coast radiotelegraph stations must monitor the worldwide frequencies and the initial calling frequencies for the region in which it is located. The specific frequencies which must be monitored by a coast station will vary with propagation conditions. The calling frequencies which are routinely monitored by specific coast stations can be determined by reference to the ITU publication entitled ''List of Coast Stations''. Initial calls by ship stations must be made on the appropriate initial calling frequency first. Calls on the worldwide frequencies may be made only after calls on the appropriate initial calling frequency are unsuccessful.

SHIP MORSE CALLING FREQUENCIES (KHZ)

| Region: | ITU | | | | | | | ITU | |
|---|---|---|---|---|---|---|---|---|---|
| Worldwide | 3 | 4184.0 | 6276.0 | 8368.0 | 12552.0 | 16736.0 | 22280.5 | C | 25172.0 |
| | 4 | 4184.5 | 6276.5 | 8369.0 | 12553.5 | 16738.0 | 22281.0 | C | 25172.0 |
| Atlantic: | | | | | | | | | |
| Initial | 1 | 4182.0 | 6277.0 | 8366.0 | 12550.0 | 16734.0 | 22279.5 | A | 25171.5 |
| Alternate | 2 | 4182.5 | 6277.5 | 8366.5 | 12550.5 | 16734.5 | 22280.0 | A | 25171.5 |
| Caribbean: | | | | | | | | | |
| Initial | 1 | 4182.0 | 6277.0 | 8366.0 | 12550.0 | 16734.0 | 22279.5 | A | 25171.5 |
| Alternate | 2 | 4182.5 | 6277.5 | 8366.5 | 12550.5 | 16734.5 | 22280.0 | A | 25171.5 |
| Gulf-Mexico: | | | | | | | | | |
| Initial | 5 | 4183.0 | 6278.0 | 8367.0 | 12551.0 | 16735.0 | 22281.5 | A | 25171.5 |
| Alternate | 6 | 4183.5 | 6278.5 | 8367.5 | 12551.5 | 16735.5 | 22282.0 | A | 25171.5 |
| N Pacific: | | | | | | | | | |
| Initial | 7 | 4185.0 | 6279.0 | 8368.5 | 12552.5 | 16736.5 | 22282.5 | B | 25172.5 |
| Alternate | 8 | 4185.5 | 6279.5 | 8369.5 | 12553.0 | 16737.0 | 22283.0 | B | 25172.5 |
| S Pacific: | | | | | | | | | |
| Initial | 9 | 4186.0 | 6280.0 | 8370.0 | 12554.0 | 16737.5 | 22283.5 | B | 25172.5 |
| Alternate | 10 | 4186.5 | 6280.5 | 8370.5 | 12554.5 | 16738.5 | 22284.0 | B | 25172.5 |

(3) *Coast Station frequencies.* Coast stations may use any working carrier frequency for distress, safety and calling listed in §80.357(b)(1) which is not identified with a specific use.

(d) *Frequencies in the VHF bands.* (1) Survival craft stations using 121.500 MHz may be assigned A3N emission for radiobeacon purposes.

(2) EPIRB stations may be assigned 121.500 MHz and 243.000 MHz using A3E, A3X and NON emission or 156.750 MHz and 156.800 MHz using G3N emission to aid search and rescue operations. See subpart V of this part.

[51 FR 31213, Sept. 2, 1986; 51 FR 34984, Oct. 1, 1986; 52 FR 35245, Sept. 18, 1987; 56 FR 9886, Mar. 8, 1991; 56 FR 11516, Mar. 19, 1991]

### §80.357 Morse code working frequencies.

This section describes the working frequencies assignable to maritime stations for A1A or J2A radiotelegraphy.

(a) *Ship station frequencies*—(1) *Frequencies in the 100–160 kHz band.* The following table describes the working carrier frequencies in the 100–160 kHz band which are assignable to ship stations. A ship station may also transmit on a radiotelegraphy working channel of a coast station within the 100–160 kHz band when directed to do so by the coast station provided interference is not caused to any land, fixed, broadcast, or radiolocation station.

| 100–160 (kHz) |
|---|
| 152 |
| 153 |
| 154 |
| 155 |
| 156 |
| 157 |
| 158 |

(2) *Frequencies in the 405–525 kHz band.* The following table describes the working carrier frequencies in the 405–525 kHz band which are assignable to ship stations. A ship station may transmit on a radiotelegraphy working channel of a coast station in the 415–490 kHz band when directed to do so by the coast station.

| 405–525 (kHz) |
|---|
| [1] 410 |
| 425 |
| 454 |
| 468 |
| 480 |
| [2] 512 |
| [3] 518 |

[1] The frequency 410 kHz may be used on a secondary basis for the transmission of radiodetermination information and for transmitting by radiotelegraph radiodetermination related messages to direction-finding stations.

[2] The frequency 512 kHz may be used as a supplementary calling frequency when 500 kHz is used for distress, safety and urgency communications. The use of the 512 kHz as a working frequency is prohibited in areas where it is used as a supplementary calling frequency when 500 kHz is used for distress, safety, and urgency communications.

[3] The frequency 518 kHz is a receive only frequency by ship stations. It is used by U.S. Coast Guard coast stations for NB–DP transmissions of meteorological and navigational warnings to ships.

(3) *Frequencies in the 2000–27500 kHz band.* This paragraph describes the working frequencies and Channel Series in the 2000–27500 kHz band which are assignable to ship stations.

(i) Two Channel Series will be assigned for routine use to each ship station. Frequencies from any other Channel Series may be used if the frequencies in the assigned Channel Series are not adequate for communications.

SHIP MORSE WORKING FREQUENCIES (KHZ)

| Channel Series: | | | | | | | |
|---|---|---|---|---|---|---|---|
| W1 | 4187.0 | 6285.0 | 8342.0<br>8343.5 | 12422.0<br>12453.0 | 16619.0<br>16650.0<br>16681.0 | 22242.0<br>22273.0 | 25161.5 |
| W2 | 4187.5 | 6285.5 | 8342.5<br>8344.0 | 12422.5<br>12453.5 | 16619.5<br>16650.5<br>16681.5 | 22242.5<br>22273.5 | 25162.0 |
| W3 | 4188.0 | 6286.0 | 8343.0<br>8344.5 | 12423.0<br>12454.0 | 16620.0<br>16651.0<br>16682.0 | 22243.0<br>22274.0 | 25162.5 |
| W4 | 4188.5 | 6286.5 | 8343.5<br>8345.0 | 12423.5<br>12454.5 | 16620.5<br>16651.5<br>16682.5 | 22243.5<br>22274.5 | 25163.0 |
| W5 | 4189.0 | 6287.0 | 8344.0<br>8345.5 | 12424.0<br>12455.0 | 16621.0<br>16652.0<br>16683.0 | 22244.0<br>22275.0 | 25163.5 |
| W6 | 4189.5 | 6287.5 | 8344.5<br>8346.0 | 12424.5<br>12455.5 | 16621.5<br>16652.5<br>16619.0 | 22244.5<br>22275.5 | 25164.0 |
| W7 | 4190.0 | 6288.0 | 8345.0<br>8346.5 | 12425.0<br>12456.0 | 16622.0<br>16653.0<br>16619.5 | 22245.0<br>22276.0 | 25164.5 |
| W8 | 4190.5 | 6288.5 | 8345.5<br>8347.0 | 12425.5<br>12456.5 | 16622.5<br>16653.5<br>16620.0 | 22245.5<br>22276.5 | 25165.0 |
| W9 | 4191.0 | 6289.0 | 8346.0<br>8347.5 | 12426.0<br>12457.0 | 16623.0<br>16654.0<br>16620.5 | 22246.0<br>22277.0 | 25165.5 |
| W10 | 4191.5 | 6289.5 | 8346.5<br>8348.0 | 12426.5<br>12457.5 | 16623.5<br>16654.5<br>16621.0 | 22246.5<br>22270.5 | 25166.0 |
| W11 | 4192.0 | 6290.0 | 8347.0<br>8348.5 | 12427.0<br>12458.0 | 16624.0<br>16655.0<br>16621.5 | 22247.0<br>22278.0 | 25166.5 |
| W12 | 4192.5 | 6290.5 | 8347.5<br>8349.0 | 12427.5<br>12458.5 | 16624.5<br>16655.5<br>16622.0 | 22247.5<br>22278.5 | 25167.0 |
| W13 | 4193.0 | 6291.0 | 8348.0<br>8349.5 | 12428.0<br>12459.0 | 16625.0<br>16656.0<br>16622.5 | 22248.0<br>22279.0 | 25167.5 |
| W14 | 4193.5 | 6291.5 | 8348.5<br>8350.0 | 12428.5<br>12459.5 | 16625.5<br>16656.5 | 22248.5<br>22242.0 | 25168.0 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | 16623.0 | | |
| W15 ..... | 4194.0 | 6292.0 | 8349.0 | 12429.0 | 16626.0 | 22249.0 | 25168.5 |
| | | | 8350.5 | 12460.0 | 16657.0 | 22242.5 | |
| | | | | | 16623.5 | | |
| W16 ..... | 4194.5 | 6292.5 | 8349.5 | 12429.5 | 16626.5 | 22249.5 | 25169.0 |
| | | | 8351.0 | 12460.5 | 16657.5 | 22243.0 | |
| | | | | | 16624.0 | | |
| W17 ..... | 4195.0 | 6293.0 | 8350.0 | 12430.0 | 16627.0 | 22250.0 | 25169.5 |
| | | | 8351.5 | 12461.0 | 16658.0 | 22243.5 | |
| | | | | | 16624.5 | | |
| W18 ..... | 4195.5 | 6293.5 | 8350.5 | 12430.5 | 16627.5 | 22250.5 | 25170.0 |
| | | | 8352.0 | 12461.5 | 16658.5 | 22244.0 | |
| | | | | | 16625.0 | | |
| W19 ..... | 4196.0 | 6294.0 | 8351.0 | 12431.0 | 16628.0 | 22251.0 | 25170.5 |
| | | | 8352.5 | 12462.0 | 16659.0 | 22244.5 | |
| | | | | | 16625.5 | | |
| W20 ..... | 4196.5 | 6294.5 | 8351.5 | 12431.5 | 16628.5 | 22251.5 | 25171.0 |
| | | | 8353.0 | 12462.5 | 16659.5 | 22245.0 | |
| | | | | | 16626.0 | | |
| W21 ..... | 4197.0 | 6295.0 | 8352.0 | 12432.0 | 16629.0 | 22252.0 | 25161.5 |
| | | | 8353.5 | 12463.0 | 16660.0 | 22245.5 | |
| | | | | | 16626.5 | | |
| W22 ..... | 4197.5 | 6295.5 | 8352.5 | 12432.5 | 16629.5 | 22252.5 | 25162.0 |
| | | | 8354.0 | 12463.5 | 16660.5 | 22246.0 | |
| | | | | | 16627.0 | | |
| W23 ..... | 4198.0 | 6296.0 | 8353.0 | 12433.0 | 16630.0 | 22253.0 | 25162.5 |
| | | | 8354.5 | 12464.0 | 16661.0 | 22246.5 | |
| | | | | | 16627.5 | | |
| W24 ..... | 4198.5 | 6296.5 | 8353.5 | 12433.5 | 16630.5 | 22253.5 | 25163.0 |
| | | | 8355.0 | 12464.5 | 16661.5 | 22247.0 | |
| | | | | | 16628.0 | | |
| W25 ..... | 4199.0 | 6297.0 | 8354.0 | 12434.0 | 16631.0 | 22254.0 | 25163.5 |
| | | | 8355.5 | 12465.0 | 16662.0 | 22247.5 | |
| | | | | | 16628.5 | | |
| W26 ..... | 4199.5 | 6297.5 | 8354.5 | 12434.5 | 16631.5 | 22254.5 | 25164.0 |
| | | | 8356.0 | 12465.5 | 16662.5 | 22248.0 | |
| | | | | | 16629.0 | | |
| W27 ..... | 4200.0 | 6298.0 | 8355.0 | 12435.0 | 16632.0 | 22255.0 | 25164.5 |
| | | | 8356.5 | 12466.0 | 16663.0 | 22248.5 | |
| | | | | | 16629.5 | | |
| W28 ..... | 4200.5 | 6298.5 | 8355.5 | 12435.5 | 16632.5 | 22255.5 | 25165.0 |
| | | | 8357.0 | 12466.5 | 16663.5 | 22249.0 | |
| | | | | | 16630.0 | | |
| W29 ..... | 4201.0 | 6299.0 | 8356.0 | 12436.0 | 16633.0 | 22256.0 | 25165.5 |

SHIP MORSE WORKING FREQUENCIES (KHZ)—Continued

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | 8357.5 | 12467.0 | 16664.0 | 22249.5 | |
| | | | | | 16630.5 | | |
| W30 | 4201.5 | 6299.5 | 8356.5 | 12436.5 | 16633.5 | 22256.5 | 25166.0 |
| | | | 8358.0 | 12467.5 | 16664.5 | 22250.0 | |
| | | | | | 16631.0 | | |
| W31 | 4202.0 | 6300.0 | 8357.0 | 12437.0 | 16634.0 | 22257.0 | 25166.5 |
| | | | 8358.5 | 12468.0 | 16665.0 | 22250.5 | |
| | | | | | 16631.5 | | |
| W32 | 4202.0 | 6300.0 | 8357.5 | 12437.5 | 16634.5 | 22257.5 | 25167.0 |
| | | | 8359.0 | 12468.5 | 16665.5 | 22251.0 | |
| | | | | | 16632.0 | | |
| W33 | 4201.5 | 6299.5 | 8358.0 | 12438.0 | 16635.0 | 22258.0 | 25167.5 |
| | | | 8359.5 | 12469.0 | 16666.0 | 22251.5 | |
| | | | | | 16632.5 | | |
| W34 | 4201.0 | 6299.0 | 8358.5 | 12438.5 | 16635.5 | 22258.5 | 25168.0 |
| | | | 8360.0 | 12469.5 | 16666.5 | 22252.0 | |
| | | | | | 16633.0 | | |
| W35 | 4200.5 | 6298.5 | 8359.0 | 12439.0 | 16636.0 | 22259.0 | 25168.5 |
| | | | 8360.5 | 12470.0 | 16667.0 | 22252.5 | |
| | | | | | 16633.5 | | |
| W36 | 4200.0 | 6298.0 | 8359.5 | 12439.5 | 16636.5 | 22259.5 | 25169.0 |
| | | | 8361.0 | 12470.5 | 16667.5 | 22253.0 | |
| | | | | | 16634.0 | | |
| W37 | 4199.5 | 6297.5 | 8360.0 | 12440.0 | 16637.0 | 22260.0 | 25169.5 |
| | | | 8361.5 | 12471.0 | 16668.0 | 22253.5 | |
| | | | | | 16634.5 | | |
| W38 | 4199.0 | 6297.0 | 8360.5 | 12440.5 | 16637.5 | 22260.5 | 25170.0 |
| | | | 8362.0 | 12471.5 | 16668.5 | 22254.0 | |
| | | | | | 16635.0 | | |
| W39 | 4198.5 | 6296.5 | 8361.0 | 12441.0 | 16638.0 | 22261.0 | 25170.5 |
| | | | 8362.5 | 12472.0 | 16669.0 | 22254.5 | |
| | | | | | 16635.5 | | |
| W40 | 4198.0 | 6296.0 | 8361.5 | 12441.5 | 16638.5 | 22261.5 | 25171.0 |
| | | | 8363.0 | 12472.5 | 16669.5 | 22255.0 | |
| | | | | | 16636.0 | | |
| W41 | 4197.5 | 6295.5 | 8362.0 | 12442.0 | 16639.0 | 22262.0 | 25161.5 |
| | | | 8363.5 | 12473.0 | 16670.0 | 22255.5 | |
| | | | | | 16636.5 | | |
| W42 | 4197.0 | 6295.0 | 8362.5 | 12442.5 | 16639.5 | 22262.5 | 25162.0 |
| | | | 8364.0 | 12473.5 | 16670.5 | 22256.0 | |
| | | | | | 16637.0 | | |
| W43 | 4196.5 | 6294.5 | 8363.0 | 12443.0 | 16640.0 | 22263.0 | 25162.5 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | 8364.5 | 12474.0 | 16671.0 | 22256.5 | |
| | | | | | 16637.5 | | |
| W44 ..... | 4196.0 | 6294.0 | 8363.5 | 12443.5 | 16640.5 | 22263.5 | 25163.0 |
| | | | 8365.0 | 12474.5 | 16671.5 | 22257.0 | |
| | | | | | 16638.0 | | |
| W45 ..... | 4195.5 | 6293.5 | 8364.0 | 12444.0 | 16641.0 | 22264.0 | 25163.5 |
| | | | 8365.5 | 12475.0 | 16672.0 | 22257.5 | |
| | | | | | 16638.5 | | |
| W46 ..... | 4195.0 | 6293.0 | 8364.5 | 12444.5 | 16641.5 | 22264.5 | 25164.0 |
| | | | 8371.0 | 12475.5 | 16672.5 | 22258.0 | |
| | | | | | 16639.0 | | |
| W47 ..... | 4194.5 | 6292.5 | 8365.0 | 12445.0 | 16642.0 | 22265.0 | 25164.5 |
| | | | 8371.5 | 12476.0 | 16673.0 | 22258.5 | |
| | | | | | 16639.5 | | |
| W48 ..... | 4194.0 | 6292.0 | 8365.5 | 12445.5 | 16642.5 | 22265.5 | 25165.0 |
| | | | 8372.0 | 12476.5 | 16673.5 | 22259.0 | |
| | | | | | 16640.0 | | |
| W49 ..... | 4193.5 | 6291.5 | 8371.0 | 12446.0 | 16643.0 | 22266.0 | 25165.5 |
| | | | 8372.5 | 12422.0 | 16674.0 | 22259.5 | |
| | | | | | 16640.5 | | |
| W50 ..... | 4193.0 | 6291.0 | 8371.5 | 12446.5 | 16643.5 | 22266.5 | 25166.0 |
| | | | 8373.0 | 12422.5 | 16674.5 | 22260.0 | |
| | | | | | 16641.0 | | |
| W51 ..... | 4192.5 | 6290.5 | 8372.0 | 12447.0 | 16644.0 | 22267.0 | 25166.5 |
| | | | 8373.5 | 12423.0 | 16675.0 | 22260.5 | |
| | | | | | 16641.5 | | |
| W52 ..... | 4192.0 | 6290.0 | 8372.5 | 12447.5 | 16644.5 | 22267.5 | 25167.0 |
| | | | 8374.0 | 12423.5 | 16675.5 | 22261.0 | |
| | | | | | 16642.0 | | |
| W53 ..... | 4191.5 | 6289.5 | 8373.0 | 12448.0 | 16645.0 | 22268.0 | 25167.5 |
| | | | 8374.5 | 12424.0 | 16676.0 | 22261.5 | |
| | | | | | 16642.5 | | |
| W54 ..... | 4191.0 | 6289.0 | 8373.5 | 12448.5 | 16645.5 | 22268.5 | 25168.0 |
| | | | 8375.0 | 12424.5 | 16676.5 | 22262.0 | |
| | | | | | 16643.0 | | |
| W55 ..... | 4190.5 | 6288.5 | 8374.0 | 12449.0 | 16646.0 | 22269.0 | 25168.5 |
| | | | 8375.5 | 12425.0 | 16677.0 | 22262.5 | |
| | | | | | 16643.5 | | |
| W56 ..... | 4190.0 | 6288.0 | 8374.5 | 12449.5 | 16646.5 | 22269.5 | 25169.0 |
| | | | 8376.0 | 12425.5 | 16677.5 | 22263.0 | |
| | | | | | 16644.0 | | |
| W57 ..... | 4189.5 | 6287.5 | 8375.0 | 12450.0 | 16647.0 | 22270.0 | 25169.5 |
| | | | 8342.0 | 12426.0 | 16678.0 | 22263.5 | |
| | | | | | 16644.5 | | |

SHIP MORSE WORKING FREQUENCIES (KHZ)—Continued

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| W58 | 4189.0 | 6287.0 | 8375.5<br>8342.5 | 12450.5<br>12426.5 | 16647.5<br>16678.5<br>16645.0 | 22270.5<br>22264.0 | 25170.0 |
| W59 | 4188.5 | 6286.5 | 8376.0<br>8343.0 | 12451.0<br>12427.0 | 16648.0<br>16679.0<br>16645.5 | 22271.0<br>22264.5 | 25170.5 |
| W60 | 4188.0 | 6286.0 | 8342.0<br>8343.5 | 12451.5<br>12427.5 | 16648.5<br>16679.5<br>16646.0 | 22271.5<br>22265.0 | 25171.0 |
| W61 | 4187.5 | 6285.5 | 8342.5<br>8344.0 | 12452.0<br>12428.0 | 16649.0<br>16680.0<br>16646.5 | 22272.0<br>22265.5 | 25161.5 |
| W62 | 4187.0 | 6285.0 | 8343.0<br>8344.5 | 12452.5<br>12428.5 | 16649.5<br>16680.5<br>16678.0 | 22272.5<br>22266.0 | 25162.0 |

(ii) If the frequencies listed in paragraph (3)(i) of this section are not adequate for communications, ship stations may use any of the non-paired narrow-band direct-printing frequencies listed in § 80.361(b) of this part for A1A or J2A radiotelegraphy.

(b) *Coast station frequencies*—(1) *Frequencies in the 100–27500 kHz band.* The following table describes the working carrier frequencies in the 100–27500 kHz band which are assignable to coast stations located in the designated geographical areas. The exclusive maritime mobile HF bands listed in the table contained in § 80.363(b) of this part are also available for assignment to public coast stations for A1A or J2A radiotelegraphy following coordination with government users.

| Area | Bands [1] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 100–160 kHz | 405–525 kHz | 2 MHz | 4 MHz | 6 MHz | 8 MHz | 12 MHz | 16 MHz | 22 MHz |
| Central Pacific | 126.15 | 426.00 | 2037.5 | 4247.0 | 6348.0 | 8558.0 | 12695.5 | 17016.8 | 22479.0 |
| | ..... | 436.00 | 2045.0 | 4274.0 | 6365.5 | 8618.0 | 12808.5 | 17026.0 | 22515.0 |
| | 147.85 | 460.00 | 2061.5 | 4228.0 | 6477.5 | 8642.0 | 12844.5 | 17088.8 | 22557.0 |
| | ..... | 476.0 | ..... | ..... | 6488.0 | 8445.0 | 13002.0 | ..... | 22581.5 |
| | ..... | 500.00 | ..... | ..... | ..... | ..... | 13033.5 | ..... | ..... |
| | ..... | 512.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| South Pacific | ..... | 418.00 | 2049.5 | 4238.0 | 6355.0 | 8590.0 | 12691.0 | 17064.8 | 22467.0 |
| | ..... | 464.00 | 2055.5 | 4283.0 | 6463.5 | 8606.0 | 12912.0 | 17088.8 | 22593.5 |
| | ..... | 482.00 | ..... | ..... | ..... | 8642.0 | 12993.0 | 17220.5 | ..... |
| | ..... | 500.00 | ..... | ..... | ..... | ..... | 13033.5 | ..... | ..... |
| | ..... | 512.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Gulf of Mexico | 153.00 | 410.00 | 2042.0 | 4256.0 | 6369.0 | 8473.0 | 12704.5 | 17117.6 | 22467.0 |
| | ..... | 420.00 | 2048.0 | 4274.0 | 6435.5 | 8550.0 | 12826.5 | 17170.4 | 22668.5 |
| | ..... | 434.00 | 2049.5 | 4310.0 | 6446.0 | 8570.0 | 12840.0 | 17172.4 | 22686.5 |
| | ..... | 438.00 | 2052.5 | 4322.0 | 6495.0 | 8666.0 | 13038.0 | 17230.1 | 22688.0 |
| | ..... | 478.00 | 2055.5 | ..... | ..... | 8445.0 | 13051.5 | ..... | ..... |
| | ..... | 484.00 | 2063.0 | ..... | ..... | 8453.0 | 12660.0 | ..... | ..... |
| | ..... | 500.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | ..... | 512.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Great Lakes | ..... | 482.00 | ..... | 4316.0 | 6474.0 | 8534.0 | ..... | ..... | ..... |
| | ..... | 500.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | ..... | 512.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Hawaii | ..... | 484.00 | 2052.5 | 4295.0 | 6407.5 | 8542.0 | 13029.0 | 16978.4 | 22509.0 |
| | ..... | 500.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | ..... | 512.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Puerto Rico | 153.00 | 486.00 | 2052.5 | 4244.0 | ..... | 8457.0 | 12700.0 | ..... | ..... |
| | ..... | 500.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | ..... | 512.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| North Atlantic | 112.85 | 418.00 | 2036.0 | 4238.0 | 6351.5 | 8502.0 | 12745.5 | 16933.2 | 22485.0 |
| | 124.05 | 436.00 | 2040.5 | 4268.0 | 6376.0 | 8514.0 | 12925.5 | 16968.8 | 22503.0 |
| | 130.35 | 442.00 | 2046.5 | 4331.0 | 6414.5 | 8586.0 | 12948.0 | 16973.6 | 22521.0 |
| | 132.10 | 460.00 | 2051.0 | 4343.0 | 6418.0 | 8610.0 | 12961.5 | 16997.6 | 22599.5 |
| | 134.55 | 472.00 | 2054.0 | 4346.0 | 6333.5 | 8630.0 | 12997.5 | 17021.6 | 22640.0 |
| | 137.00 | 476.00 | 2060.0 | ..... | 6337.0 | 8658.0 | 13020.0 | 17093.6 | 22658.0 |
| | ..... | 482.00 | ..... | ..... | 6344.0 | 8686.0 | 13024.5 | 16904.9 | ..... |
| | 146.80 | 500.00 | ..... | ..... | ..... | ..... | 13033.5 | ..... | ..... |
| | 147.50 | 512.00 | ..... | ..... | ..... | ..... | 13060.5 | ..... | ..... |
| Central Atlantic | ..... | 428.00 | 2063.0 | 4346.0 | 6484.5 | 8502.0 | 12885.0 | 16916.5 | 22588.5 |
| | ..... | 500.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | ..... | 512.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| South Atlantic | 137.70 | 434.00 | 2039.0 | 4250.0 | 6389.6 | 8486.0 | 12952.5 | 16918.8 | 22503.0 |
| | ..... | 464.00 | 2043.5 | 4292.0 | 6407.5 | 8525.0 | 12970.5 | 17093.6 | 22575.5 |
| | ..... | 472.00 | 2051.0 | 4295.0 | 6411.0 | 8686.0 | 13011.0 | 17160.8 | ..... |
| | ..... | 488.00 | 2057.0 | ..... | ..... | 8453.0 | 12660.0 | 17170.4 | ..... |
| | ..... | 500.00 | ..... | ..... | ..... | ..... | ..... | 17239.7 | ..... |
| | ..... | 512.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| North Pacific | ..... | 482.00 | 2058.5 | 4349.0 | 6411.0 | 8582.0 | 12907.5 | 17007.2 | 22539.0 |
| | ..... | 488.00 | 2063.0 | ..... | ..... | 8658.0 | 12916.5 | ..... | ..... |
| | ..... | 500.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | ..... | 512.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Alaska | ..... | 416.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | ..... | 438.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | ..... | 452.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | ..... | 472.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| | ..... | 512.00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

[1] All frequencies in this table are shown in kilohertz.

(2) *Conditions of use.* The following conditions are applicable to these frequencies:

(i) Frequencies in the 100–160 kHz band are assignable to coast stations for high seas communications only;

(ii) Frequencies above 5 MHz may be assigned primarily to stations serving the high seas and secondarily to stations serving inland waters of the United States, including the Great Lakes, under the condition that interference will not be caused to any coast station serving the high seas. Applicants for these frequencies must submit a substantial showing of need based on the following factors:

(A) A schedule of each currently licensed Morse working frequency and the expected use of the proposed frequencies;

(B) For additional frequencies within the same MHz band, a factual showing of the 3 busiest hours of any 4 days within a consecutive 10 day period for each of the 2 months immediately preceding the filing of the application indicating that the applicant has used its currently assigned frequencies within the same MHz band an aggregate average of at least 40% of the 3 busiest hours of each day for exchanging communications; and

(C) Any other facts that support the need for the proposed assignment, *e.g.*, evidence of radio interference by another station located near enough to render a currently licensed frequency substantially unusable.

(iii) The frequency 410 kHz may be used on a secondary basis for the transmission of radiodetermination information and for transmitting by radiotelegraph radiodetermination messages to direction-finding stations; and

(iv) The frequency 512 kHz may be used as a supplementary calling frequency when 500 kHz is used for distress, urgency and safety communications. The use of the 512 kHz as a working frequency is prohibited in areas where 500 kHz is used for distress, urgency and safety communications.

[51 FR 31213, Sept. 2, 1986; 51 FR 34984, Oct. 1, 1986; 56 FR 9887, Mar. 8, 1991; 56 FR 34029, July 25, 1991]

### § 80.359 Frequencies for digital selective calling (DSC).

(a) *General purpose calling.* The following table describes the calling frequencies for use by authorized ship and coast stations for general purpose DSC. There are three series of paried frequencies. One series is for worldwide use; the other two series are for regional use. The ''Series A'' designation includes coast stations along, and ship stations in, the Atlantic Ocean, the Gulf of Mexico, and the Caribbean Sea. The ''Series B'' designation includes stations in any remaining areas. Stations must initiate contact on the appropriate regional frequency depending upon the location of the called station and propagation conditions. Acknowledgement is made on the paired frequency. The worldwide frequencies may be used for international calling, if calls on the appropriate regional frequencies are unsuccessful, or the regional series does not contain the appropriate band (*e.g.*, 2 MHz). During normal working hours, all public coast stations capable of DSC operations must monitor the worldwide and regional frequencies appropriate for its location. The specific frequencies to be monitored will vary with propagation conditions.

GENERAL PURPOSE DSC

[In kHz unless otherwise noted]

| Worldwide | | Series A | | Series B | |
|---|---|---|---|---|---|
| Ship | Coast | Ship | Coast | Ship | Coast |
| 458.5 | 455.5 | ..... | ..... | ..... | ..... |
| 2189.5 | [1] 2177.0 | ..... | ..... | ..... | ..... |
| 4208.0 | 4219.5 | 4208.5 | 4220.0 | 4209.5 | 4220.5 |
| 6312.5 | 6331.0 | 6313.0 | 6331.5 | 6313.5 | 6332.0 |
| 8415.0 | 8436.5 | 8415.5 | 8437.0 | 8416.0 | 8437.5 |
| 12577.5 | 12657.0 | 12578.0 | 12657.5 | 12578.5 | 12658.0 |
| 16805.0 | 16903.0 | 16805.5 | 16903.5 | 16806.0 | 16904.0 |
| 18898.5 | 19703.5 | 18899.0 | 19704.0 | 18899.5 | 19704.5 |
| 22374.5 | 22444.0 | 22375.0 | 22444.5 | 22375.5 | 22445.0 |
| 25208.5 | 26121.0 | 25209.0 | 26121.5 | 25209.5 | 26122.0 |

GENERAL PURPOSE DSC—Continued

[In kHz unless otherwise noted]

| Worldwide | | Series A | | Series B | |
|---|---|---|---|---|---|
| Ship | Coast | Ship | Coast | Ship | Coast |
| [2] 156.525 | [2] 156.525 | ..... | ..... | ..... | ..... |

[1] The frequency 2177.0 kHzs is also available to ship stations for intership calling and acknowledgement of such calls only.
[2] MHz.

(b) *Distress and safety calling.* The frequencies 2187.5 kHz, 4207.5 kHz, 6312.0 kHz, 8414.5 kHz, 12577.0 kHz, 16804.5 kHz, and 156.525 MHz may be used for DSC by coast and ship stations on a simplex basis for distress and safety purposes. The provisions and procedures for distress and safety calling are contained in CCIR Recommendation 541 as modified by § 80.103(c) of this part.

(c) *Working frequencies.* Coast and ship stations may use DSC techniques for general calling purposes on their assigned working frequencies in the 2000–27500 kHz band and on those frequencies in the 156–162 MHz band which are allocated for maritime control, commercial, non-commercial and public correspondence communications.

[51 FR 31213, Sept. 2, 1986, as amended at 54 FR 49995, Dec. 4, 1989; 56 FR 9890, Mar. 8, 1991; 56 FR 14150, Apr. 5, 1991]

### § 80.361 Frequencies for narrow-band direct-printing (NBDP), radioprinter and data transmissions.

(a) *Paired channels.* (1) The following frequencies are available for assignment to public coast stations for narrow-band direct-printing (NBDP) and data transmissions. The paired ship frequencies are available for use by authorized ship stations for NBDP and data transmissions.

| Ch. no. | Paired frequencies for NBDP and data transmissions (kHz) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 4 MHz | | 6 MHz | | 8 MHz | | 12 MHz | | 16 MHz | | 18/19 MHz | | 22 MHz | | 25/26 MHz | |
| | Coast | Ship | Coast | Ship | Coast | Ship | Coast | Ship | Coast | Ship | Coast | Ship | Coast | Ship | Coast | Ship |
| 1 | 4210.5 | 4172.5 | 6314.5 | 6263.0 | | | 12579.5 | 12477.0 | 16807.0 | 16683.5 | 19681.0 | 18870.5 | 22376.5 | 22284.5 | 26101.0 | 25173.0 |
| 2 | 4211.0 | 4173.0 | 6315.0 | 6263.5 | 8417.0 | 8377.0 | 12580.0 | 12477.5 | 16807.5 | 16684.0 | 19681.5 | 18871.0 | 22377.0 | 22285.0 | 26101.5 | 25173.5 |
| 3 | 4211.5 | 4173.5 | 6315.5 | 6264.0 | 8417.5 | 8377.5 | 12580.5 | 12478.0 | 16808.0 | 16684.5 | 19682.0 | 18871.5 | 22377.5 | 22285.5 | 26102.0 | 25174.0 |
| 4 | 4212.0 | 4174.0 | 6316.0 | 6264.5 | 8418.0 | 8378.0 | 12581.0 | 12478.5 | 16808.5 | 16685.0 | 19682.5 | 18872.0 | 22378.0 | 22286.0 | 26102.5 | 25174.5 |
| 5 | 4212.5 | 4174.5 | 6316.5 | 6265.0 | 8418.5 | 8378.5 | 12581.5 | 12479.0 | 16809.0 | 16685.5 | 19683.0 | 18872.5 | 22378.5 | 22286.5 | 26103.0 | 25175.0 |
| 6 | 4213.0 | 4175.0 | 6317.0 | 6265.5 | 8419.0 | 8379.0 | 12582.0 | 12479.5 | 16809.5 | 16686.0 | 19683.5 | 18873.0 | 22379.0 | 22287.0 | 26103.5 | 25175.5 |
| 7 | 4213.5 | 4175.5 | 6317.5 | 6266.0 | 8419.5 | 8379.5 | 12582.5 | 12480.0 | 16810.0 | 16686.5 | 19684.0 | 18873.5 | 22379.5 | 22287.5 | 26104.0 | 25176.0 |
| 8 | 4214.0 | 4176.0 | 6318.0 | 6266.5 | 8420.0 | 8380.0 | 12583.0 | 12480.5 | 16810.5 | 16687.0 | 19684.5 | 18874.0 | 22380.0 | 22288.0 | 26104.5 | 25176.5 |
| 9 | 4214.5 | 4176.5 | 6318.5 | 6267.0 | 8420.5 | 8380.5 | 12583.5 | 12481.0 | 16811.0 | 16687.5 | 19685.0 | 18874.5 | 22380.5 | 22288.5 | 26105.0 | 25177.0 |
| 10 | 4215.0 | 4177.0 | 6319.0 | 6267.5 | 8421.0 | 8381.0 | 12584.0 | 12481.5 | 16811.5 | 16688.0 | 19685.5 | 18875.0 | 22381.0 | 22289.0 | 26105.5 | 25177.5 |
| 11 | | | | | 8421.5 | 8381.5 | 12584.5 | 12482.0 | 16812.0 | 16688.5 | 19686.0 | 18875.5 | 22381.5 | 22289.5 | 26106.0 | 25178.0 |
| 12 | 4215.5 | 4178.0 | 6319.5 | 6268.5 | 8422.0 | 8382.0 | 12585.0 | 12482.5 | 16812.5 | 16689.0 | 19686.5 | 18876.0 | 22382.0 | 22290.0 | 26106.5 | 25178.5 |
| 13 | 4216.0 | 4178.5 | 6320.0 | 6269.0 | 8422.5 | 8382.5 | 12585.5 | 12483.0 | 16813.0 | 16689.5 | 19687.0 | 18876.5 | 22382.5 | 22290.5 | 26107.0 | 25179.0 |
| 14 | 4216.5 | 4179.0 | 6320.5 | 6269.5 | 8423.0 | 8383.0 | 12586.0 | 12483.5 | 16813.5 | 16690.0 | 19687.5 | 18877.0 | 22383.0 | 22291.0 | 26107.5 | 25179.5 |
| 15 | 4217.0 | 4179.5 | 6321.0 | 6270.0 | 8423.5 | 8383.5 | 12586.5 | 12484.0 | 16814.0 | 16690.5 | 19688.0 | 18877.5 | 22383.5 | 22291.5 | 26108.0 | 25180.0 |
| 16 | 4217.5 | 4180.0 | 6321.5 | 6270.5 | 8424.0 | 8384.0 | 12587.0 | 12484.5 | 16814.5 | 16691.0 | 19688.5 | 18878.0 | 22384.0 | 22292.0 | 26108.5 | 25180.5 |
| 17 | 4218.0 | 4180.5 | 6322.0 | 6271.0 | 8424.5 | 8384.5 | 12587.5 | 12485.0 | 16815.0 | 16691.5 | 19689.0 | 18878.5 | 22384.5 | 22292.5 | 26109.0 | 25181.0 |
| 18 | | | 6322.5 | 6271.5 | 8425.0 | 8385.0 | 12588.0 | 12485.5 | 16815.5 | 16992.0 | 19689.5 | 18879.0 | 22385.0 | 22293.0 | 26109.5 | 25181.5 |
| 19 | | | 6323.0 | 6272.0 | 8425.5 | 8385.5 | 12588.5 | 12486.0 | 16816.0 | 16692.5 | 19690.0 | 18879.5 | 22385.5 | 22293.5 | 26110.0 | 25182.0 |
| 20 | | | 6323.5 | 6272.5 | 8426.0 | 8386.0 | 12589.0 | 12486.5 | 16816.5 | 16693.0 | 19690.5 | 18880.0 | 22386.0 | 22294.0 | 26110.5 | 25182.5 |
| 21 | | | 6324.0 | 6273.0 | 8426.5 | 8386.5 | 12589.5 | 12487.0 | 16817.0 | 16693.5 | 19691.0 | 18880.5 | 22386.5 | 22294.5 | | |
| 22 | | | 6324.5 | 6273.5 | 8427.0 | 8387.0 | 12590.0 | 12487.5 | 16817.5 | 16694.0 | 19691.5 | 18881.0 | 22387.0 | 22295.0 | | |
| 23 | | | 6325.0 | 6274.0 | 8427.5 | 8387.5 | 12590.5 | 12488.0 | 16818.0 | 16694.5 | | | 22387.5 | 22295.5 | | |
| 24 | | | 6325.5 | 6274.5 | 8428.0 | 8388.0 | 12591.0 | 12488.5 | | | | | 22388.0 | 22296.0 | | |
| 25 | | | 6326.0 | 6275.0 | 8428.5 | 8388.5 | 12591.5 | 12489.0 | 16818.5 | 16695.5 | | | 22388.5 | 22296.5 | | |
| 26 | | | 6326.5 | 6275.5 | 8429.0 | 8389.0 | 12592.0 | 12489.5 | 16819.0 | 16696.0 | | | 22389.0 | 22297.0 | | |
| 27 | | | 6327.0 | 6281.0 | 8429.5 | 8389.5 | 12592.5 | 12490.0 | 16819.5 | 16696.5 | | | 22389.5 | 22297.5 | | |
| 28 | | | 6327.5 | 6281.5 | 8430.0 | 8390.0 | 12593.0 | 12490.5 | 16820.0 | 16697.0 | | | 22390.0 | 22298.0 | | |
| 29 | | | 6328.0 | 6282.0 | 8430.5 | 8390.5 | 12593.5 | 12491.0 | 16820.5 | 16697.5 | | | 22390.5 | 22298.5 | | |
| 30 | | | | | 8431.0 | 8391.0 | 12594.0 | 12491.5 | 16821.0 | 16698.0 | | | 22391.0 | 22299.0 | | |
| 31 | | | | | 8431.5 | 8391.5 | 12594.5 | 12492.0 | 16821.5 | 16698.5 | | | 22391.5 | 22299.5 | | |
| 32 | | | | | 8432.0 | 8392.0 | 12595.0 | 12492.5 | 16822.0 | 16699.0 | | | 22392.0 | 22300.0 | | |
| 33 | | | | | 8432.5 | 8392.5 | 12595.5 | 12493.0 | 16822.5 | 16699.5 | | | 22392.5 | 22300.5 | | |
| 34 | | | | | 8433.0 | 8393.0 | 12596.0 | 12493.5 | 16823.0 | 16700.0 | | | 22393.0 | 22301.0 | | |
| 35 | | | | | | | 12596.5 | 12494.0 | 16823.5 | 16700.5 | | | 22393.5 | 22301.5 | | |
| 36 | | | | | | | 12597.0 | 12494.5 | 16824.0 | 16701.0 | | | 22394.0 | 22302.0 | | |
| 37 | | | | | | | 12597.5 | 12495.0 | 16824.5 | 16701.5 | | | 22394.5 | 22302.5 | | |
| 38 | | | | | | | 12598.0 | 12495.5 | 16825.0 | 16702.0 | | | 22395.0 | 22303.0 | | |
| 39 | | | | | | | 12598.5 | 12496.0 | 16825.5 | 16702.5 | | | 22395.5 | 22303.5 | | |
| 40 | | | | | | | 12599.0 | 12496.5 | 16826.0 | 16703.0 | | | 22396.0 | 22304.0 | | |
| 41 | | | | | | | 12599.5 | 12497.0 | 16826.5 | 16703.5 | | | 22396.5 | 22304.5 | | |
| 42 | | | | | | | 12600.0 | 12497.5 | 16827.0 | 16704.0 | | | 22397.0 | 22305.0 | | |
| 43 | | | | | | | 12600.5 | 12498.0 | 16827.5 | 16704.5 | | | 22397.5 | 22305.5 | | |
| 44 | | | | | | | 12601.0 | 12498.5 | 16828.0 | 16705.0 | | | 22398.0 | 22306.0 | | |
| 45 | | | | | | | 12601.5 | 12499.0 | 16828.5 | 16705.5 | | | 22398.5 | 22306.5 | | |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 46 ..... | | | | | | 12602.0 | 12499.5 | 16829.0 | 16706.0 | | | 22399.0 | 22307.0 | | |
| 47 ..... | | | | | | 12602.5 | 12500.0 | 16829.5 | 16706.5 | | | 22399.5 | 22307.5 | | |
| 48 ..... | | | | | | 12603.0 | 12500.5 | 16830.0 | 16707.0 | | | 22400.0 | 22308.0 | | |
| 49 ..... | | | | | | 12603.5 | 12501.0 | 16830.5 | 16707.5 | | | 22400.5 | 22308.5 | | |
| 50 ..... | | | | | | 12604.0 | 12501.5 | 16831.0 | 16708.0 | | | 22401.0 | 22309.0 | | |
| 51 ..... | | | | | | 12604.5 | 12502.0 | 16831.5 | 16708.5 | | | 22401.5 | 22309.5 | | |
| 52 ..... | | | | | | 12605.0 | 12502.5 | 16832.0 | 16709.0 | | | 22402.0 | 22310.0 | | |
| 53 ..... | | | | | | 12605.5 | 12503.0 | 16832.5 | 16709.5 | | | 22402.5 | 22310.5 | | |
| 54 ..... | | | | | | 12606.0 | 12503.5 | 16833.0 | 16710.0 | | | 22403.0 | 22311.0 | | |
| 55 ..... | | | | | | 12606.5 | 12504.0 | 16833.5 | 16710.5 | | | 22403.5 | 22311.5 | | |
| 56 ..... | | | | | | 12607.0 | 12504.5 | 16834.0 | 16711.0 | | | 22404.0 | 22312.0 | | |
| 57 ..... | | | | | | 12607.5 | 12505.0 | 16834.5 | 16711.5 | | | 22404.5 | 22312.5 | | |
| 58 ..... | | | | | | 12608.0 | 12505.5 | 16835.0 | 16712.0 | | | 22405.0 | 22313.0 | | |
| 59 ..... | | | | | | 12608.5 | 12506.0 | 16835.5 | 16712.5 | | | 22405.5 | 22313.5 | | |
| 60 ..... | | | | | | 12609.0 | 12506.5 | 16836.0 | 16713.0 | | | 22406.0 | 22314.0 | | |
| 61 ..... | | | | | | 12609.5 | 12507.0 | 16836.5 | 16713.5 | | | 22406.5 | 22314.5 | | |
| 62 ..... | | | | | | 12610.0 | 12507.5 | 16837.0 | 16714.0 | | | 22407.0 | 22315.0 | | |
| 63 ..... | | | | | | 12610.5 | 12508.0 | 16837.5 | 16714.5 | | | 22407.5 | 22315.5 | | |
| 64 ..... | | | | | | 12611.0 | 12508.5 | 16838.0 | 16715.0 | | | 22408.0 | 22316.0 | | |
| 65 ..... | | | | | | 12611.5 | 12509.0 | 16838.5 | 16715.5 | | | 22408.5 | 22316.5 | | |
| 66 ..... | | | | | | 12612.0 | 12509.5 | 16839.0 | 16716.0 | | | 22409.0 | 22317.0 | | |
| 67 ..... | | | | | | 12612.5 | 12510.0 | 16839.5 | 16716.5 | | | 22409.5 | 22317.5 | | |
| 68 ..... | | | | | | 12613.0 | 12510.5 | 16400.0 | 16717.0 | | | 22410.0 | 22318.0 | | |
| 69 ..... | | | | | | 12613.5 | 12511.0 | 16400.5 | 16717.5 | | | 22410.5 | 22318.5 | | |
| 70 ..... | | | | | | 12614.0 | 12511.5 | 16411.0 | 16718.0 | | | 22411.0 | 22319.0 | | |
| 71 ..... | | | | | | 12614.5 | 12512.0 | 16841.5 | 16718.5 | | | 22411.5 | 22319.5 | | |
| 72 ..... | | | | | | 12615.0 | 12512.5 | 16842.0 | 16719.0 | | | 22412.0 | 22320.0 | | |
| 73 ..... | | | | | | 12615.5 | 12513.0 | 16842.5 | 16719.5 | | | 22412.5 | 22320.5 | | |
| 74 ..... | | | | | | 12616.0 | 12513.5 | 16843.0 | 16720.0 | | | 22413.0 | 22321.0 | | |
| 75 ..... | | | | | | 12616.5 | 12514.0 | 16843.5 | 16720.5 | | | 22413.5 | 22321.5 | | |
| 76 ..... | | | | | | 12617.0 | 12514.5 | 16844.0 | 16721.0 | | | 22414.0 | 22322.0 | | |
| 77 ..... | | | | | | 12617.5 | 12515.0 | 16844.5 | 16721.5 | | | 22414.5 | 22322.5 | | |
| 78 ..... | | | | | | 12618.0 | 12515.5 | 16845.0 | 16722.0 | | | 22415.0 | 22323.0 | | |
| 79 ..... | | | | | | 12618.5 | 12516.0 | 16845.5 | 16722.5 | | | 22415.5 | 22323.5 | | |
| 80 ..... | | | | | | 12619.0 | 12516.5 | 16846.0 | 16723.0 | | | 22416.0 | 22324.0 | | |
| 81 ..... | | | | | | 12619.5 | 12517.0 | 16846.5 | 16723.5 | | | 22416.5 | 22324.5 | | |
| 82 ..... | | | | | | 12620.0 | 12517.5 | 16847.0 | 16724.0 | | | 22417.0 | 22325.0 | | |
| 83 ..... | | | | | | 12620.5 | 12518.0 | 16847.5 | 16724.5 | | | 22417.5 | 22325.5 | | |
| 84 ..... | | | | | | 12621.0 | 12518.5 | 16848.0 | 16725.0 | | | 22418.0 | 22326.0 | | |
| 85 ..... | | | | | | 12621.5 | 12519.0 | 16848.5 | 16725.5 | | | 22418.5 | 22326.5 | | |
| 86 ..... | | | | | | 12622.0 | 12519.5 | 16849.0 | 16726.0 | | | 22419.0 | 22327.0 | | |
| 87 ..... | | | | | | | | 16849.5 | 16726.5 | | | 22419.5 | 22327.5 | | |
| 88 ..... | | | | | | 12622.5 | 12520.5 | 16850.0 | 16727.0 | | | 22420.0 | 22328.0 | | |
| 89 ..... | | | | | | 12623.0 | 12521.0 | 16850.5 | 16727.5 | | | 22420.5 | 22328.5 | | |
| 90 ..... | | | | | | 12623.5 | 12521.5 | 16851.0 | 16728.0 | | | 22421.0 | 22329.0 | | |
| 91 ..... | | | | | | 12624.0 | 12522.0 | 16851.5 | 16728.5 | | | 22421.5 | 22329.5 | | |
| 92 ..... | | | | | | 12624.5 | 12522.5 | 16852.0 | 16729.0 | | | 22422.0 | 22330.0 | | |
| 93 ..... | | | | | | 12625.0 | 12523.0 | 16852.5 | 16729.5 | | | 22422.5 | 22330.5 | | |
| 94 ..... | | | | | | 12625.5 | 12523.5 | 16853.0 | 16730.0 | | | 22423.0 | 22331.0 | | |
| 95 ..... | | | | | | 12626.0 | 12524.0 | 16853.5 | 16730.5 | | | 22423.5 | 22331.5 | | |

| Ch. no. | Paired frequencies for NBDP and data transmissions (kHz) | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 4 MHz | | 6 MHz | | 8 MHz | | 12 MHz | | 16 MHz | | 18/19 MHz | | 22 MHz | | 25/26 MHz | |
| | Coast | Ship | Coast | Ship | Coast | Ship | Coast | Ship | Coast | Ship | Coast | Ship | Coast | Ship | Coast | Ship |
| 96 ..... | | | | | | | 12626.5 | 12524.5 | 16854.0 | 16731.0 | | | 22424.0 | 22332.0 | | |
| 97 ..... | | | | | | | 12627.0 | 12525.0 | 16854.5 | 16731.5 | | | 22424.5 | 22332.5 | | |
| 98 ..... | | | | | | | 12627.5 | 12525.5 | 16855.0 | 16732.0 | | | 22425.0 | 22333.0 | | |
| 99 ..... | | | | | | | 12628.0 | 12526.0 | 16855.5 | 16732.5 | | | 22425.5 | 22333.5 | | |
| 100 ..... | | | | | | | 12628.5 | 12526.5 | 16856.0 | 16733.0 | | | 22426.0 | 22334.0 | | |
| 101 ..... | | | | | | | 12629.0 | 12527.0 | 16856.5 | 16733.5 | | | 22426.5 | 22334.5 | | |
| 102 ..... | | | | | | | 12629.5 | 12527.5 | 16857.0 | 16739.0 | | | | | | |
| 103 ..... | | | | | | | 12630.0 | 12528.0 | 16857.5 | 16739.5 | | | | | | |
| 104 ..... | | | | | | | 12630.5 | 12528.5 | 16858.0 | 16740.0 | | | | | | |
| 105 ..... | | | | | | | 12631.0 | 12529.0 | 16858.5 | 16740.5 | | | | | | |
| 106 ..... | | | | | | | 12631.5 | 12529.5 | 16859.0 | 16741.0 | | | | | | |
| 107 ..... | | | | | | | 12632.0 | 12530.0 | 16859.5 | 16741.5 | | | | | | |
| 108 ..... | | | | | | | | | 16860.0 | 16742.0 | | | | | | |
| 109 ..... | | | | | | | | | 16860.5 | 16742.5 | | | | | | |
| 110 ..... | | | | | | | | | 16861.0 | 16743.0 | | | | | | |
| 111 ..... | | | | | | | | | 16861.5 | 16743.5 | | | | | | |
| 112 ..... | | | | | | | | | 16862.0 | 16744.0 | | | | | | |
| 113 ..... | | | | | | | | | 16862.5 | 16744.5 | | | | | | |
| 114 ..... | | | | | | | | | 16863.0 | 16745.0 | | | | | | |
| 115 ..... | | | | | | | | | 16863.5 | 16745.5 | | | | | | |
| 116 ..... | | | | | | | | | 16864.0 | 16746.0 | | | | | | |
| 117 ..... | | | | | | | | | 16864.5 | 16746.5 | | | | | | |
| 118 ..... | | | | | | | | | 16865.0 | 16747.0 | | | | | | |
| 119 ..... | | | | | | | | | 16865.5 | 16747.5 | | | | | | |
| 120 ..... | | | | | | | | | 16866.0 | 16748.0 | | | | | | |
| 121 ..... | | | | | | | | | 16866.5 | 16748.5 | | | | | | |
| 122 ..... | | | | | | | | | 16867.0 | 16749.0 | | | | | | |
| 123 ..... | | | | | | | | | 16867.5 | 16749.5 | | | | | | |
| 124 ..... | | | | | | | | | 16868.0 | 16750.0 | | | | | | |
| 125 ..... | | | | | | | | | 16868.5 | 16750.5 | | | | | | |
| 126 ..... | | | | | | | | | 16869.0 | 16751.0 | | | | | | |
| 127 ..... | | | | | | | | | 16869.5 | 16751.5 | | | | | | |
| 128 ..... | | | | | | | | | 16870.0 | 16752.0 | | | | | | |
| 129 ..... | | | | | | | | | 16870.5 | 16752.5 | | | | | | |
| 130 ..... | | | | | | | | | 16871.0 | 16753.0 | | | | | | |
| 131 ..... | | | | | | | | | 16871.5 | 16753.5 | | | | | | |
| 132 ..... | | | | | | | | | 16872.0 | 16754.0 | | | | | | |

(2) Applicants for these frequencies must submit a substantial showing of need based on the following factors:

(i) A schedule of each currently licensed NBDP frequency and the expected use of the proposed frequencies;

(ii) For additional frequencies within the same MHz band, a factual showing of the 3 busiest hours of any 4 days within a consecutive 10 day period for each of the 2 months immediately preceding the filing of the application indicating that the applicant has used its currently assigned frequencies within the same MHz band an aggregate average of at least 40% of the 3 busiest hours of each day for exchanging communications; and

(iii) Any other facts that support the need for the proposed assignment, *e.g.*, evidence of radio interference by another station located near enough to render a currently licensed frequency substantially unusable.

(b) *Non-paired channels.* The following table describes the frequencies and Channel Series with F1B or J2B emission which are assignable to ship stations for NB–DP and data transmissions with other ship stations and public coast stations. Public coast stations may receive only on these frequencies.

NON-PAIRED NBDP CHANNELS (KHZ)

| Channel series: | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1 | 4202.5 | 6300.5 | 8396.5 | 12560.0 | 16785.0 | 18893.0 | 22352.0 | 25193.0 |
| 2 | 4203.0 | 6301.0 | 8397.0 | 12560.5 | 16785.5 | 18893.5 | 22352.5 | 25193.5 |
| 3 | 4203.5 | 6301.5 | 8397.5 | 12561.0 | 16786.0 | 18894.0 | 22353.0 | 25194.0 |
| 4 | 4204.0 | 6302.0 | 8398.0 | 12561.5 | 16786.5 | 18894.5 | 22353.5 | 25194.5 |
| 5 | 4204.5 | 6302.5 | 8398.5 | 12562.0 | 16787.0 | 18895.0 | 22354.0 | 25195.0 |
| 6 | 4205.0 | 6303.0 | 8399.0 | 12562.5 | 16787.5 | 18895.5 | 22354.5 | 25195.5 |
| 7 | 4205.5 | 6303.5 | 8399.5 | 12563.0 | 16788.0 | 18896.0 | 22355.0 | 25196.0 |
| 8 | 4206.0 | 6304.0 | 8400.0 | 12563.5 | 16788.5 | 18896.5 | 22355.5 | 25196.5 |
| 9 | 4206.5 | 6304.5 | 8400.5 | 12564.0 | 16789.0 | 18897.0 | 22356.0 | 25197.0 |
| 10 | 4207.0 | 6305.0 | 8401.0 | 12564.5 | 16789.5 | 18897.5 | 22356.5 | 25197.5 |
| 11 | ..... | 6305.5 | 8401.5 | 12565.0 | 16790.0 | 18898.0 | 22357.0 | 25198.0 |
| 12 | ..... | 6306.0 | 8402.0 | 12565.5 | 16790.5 | ..... | 22357.5 | 25198.5 |
| 13 | ..... | 6306.5 | 8402.5 | 12566.0 | 16791.0 | ..... | 22358.0 | 25199.0 |
| 14 | ..... | 6307.0 | 8403.0 | 12566.5 | 16791.5 | ..... | 22358.5 | 25199.5 |
| 15 | ..... | 6307.5 | 8403.5 | 12567.0 | 16792.0 | ..... | 22359.0 | 25200.0 |
| 16 | ..... | 6308.0 | 8404.0 | 12567.5 | 16792.5 | ..... | 22359.5 | 25200.5 |
| 17 | ..... | 6308.5 | 8404.5 | 12568.0 | 16793.0 | ..... | 22360.0 | 25201.0 |
| 18 | ..... | 6309.0 | 8405.0 | 12568.5 | 16793.5 | ..... | 22360.5 | 25201.5 |
| 19 | ..... | 6309.5 | 8405.5 | 12569.0 | 16794.0 | ..... | 22361.0 | 25202.0 |
| 20 | ..... | 6310.0 | 8406.0 | 12569.5 | 16794.5 | ..... | 22361.5 | 25202.5 |
| 21 | ..... | 6310.5 | 8406.5 | 12570.0 | 16795.0 | ..... | 22362.0 | 25203.0 |
| 22 | ..... | 6311.0 | 8407.0 | 12570.5 | 16795.5 | ..... | 22362.5 | 25203.5 |
| 23 | ..... | 6311.5 | 8407.5 | 12571.0 | 16796.0 | ..... | 22363.0 | 25204.0 |
| 24 | ..... | ..... | 8408.0 | 12571.5 | 16796.5 | ..... | 22363.5 | 25204.5 |
| 25 | ..... | ..... | 8408.5 | 12572.0 | 16797.0 | ..... | 22364.0 | 25205.0 |
| 26 | ..... | ..... | 8409.0 | 12572.5 | 16797.5 | ..... | 22364.5 | 25205.5 |
| 27 | ..... | ..... | 8409.5 | 12573.0 | 16798.0 | ..... | 22365.0 | 25206.0 |
| 28 | ..... | ..... | 8410.0 | 12573.5 | 16798.5 | ..... | 22365.5 | 25206.5 |
| 29 | ..... | ..... | 8410.5 | 12574.0 | 16799.0 | ..... | 22366.0 | 25207.0 |
| 30 | ..... | ..... | 8411.0 | 12574.5 | 16799.5 | ..... | 22366.5 | 25207.5 |
| 31 | ..... | ..... | 8411.5 | 12575.0 | 16800.0 | ..... | 22367.0 | 25208.0 |
| 32 | ..... | ..... | 8412.0 | 12575.5 | 16800.5 | ..... | 22367.5 | ..... |
| 33 | ..... | ..... | 8412.5 | 12576.0 | 16801.0 | ..... | 22368.0 | ..... |
| 34 | ..... | ..... | 8413.0 | 12576.5 | 16801.5 | ..... | 22368.5 | ..... |
| 35 | ..... | ..... | 8413.5 | ..... | 16802.0 | ..... | 22369.0 | ..... |
| 36 | ..... | ..... | 8414.0 | ..... | 16802.5 | ..... | 22369.5 | ..... |
| 37 | ..... | ..... | ..... | ..... | 16803.0 | ..... | 22370.0 | ..... |
| 38 | ..... | ..... | ..... | ..... | 16803.5 | ..... | 22370.5 | ..... |
| 39 | ..... | ..... | ..... | ..... | 16804.0 | ..... | 22371.0 | ..... |
| 40 | ..... | ..... | ..... | ..... | ..... | ..... | 22371.5 | ..... |
| 41 | ..... | ..... | ..... | ..... | ..... | ..... | 22372.0 | ..... |
| 42 | ..... | ..... | ..... | ..... | ..... | ..... | 22372.5 | ..... |
| 43 | ..... | ..... | ..... | ..... | ..... | ..... | 22373.0 | ..... |
| 44 | ..... | ..... | ..... | ..... | ..... | ..... | 22373.5 | ..... |

NON-PAIRED NBDP CHANNELS (KHZ)—Continued

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 45 ..... | ..... | ..... | ..... | ..... | ..... | ..... | 22374.0 | ..... |

(c) *Distress and calling.* The frequencies 2174.5 kHz, 4177.5 kHz, 6268.0 kHz, 8376.5 kHz, 12520.0 kHz, and 16695.0 kHz may be used for NBDP and data transmissions by coast and ship stations on a simplex basis for distress and safety purposes.

(d) The frequencies in the 156–162 MHz band available for assignment to public coast stations that are contained in § 80.371(c) of this part are also available for radioprinter and data communications between ship and coast stations using F1B, F2B, F1D, or F2D emission.

[51 FR 31213, Sept. 2, 1986, as amended at 56 FR 9890, Mar. 8, 1991; 57 FR 43407, Sept. 21, 1992; 58 FR 16504, Mar. 29, 1993]

### § 80.363 Frequencies for facsimile.

(a) The non-paired frequencies with F1C, F3C, J2C or J3C emission which are assignable to ship and public coast stations for facsimile are as follows:

(1) *Ship station frequencies.* The following frequencies are available for use by authorized ship stations for facsimile.

ASSIGNABLE SHIP FREQUENCIES FOR FACSIMILE (KHZ)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2070.5 | 4154.5 | 6235.5 | 8302.5 | 12370.5 | 16551.5 | 18847.5 | 22181.5 | 25123.5 |
| 2072.5 | 4169.5 | 6259.5 | 8338.5 | 12418.5 | 16614.5 | 18868.5 | 22238.5 | 25159.5 |
| 2074.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 2076.5 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |

(2) *Coast station frequencies.* The following table describes the exclusive maritime mobile HF frequency bands that are available for assignment to coast stations using 3 kHz channels for facsimile. However, any frequency in the 2000–27500 kHz bands listed in Part 2 of the Commission's Rules as available for shared use by the maritime mobile service and other radio services, except for the 4000–4063 kHz and the 8100–8195 kHz bands, is available for assignment to coast stations for facsimile. Frequency assignments are subject to coordination with government users.

FREQUENCY BANDS FOR COAST FACSIMILE (KHZ)

| | |
|---|---|
| 4221.0– 4351.0 | 16904.5–17242.0 |
| 6332.5– 6501.0 | 19705.0–19755.0 |
| 8438.0– 8707.0 | 22445.5–22696.0 |
| 12658.5–13077.0 | 26122.5–26145.0 |

(b) The frequencies in the 156–162 MHz band available for assignment to public coast stations that are contained in § 80.371(c) of this part are also available for facsimile communications between ship and coast stations using F2C or F3C emission.

[51 FR 31213, Sept. 2, 1986, as amended at 54 FR 40059, Sept. 29, 1989; 56 FR 9893, Mar. 8, 1991; 57 FR 43407, Sept. 21, 1992]

## RADIOTELEPHONY

### § 80.365 Scope.

The following sections describe the carrier frequencies and general conditions of use for the following types of radiotelephony:

—Distress, urgency, safety, call and reply.
—Working.
—Public.
—Private.

### § 80.367 General uses—radiotelephony.

(a) Ship stations communicating with foreign coast stations may operate on any frequency designated by that coast station.

(b) Radiotelephony stations communicating with a Government station may transmit on a Government frequency when authorized to do so by the Government station or agency if the emission, bandwidth and frequency tolerance of the maritime station are

within the same limits as the Government station.

(c) Frequencies assigned to Government radio stations are assignable to non-Government maritime stations for radiotelephony communications with other non-Government stations in connection with activities performed in coordination with or on behalf of the Government.

(d) Frequencies in the 2000–27500 kHz band will be authorized only to ship stations that in addition are authorized to use frequencies in the 156–162 MHz band.

(e) Frequencies in the 2000–2850 kHz band will be authorized to private coast stations that in addition are authorized to use frequencies in the 156–162 MHz band.

(f) Ship and coast stations authorized to use frequencies in both the 2000–27500 kHz and 156–162 MHz bands must not use frequencies in the 2000–27500 kHz band for communications with any other station which is within the VHF service range.

(g) Coast and ship station radiotelephone working frequencies are available for DSC general purpose calling under the provisions of § 80.207(a).

(h) Digital selective calling techniques are not authorized on the frequencies 2182 kHz or 156.800 MHz.

### § 80.369 Distress, urgency, safety, call and reply frequencies.

This section describes the general uses and frequencies assignable to maritime stations for distress, urgency, safety, call and reply radiotelephony communications.

(a) In the 1605–3500 kHz band, the frequency 2182 is an international radiotelephony distress, urgency and safety frequency for ship stations, public and private coast stations, and survival craft stations. It is also used for call and reply by ship stations on a primary basis and by public coast stations on a secondary basis. The carrier frequency 2191 kHz may be used as a supplementary calling frequency in areas of heavy usage of 2182 kHz. All stations must use J3E emission when operating on 2182 and 2191 kHz, except that:

(1) H3E emission may be used on 2182 kHz for communications with foreign coast and ship stations; or,

(2) A3E emission may be used on 2182 kHz by portable survival craft stations, or transmitters authorized for use prior to January 1, 1972. See § 80.203(c).

(b) The frequencies 4125.0 kHz, 6215 kHz, 8291 kHz, 12290 kHz, and 16420 kHz may be used by coast and ship stations on a simplex basis for distress and safety communications. The frequency 4125.0 kHz may also be used for distress and safety communications between aircraft and maritime mobile stations.

(c) The frequency 5167.5 kHz is available to any station for emergency communications in the State of Alaska. Peak envelope power of stations operating on this frequency must not exceed 150 watts. This frequency may also be used by Alaska private fixed stations for calling and listening, but only for establishing communication.

(d) In the 4000–27500 kHz band, the following coast frequencies are available for assignment to public coast stations for call and reply communications. The paired ship frequencies are available for use by authorized ship stations.

CALL AND REPLY FREQUENCY PAIRS IN THE 4000–27500 kHz

| Carrier Frequencies (kHz) | | |
|---|---|---|
| Channel No. | Ship transmit | Coast transmit |
| 421 | [1,2,3] 4125 | [1] 4417 |
| 606 | [2,3] 6215 | [1] 6516 |
| 821 | 8255 | 8779 |
| 1221 | [3] 12290 | 13137 |
| 1621 | [3] 16420 | 17302 |
| 1806 | 18795 | 19770 |
| 2221 | 22060 | 22756 |
| 2510 | 25097 | 26172 |

[1] The frequencies 4125 kHz, 4417 kHz, and 6516 kHz are also available on a simplex basis for private communications, see § 80.373(c) of this part.

[2] The frequencies of 4125 kHz and 6215 kHz are also available on a simplex basis to ship and coast stations for call and reply, provided that the peak envelope power does not exceed 1 kW.

[3] The frequencies 4125 kHz, 6215 kHz, 8291 kHz, 12290 kHz, and 16420 kHz are also available on a simplex basis for distress and safety traffic, see paragraph (b) of this section.

(e) In the 120–156 MHz band the following frequencies are used as indicated:

(1) The frequencies 121.500 MHz and 123.100 MHz using A3E emission are available for scene of action search and rescue operations to ship, coast and aircraft stations. Communications in support of search and rescue operations must employ the frequency 121.500 MHz only when communications on 123.100

MHz or other VHF frequencies is not practicable. Ship, coast and aircraft stations engaged in such communications on 121.500 MHz must shift to 123.100 MHz as soon as possible.

(2) The frequency 156.525 MHz is available for intership, ship and coast general purpose, distress and safety DSC calls.

(3) The frequency 156.800 MHz is the international radiotelephone distress, urgency, safety, call and reply frequency for ship, public and private coast stations. Stations operating on 156.800 MHz must be able to transmit and receive using G3E emission.

(4) The frequency 156.450 MHz (channel 9) is available for intership, ship and coast station general purpose calling by noncommercial vessels, such as recreational boats. Distress, urgency and safety calls should initially be made on 156.800 MHz (channel 16) or, if equipped with DSC, on 156.525 MHz (channel 70).

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35245, Sept. 18, 1987; 54 FR 49995, Dec. 4, 1989; 56 FR 9893, Mar. 8, 1991; 57 FR 19552, May 7, 1992]

## § 80.371 Public correspondence frequencies.

This section describes the radiotelephony working frequencies assignable to ship and public coast stations.

(a) *Working frequencies in the 2000–4000 kHz band.* The following table describes the working carrier frequency pairs in the 2000–4000 kHz band.

Working frequency pairs in the 2000–4000 kHz band

| Region | Carrier frequency (kHz) | |
|---|---|---|
| | Ship transmit | Coast transmit |
| East Coast: | 2031.5 | 2490.0 |
| | 2118.0 | [1] 2514.0 |
| | 2126.0 | 2522.0 |
| | 2142.0 | 2538.0 |
| | 2166.0 | 2558.0 |
| | 2198.0 | 2590.0 |
| | 2366.0 | 2450.0 |
| | 2382.0 | 2482.0 |
| | 2390.0 | 2566.0 |
| | 2400.0 | 2400.0 |
| | 2406.0 | 2442.0 |
| | 2406.0 | 2506.0 |
| West Coat: | 2003.0 | 2450.0 |
| | 2009.0 | 2442.0 |
| | 2009.0 | 2566.0 |
| | 2031.5 | 2566.0 |
| | 2126.0 | 2522.0 |
| | 2206.0 | 2598.0 |

Working frequency pairs in the 2000–4000 kHz band

| Region | Carrier frequency (kHz) | |
|---|---|---|
| | Ship transmit | Coast transmit |
| | 2382.0 | 2466.0 |
| | 2406.0 | 2506.0 |
| | 2430.0 | 2482.0 |
| Gulf Coast: | 2009.0 | 2466.0 |
| | 2134.0 | 2530.0 |
| | 2142.0 | 2538.0 |
| | [1] 2158.0 | [1] 2550.0 |
| | 2166.0 | 2558.0 |
| | 2206.0 | 2598.0 |
| | 2366.0 | 2450.0 |
| | 2382.0 | 2482.0 |
| | 2430.0 | 2572.0 |
| | 2458.0 | 2506.0 |
| Great Lakes [2]: | 2118.0 | 2514.0 |
| | 2158.0 | 2550.0 |
| | 2206.0 | 2582.0 |
| Alaska: | 2131.0 | 2309.0 |
| | 2134.0 | 2312.0 |
| | 2237.0 | 2397.0 |
| | 2240.0 | 2400.0 |
| Hawaii | 2134.0 | 2530.0 |
| Caribbean: | 2009.0 | 2506.0 |
| | [3] 2086.0 | 2585.0 |
| | 2134.0 | 2530.0 |
| Guam | 2009.0 | 2506.0 |

[1] Unlimited hours of use from December 15 to April 1 and day only from April 1 to December 15. Harmful interference must not be caused to any ship station in the Great Lakes region.

[2] In the Great Lakes region 2206 kHz is not available for transmission to U.S. ships except in the case of distress. U.S. coast stations in the Great Lakes area may use 2514, 2550 and 2582 kHz on a shared basis with coast stations of Canada. Except in the case of distress, the frequency 2550 kHz must not be used for transmission to ship stations of Canada since the associated ship station transmit frequency 2158 kHz is not available to Canadian ship stations for transmission and 2582 kHz must not be used for public correspondence transmissions to U.S. ship stations since the associated ship transmit frequency 2206 kHz is not available to U.S. ship stations for transmissions except in the case of distress.

[3] Limited to a peak envelope power of 150 watts.

(b) *Working frequencies in the 4000–25700 kHz band.* This paragraph describes the working carrier frequencies in the 4000–27500 kHz band.

(1) The following table specifies the carrier frequencies available for assignment to public coast stations. The paired ship frequencies are available for use by authorized ship stations.

TABLE A—PUBLIC CORRESPONDENCE (DUPLEX CHANNELS)—Continued

[Working carrier frequency pairs in the 4000–27500 kHz band]

| Region | Channel No. | Carrier frequencies (kHz) | |
|---|---|---|---|
| | | Ship transmit | Coast transmit |
| East Coast | 403 | 4071.0 | 4363.0 |
| | 410 | 4092.0 | 4384.0 |
| | 411 | 4095.0 | 4387.0 |
| | 412 | 4098.0 | 4390.0 |
| | 416 | 4110.0 | 4402.0 |
| | 417 | 4113.0 | 4405.0 |
| | 422 | 4128.0 | 4420.0 |

TABLE A—PUBLIC CORRESPONDENCE (DUPLEX CHANNELS)—Continued

[Working carrier frequency pairs in the 4000–27500 kHz band]

| Region | Channel No. | Carrier frequencies (kHz) | |
|---|---|---|---|
| | | Ship transmit | Coast transmit |
| | 423 | 4131.0 | 4423.0 |
| | 802 | 8198.0 | 8722.0 |
| | 805 | 8207.0 | 8731.0 |
| | 808 | 8216.0 | 8740.0 |
| | 810 | 8222.0 | 8746.0 |
| | 811 | 8225.0 | 8749.0 |
| | 814 | 8234.0 | 8758.0 |
| | 815 | 8237.0 | 8761.0 |
| | 825 | 8267.0 | 8791.0 |
| | 826 | 8270.0 | 8794.0 |
| | 831 | 8285.0 | 8809.0 |
| | 1203 | 12236.0 | 13083.0 |
| | 1206 | 12245.0 | 13092.0 |
| | 1208 | 12251.0 | 13098.0 |
| | 1209 | 12254.0 | 13101.0 |
| | 1210 | 12257.0 | 13104.0 |
| | 1211 | 12260.0 | 13107.0 |
| | 1215 | 12272.0 | 13119.0 |
| | 1222 | 12293.0 | 13140.0 |
| | 1223 | 12296.0 | 13143.0 |
| | 1228 | 12311.0 | 13158.0 |
| | 1230 | 12317.0 | 13164.0 |
| | 1601 | 16360.0 | 17242.0 |
| | 1605 | 16372.0 | 17254.0 |
| | 1609 | 16384.0 | 17266.0 |
| | 1610 | 16387.0 | 17269.0 |
| | 1611 | 16390.0 | 17272.0 |
| | 1616 | 16405.0 | 17287.0 |
| | 1620 | 16417.0 | 17299.0 |
| | 1626 | 16435.0 | 17317.0 |
| | 1631 | 16450.0 | 17332.0 |
| | 2201 | 22000.0 | 22696.0 |
| | 2205 | 22012.0 | 22708.0 |
| | 2210 | 22027.0 | 22723.0 |
| | 2215 | 22042.0 | 22738.0 |
| | 2216 | 22045.0 | 22741.0 |
| | 2222 | 22063.0 | 22759.0 |
| | 2236 | 22105.0 | 22801.0 |
| West Coast | 401 | 4065.0 | 4357.0 |
| | 416 | 4110.0 | 4402.0 |
| | 417 | 4113.0 | 4405.0 |
| | 804 | 8204.0 | 8728.0 |
| | 809 | 8219.0 | 8743.0 |
| | 814 | 8234.0 | 8758.0 |
| | 1201 | 12230.0 | 13077.0 |
| | 1202 | 12233.0 | 13080.0 |
| | 1203 | 12236.0 | 13083.0 |
| | 1229 | 12314.0 | 13161.0 |
| | 1230 | 12317.0 | 13164.0 |
| | 1602 | 16363.0 | 17245.0 |
| | 1603 | 16366.0 | 17248.0 |
| | 1624 | 16429.0 | 17311.0 |
| | 2214 | 22039.0 | 22735.0 |
| | 2223 | 22066.0 | 22762.0 |
| | 2228 | 22081.0 | 22777.0 |
| | 2236 | 22105.0 | 22801.0 |
| Gulf Coast | 404 | 4074.0 | 4366.0 |
| | 405 | 4077.0 | 4369.0 |

TABLE A—PUBLIC CORRESPONDENCE (DUPLEX CHANNELS)—Continued

[Working carrier frequency pairs in the 4000–27500 kHz band]

| Region | Channel No. | Carrier frequencies (kHz) | |
|---|---|---|---|
| | | Ship transmit | Coast transmit |
| | 414 | 4104.0 | 4396.0 |
| | 419 | 4119.0 | 4411.0 |
| | 824 | 8264.0 | 8788.0 |
| | 829 | 8279.0 | 8803.0 |
| | 830 | 8282.0 | 8806.0 |
| | 1212 | 12263.0 | 13110.0 |
| | 1225 | 12302.0 | 13149.0 |
| | 1226 | 12305.0 | 13152.0 |
| | 1607 | 16378.0 | 17260.0 |
| | 1632 | 16453.0 | 17335.0 |
| | 1641 | 16480.0 | 17362.0 |
| | 2227 | 22078.0 | 22774.0 |
| | 2231 | 22090.0 | 22786.0 |
| | 2237 | 22108.0 | 22804.0 |
| Great Lakes | 405 | 4077.0 | 4369.0 |
| | 409 | 4089.0 | 4381.0 |
| | 418 | 4116.0 | 4408.0 |
| | 826 | 8270.0 | 8794.0 |
| Hawaii | 418 | 4116.0 | 4408.0 |
| | 808 | 8216.0 | 8740.0 |
| | 1222 | 12293.0 | 13140.0 |
| | 1601 | 16360.0 | 17242.0 |
| Caribbean | 604 | 6209.0 | 6510.0 |
| | 605 | 6212.0 | 6513.0 |
| | 1602 | 16363.0 | 17245.0 |
| | 1603 | 16366.0 | 17248.0 |
| | 2223 | 22066.0 | 22762.0 |

(2) The following table specifies the additional carrier frequencies available for assignment to public coast stations for public correspondence. The paired ship frequencies are available for use by authorized ship stations. The specific frequency assignment available to public coast stations for a particular geographic area is indicated by an ''x'' under the appropriate column. Table B is based on the initial Appendix 25 Allotment Arrangement published by the International Frequency Registration Board (IFRB) (*see* IFRB Circular-letter No. 836, dated September 28, 1990). The allotment areas are in accordance with the ''Standard Defined Areas'' as identified in the Appendix 25 Planning System and indicated in the Preface to the International Frequency List (IFL) (*see* IFRB Circular-letter No. 843, dated October 31, 1990).

TABLE B—PUBLIC CORRESPONDENCE (ADDITIONAL DUPLEX CHANNELS)

[Working carrier frequency pairs in th 4000–27500 kHz band]

| Channel | Ship transmit | Coast transmit | USA–E | USA–W | USA–S | USA–C | VIR | HWA | ALS | PTR | GUM |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Carrier frequencies (kHz) | | | | | | | | | | |
| 427 | 4143.0 | 4435.0 | x | x | x | x | x | x | x | — | x |
| 428 | 4060.0 | 4351.0 | x | x | x | x | x | x | x | x | x |
| 607 | 6218.0 | 6519.0 | x | x | x | x | x | x | x | x | x |
| 836 | 8113.0 | 8713.0 | x | x | x | x | x | x | x | x | x |
| 837 | 8128.0 | 8716.0 | x | x | x | x | x | x | x | x | x |
| 1233 | 12326.0 | 13173.0 | x | x | x | x | x | x | x | x | x |
| 1234 | 12329.0 | 13176.0 | — | x | x | — | — | x | x | — | x |
| 1235 | 12332.0 | 13179.0 | x | x | x | x | x | x | x | x | x |
| 1236 | 12335.0 | 13182.0 | — | x | x | — | — | x | — | — | — |
| 1237 | 12338.0 | 13185.0 | x | — | x | x | x | — | — | x | — |
| 1642 | 16483.0 | 17365.0 | x | x | x | x | x | x | x | x | x |
| 1643 | 16486.0 | 17368.0 | x | x | x | x | x | x | x | x | x |
| 1644 | 16489.0 | 17371.0 | x | x | x | x | — | x | x | — | x |
| 1645 | 16492.0 | 17374.0 | x | x | x | x | x | x | x | x | x |
| 1646 | 16495.0 | 17377.0 | — | x | — | — | — | — | — | — | — |
| 1647 | 16498.0 | 17380.0 | x | x | x | x | — | x | x | — | x |
| 1648 | 16501.0 | 17383.0 | — | x | — | x | x | x | x | x | x |
| 1801 | 18780.0 | 19755.0 | x | x | x | x | x | x | x | x | x |
| 1802 | 18783.0 | 19758.0 | x | — | x | x | x | — | — | x | — |
| 1803 | 18786.0 | 19761.0 | x | x | — | x | x | x | x | x | x |
| 1804 | 18789.0 | 19764.0 | — | x | x | — | — | x | x | — | — |
| 1805 | 18792.0 | 19767.0 | — | x | — | — | — | x | x | — | — |
| 1807 | 18798.0 | 19773.0 | x | x | x | x | x | x | x | x | x |
| 1808 | 18801.0 | 19776.0 | x | x | x | x | x | x | x | x | x |
| 2241 | 22120.0 | 22816.0 | x | x | x | x | x | x | x | x | x |
| 2242 | 22123.0 | 22819.0 | x | x | x | x | x | x | x | x | x |
| 2243 | 22126.0 | 22822.0 | x | x | x | x | x | x | x | x | — |
| 2244 | 22129.0 | 22825.0 | — | x | — | — | — | x | x | — | — |
| 2245 | 22132.0 | 22828.0 | — | x | x | — | — | x | x | — | — |
| 2246 | 22135.0 | 22831.0 | x | x | x | x | — | x | x | — | x |
| 2247 | 22138.0 | 22834.0 | x | x | x | x | x | x | x | — | x |
| 2501 | 25070.0 | 26145.0 | x | x | x | x | — | x | x | — | x |
| 2502 | 25073.0 | 26148.0 | x | x | x | x | x | x | x | x | — |
| 2503 | 25076.0 | 26151.0 | x | x | x | x | x | x | x | — | — |
| 2504 | 25079.0 | 26154.0 | x | x | x | x | x | x | x | x | x |

(3) The following table specifies the non-paired carrier frequencies that are available for assignment to public coast stations for simplex operations subject to the provision of paragraph (b)(4) of this section. These frequencies are available for use by authorized ship stations for transmissions to coast stations (simplex operations). Assignments on these frequencies must accept interference. They are shared with government users and are considered ''common use'' frequencies under the international Radio Regulations. They cannot be notified for inclusion in the Master International Frequency Register, which provides stations with interference protection, but may be listed in the international List of Coast Stations. (*See* Radio Regulation No. 1220 and Recommendation 304.)

PUBLIC CORRESPONDENCE (SIMPLEX)

[Non-paired radiotelephony frequencies in the 4000–27500 kHz Band[1] Carrier Frequencies (kHz)]

| | | | |
|---|---|---|---|
| 16537 | 18825 | 22174 | 25100 |
| 16540 | 18828 | 22177 | 25103 |
| | 18831 | ..... | 25106 |
| | 18834 | ..... | 25109 |
| | 18837 | ..... | 25112 |

[1] Coast stations limited to a maximum transmitter power of 1 kW (PEP).

(4) Applicants for these public coast frequencies specified in this section must submit a substantial showing of need based on the following factors:

(i) A schedule of each currently licensed working frequency in the 4000–27500 kHz band and the expected use of the proposed frequencies;

(ii) For additional frequencies within the same MHz band, a factual showing of the 3 busiest hours of any 4 days within a consecutive 10 day period for each of the 2 months immediately preceding the filing of the application indicating that the applicant has used its currently assigned frequencies within the same MHz band an aggregate average of at least 40% of the 3 busiest hours of each day for exchanging communications;

(iii) Any other facts that support the need for the proposed assignment, e.g., evidence of radio interference by another station located near enough to render a currently licensed frequency substantially unusable; and

(iv) For simplex frequencies listed in paragraph (b)(3) of this section, an additional showing supporting the use of simplex rather than duplex frequencies for the proposed situation.

(c) *Working frequencies in the 156–162 MHz band.* Initial grants will be limited to one working frequency. An additional frequency may be assigned when the assigned working frequency is also used by a foreign station near enough to result in harmful radio interference by simultaneous operation or when the channel occupancy of the assigned frequency or frequencies exceeds 40 percent during its busiest hours of operation. An application for assignment of an additional working frequency based on channel occupancy must be accompanied by a factual showing that for any 4 days within a 10-consecutive-day period of station operation in each of 2 months immediately prior to the filing of the application, the assigned frequency or frequencies was in average daily use for exchanging communications at least 40 percent of the 3 busiest hours of each day, of which not more the half of the use time was waiting or setup time. For purposes of this paragraph, an application for a frequency which overlaps by 70 percent or more the coverage area of a frequency already authorized for use by a station licensed to the same applicant or substantially the same applicant will be considered an application for an additional frequency.

Working Carrier Frequency Pairs in the 156–162 MHz Band[1, 4]

| Channel designator | Carrier frequency (MHz) | |
|---|---|---|
| | Ship transmit | Coast transmit |
| 24 ..... | 157.200 | 161.800 |
| 84 ..... | 157.225 | 161.825 |
| 25 ..... | 157.250 | 161.850 |
| 85[2] ..... | 157.275 | 161.875 |
| 26 ..... | 157.300 | 161.900 |
| 86 ..... | 157.325 | 161.925 |
| 27 ..... | 157.350 | 161.950 |
| 87 ..... | 157.375 | 161.975 |
| 28 ..... | 157.400 | 162.000 |
| 88[3] ..... | 157.425 | 162.025 |

[1] For special assignment of frequencies in this band in certain areas of Washington State, the Great Lakes and the east coast of the United States pursuant to arrangements between the United States and Canada, see subpart B of this part.

[2] The frequency pair 157.275/161.875 MHz is available for assignment on a primary basis to ship and public coast stations. In Alaska it is also available on a secondary basis to private mobile repeater stations.

[3] Within 120 km (75 miles) of the United States/Canada border, in the area of the Puget Sound and the Strait of Juan de Fuca and its approaches, the frequency 157.925 MHz is available for use by ship stations for public correspondence communications only. One hundred twenty kilometers (75 miles) from the United States/Canada border 157.425 MHz is available for intership and commercial communications. Outside the Puget Sound area and its approaches and the Great Lakes, 157.425 MHz is available for communications between commercial fishing vessels and associated aircraft while engaged in commercial fishing activities.

[4] Except for the frequency pair 157.425/162.025 MHz, these frequencies may be shared with stations in the private land mobile radio service, within the 48 contiguous states, under the terms of operation described in § 90.283 of this chapter.

(d) *Working frequencies in the Mississippi River System.* The Mississippi River System includes the Mississippi River and connecting navigable waters other than the Great Lakes. The following simplex frequencies are available for assignment to public coast stations serving the Mississippi River System for radiotelephony communications. These simplex frequencies also are available for use by authorized ship stations within communication service range, whether or not the ship is operating within the confines of the Mississippi River System.

MISSISSIPPI RIVER SYSTEM WORKING FREQUENCIES; CARRIER FREQUENCIES (KHZ)

| | | | | | |
|---|---|---|---|---|---|
| 2086 [1] | 4065 | 6209 | 8201 | 12362 | 16543 |
| 2782 | 4089 | 6212 | 8213 | 12365 | 16546 |
| | 4116 | 6510 | 8725 | ..... | ..... |
| | 4408 | 6513 | 8737 | ..... | ..... |

[1] Limited to a maximum transmitter output of 150 watts (PEP).

(e) *Canada/U.S.A. channeling arrangement frequencies.* The VHF frequencies assignable to ship and coast stations in the State of washington and their usage limitations purusant to the Canada/U.S.A. channeling arrangement are described in subpart B of this part.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35245, Sept. 18, 1987; 52 FR 48439, Dec. 22, 1987; 56 FR 9894, Mar. 8, 1991; 57 FR 26779, June 16, 1992; 58 FR 44953, Aug. 25, 1993; 60 FR 35510, July 10, 1995]

## § 80.373 Private communications frequencies.

This section describes the carrier frequencies assignable for ship-to-ship and ship-to-coast private communications.

(a) *Special requirements for private coast stations.* Assignment to private coast stations of radiotelephony frequencies in the 2000–27500 kHz band are subject to the following:

(1) Private coast stations must see J3E emission.

(2) On 2182 kHz, private coast stations must be capable of receiving J3E and H3E emissions.

(3) Except in the Mississippi River System and Great Lakes, private coast stations serving lakes or rivers are not authorized on the 2000–2850 kHz band.

(4) Private coast stations may use DSC for calling on their assigned frequencies in the 2000–27500 kHz band and on those frequencies in the 156–162 MHz band which are allocated for maritime control, commercial and non-commercial communications.

(b) *Frequencies in the 2000–27500 kHz band for intership safety and other communications.* This paragraph describes the geographic areas of operation and the frequencies and liminations in the band available for assignment for intership safety and operational simplex radiotelephone communications.

(1) *Frequencies avaiable.*

| Carrier frequency (kHz) | Geographic area |
|---|---|
| 2003.0 ..... | Great Lakes only. |
| 2082.5 [1, 2] ..... | All areas. |
| 2093.0 [1] ..... | All areas. |
| 2142.0 ..... | Pacific coast areas south of 42 degrees north on a day basis only. |
| 2203.00 [2] ..... | Gulf of Mexico. |
| 2214.0 [1] ..... | All areas. |
| 2638.0 [1] ..... | All areas. |
| 2670.0 ..... | All areas. |
| 2738.0 [1] ..... | All areas except the Great Lakes. |
| 2830.0 ..... | Gulf of Mexico only. |

[1] Limited to a peak envelope power of 150 watts.

[2] Available on a secondary basis for intership communications by ships involved in non-commercial fishing.

(2) Except for 2093.0 kHz and 2214.0 kHz the frequencies shown in paragraph (b)(1) of this section are authorized primarily for intership safety communications in the indicated geographic area.

(3) Except for the frequencies 2093.0 kHz, 2214.0 Khz and 2670.0 kHz the frequencies shown in paragraph (b)(1) of this section may be used on a non-interference basis to safety communications, for operational communications and in the case of commercial transport ships and ships of municipal and state governments, for business communications.

(4) Ship stations may communicate with government coast stations on

2003.0 kHz about passage of vessels. Interference must not be caused to communications on the St. Lawrence Seaway and on the St. Mary's River.

(5) Ship stations may use 2670.0 kHz for communications with coast and ship stations of the U.S. Coast Guard. When a ship is not equipped to transmit on 2670.0 kHz or in the band 156–162 MHz the frequency 2003.0 kHz may be used on the Great Lakes for communications must not cause harmful interference to intership safety, operational and business communications.

(6) Navigational communications between ships and private coast stations may be exchanged on 2738.0 kHz and 2830.0 kHz. The frequencies 2214.0 kHz2738.0 kHz and 2830.0 kHz are assignable to private coast stations upon a showing that they need to communicate with commercial transport or Government ships. Private coast station applicants must show that public coast stations do not provide the required communications and harmful interference will not be caused to the intership use of these frequencies. The transmitter power must not exceed 150 watts. If 2214.0 kHz is authorized for ships, intership communication is also authorized. The geographic limitations to the frequencies 2738.0 KHz and 2830.0 Khz do not prohibit intership communication of less than 320 km (200 statute miles) when only one of the ship stations is within a permitted use geographic area.

(7) Private aircraft stations may communicate with ship stations on 2738.0 kHz and 2830.0 kHz if:

(i) The communications are limited to business or operational needs of the vessel while it is engaged in commercial fishing activities in the open sea or adjacent waters;

(ii) Harmful interference must not be caused to intership communications;

(iii) The maximum output power used for such communication must not exceed 25 watts;

(c) *Frequencies in the 2000–27500 kHz bands for business and operational communications.* (1) The following simplex frequencies in the 2000–27500 kHz band are available for assignment to private coast stations for business and operational radiotelephone communications. These simplex frequencies also are available for use by authorized ship stations for business and operational radiotelephone communications.

BUSINESS AND OPERATIONAL FREQUENCIES IN THE 2000–27500 KHZ BAND; CARRIER FREQUENCIES (KHZ)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2065.0 [1,3] | 4146 | 6224 | 8294 | 12353 | 16528 | 18840 | 22159 | 25115 |
| 2079.0 [1,3] | 4149 | 6227 | 8297 | 12356 | 16531 | 18843 | 22162 | 25118 |
| 2096.5 [1] | 4125 [2] | 6230 | ..... | 12359 | 16534 | ..... | 22165 | ..... |
| 3023.0 [4] | 4417 [5] | 6516 | ..... | ..... | ..... | ..... | 22168 | ..... |
| | 5680 [4] | ..... | ..... | ..... | ..... | ..... | 22171 | ..... |

[1] Limited to peak envelope power of 150 watts.
[2] The frequency 4125 kHz is also available for distress and safety, and calling and reply, see § 80.369 (b) and (d) of this part.
[3] The frequencies 2065.0 kHz and 2079.0 kHz must be coordinated with Canada.
[4] The frequencies 3023.0 kHz and 5680.0 kHz are available to private coast stations licensed to state and local governments and any scene-of-action ships for the purpose of search and rescue scene-of-action coordination including communications with any scene-of-action aircraft.
[5] The frequency 6516 kHz is limited to daytime operations. The frequencies 4417 kHz and 6516 kHz are also available for calling and reply, see § 80.369(d) of this part.

(2) Assignment of these frequencies is subject to the following general limitations:

(i) These frequencies are shared and are not available for the exclusive use of any station. No more than one frequency from each of the frequency bands will be authorized to a private station without justification;

(ii) The emissions must be J3E except that when DSC is used the emission must be F1B or J2B; and

(iii) Maximum transmitter output power is limited to 1 kW except as noted.

(d) *Radioprinter frequencies.* (1) The following table describes the bands available for radioprinter simplex communications between ship and private coast stations:

| Frequency bands (kHz) | |
|---|---|
| 2107–2170 | 4750–4850 |
| 2194–2495 | 5060–5450 |
| 2505–2850 | 5730–5950 |
| 3155–3400 | 7300–8100 |
| 4438–4650 | ..... |

(2) Ship stations may conduct radioprinter communications with private coast stations on frequencies within these bands which are assigned to their associated private coast stations;

(3) Any alphanumeric code may be used; and

(4) The bandwidth of radioprinter communications on frequencies within these bands must not exceed 300 Hz.

(e) *Frequencies in the 2000–27500 kHz band for medical advisory communications.* (1) Private coast stations may be authorized to use any frequencies within the 2030–27500 kHz band that are allocated to Government and non-Government fixed or fixed and mobile radio services shown in the Commission's Table of Frequency Allocations contained in § 2.106 of this chapter for communications with ship stations to provide medical treatment information or advice. Assignment of these frequencies is subject to the following limitations:

(2) No protection is provided from harmful interference caused by foreign stations; and

(3) A private coast station must cease operations on a frequency that causes harmful interference to a foreign station.

(f) *Frequencies in the 156–162 MHz band.* The following tables describe the carrier frequencies available in the 156–162 MHz band for radiotelephone communications between ship and private coast stations. (Note: the letter ''A'' following the channel designator indicates simplex operation on a channel designated internationally as a duplex channel.)

| Frequencies in the 156–162 MHz band | | | |
|---|---|---|---|
| Channel designator | Carrier frequency (MHz) | | Points of communication (Intership and between coast and ship unless otherwise indicated) |
| | Ship transmit | Coast transmit | |
| **Port Operations** | | | |
| 01A [1] ..... | 156.050 | 156.050 | |
| 63A [1] ..... | 156.175 | 156.175 | |
| 05A [2] ..... | 156.250 | 156.250 | |
| 65A ..... | 156.275 | 156.275 | |
| 66A ..... | 156.325 | 156.325 | |
| 12 [3] ..... | 156.600 | 156.600 | |
| 73 ..... | 156.675 | 156.675 | |
| 14 [3] ..... | 156.700 | 156.700 | |
| 74 ..... | 156.725 | 156.725 | |
| 77 [4] ..... | 156.875 | ..... | Intership only. |
| 20A [12] ..... | 157.000 | ..... | Intership only. |
| **Navigational (Bridge-to-Bridge) [5]** | | | |
| 13 [6] ..... | 156.650 | 156.650 | |
| 67 [7] ..... | 156.375 | 156.375 | |
| **Commercial** | | | |
| 01A [1] ..... | 156.050 | 156.050 | |
| 63A [1] ..... | 156.175 | 156.175 | |
| 07A ..... | 156.350 | 156.350 | |
| 67 [7] ..... | 156.375 | ..... | Intership only. |
| 08 ..... | 156.400 | ..... | Do. |
| 09 ..... | 156.450 | 156.450 | |
| 10 ..... | 156.500 | 156.500 | |
| 11 [3] ..... | 156.550 | 156.550 | |
| 18A ..... | 156.900 | 156.900 | |
| 19A ..... | 156.950 | 156.950 | |
| 79A ..... | 156.975 | 156.975 | |
| 80A ..... | 157.025 | 157.025 | |
| 88A [8] ..... | 157.425 | ..... | Intership only. |
| 72 [14] ..... | 156.625 | ..... | Internship only. |
| **Digital Selective Calling** | | | |
| 70 [15] ..... | 156.525 | 156.525 | |
| **Noncommercial** | | | |
| 68 ..... | 156.425 | 156.425 | |
| 09 [16] ..... | 156.450 | 156.450 | |
| 69 ..... | 156.475 | 156.475 | |
| 71 ..... | 156.575 | 156.575 | |
| 72 ..... | 156.625 | ..... | Intership only. |
| 78A ..... | 156.925 | 156.925 | |
| 79A ..... | 156.975 | 156.975 | Great Lakes only. |
| 80A ..... | 157.025 | 157.025 | Do. |
| 67 [14] ..... | 156.375 | ..... | Internship only. |
| **Distress, Safety and Calling** | | | |
| 16 ..... | 156.800 | 156.800 | EPRIB |
| **Intership Safety** | | | |
| 06 ..... | 156.300 | ..... | a. Intership, or b. For SAR: Ship and aircraft for the U.S. Coast Guard. |
| **Environmental** | | | |
| 15 [13] ..... | ..... | 156.750 | Coast to ship only. |
| **Maritime Control** | | | |
| 17 [9, 10] ..... | 156.850 | 156.850 | |

| Frequencies in the 156–162 MHz band | | | |
|---|---|---|---|
| Channel designator | Carrier frequency (MHz) | | Points of communication (Intership and between coast and ship unless otherwise indicated) |
| | Ship transmit | Coast transmit | |
| Liaison, U.S. Coast Guard | | | |
| 22A [11] ..... | 157.100 | 157.100 | Ship, aircraft, and coast stations of the U.S. Coast Guard and at Lake Mead, Nev., ship and coast stations of the National Park Service, U.S. Department of the Interior. |

[1] 156.050 MHz and 156.175 MHz are available for port operations and commercial communications purposes when used only within the U.S. Coast Guard designated Vessel Traffic Services (VTS) area of New Orleans, on the lower Mississippi River from the various pass entrances in the Gulf of Mexico to Devil's Swamp Light at River Mile 242.4 above head of passes near Baton Rouge.

[2] 156.250 MHz is available for port operations communications use only within the U.S. Coast Guard designated VTS radio protection areas of New Orleans and Houston described in § 80.383.

[3] 156.550 MHz, 156.600 MHz and 156.700 MHz are available in the U.S. Coast Guard designated port areas only for VTS communications and in the Great Lakes available primarily for communications relating to the movement of ships in sectors designated by the St. Lawrence Seaway Development Corporation or the U.S. Coast Guard. The use of these frequencies outside VTS and ship movement sector protected areas is permitted provided they cause no interference to VTS and ship movement communications in thier respective designated sectors.

[4] Use of 156.875 MHz is limited to communications with pilots regarding the movement and docking of ships. Normal output power must not exceed 1 watt.

[5] 156.375 MHz and 156.650 MHz are available primarily for intership navigational communications. These frequencies are available between coast and ship on a secondary basis when used on or in the vicinity of locks or drawbridges. Normal output power must not exceed 1 watt. Maximum output power must not exceed 10 watts for coast stations or 25 watts for ship stations.

[6] On the Great Lakes, in addition to bridge-to-bridge communications, 156.650 MHz is available for vessel control purposes in established vessel traffic systems. 156.650 MHz is not available for use in the Mississippi River from South Pass Lighted Whistle Buoy ''2'' and Southwest Pass entrance Midchannel Lighted Whistle Buoy to mile 242.4 above Head of Passes near Baton Rouge. Additionally it is not available for use in the Mississippi River-Gulf Outlet, the Mississippi River-Gulf Outlet Canal, and the Inner Harbor Navigational Canal, except to aid the transition from these areas.

[7] Use of 156.375 MHz is available for navigational communications only in the Mississippi River from South Pass Lighted Whistle Buoy ''2'' and Southwest Pass entrance Mid-channel Lighted Whistle Buoy to mile 242.4 above head of Passes near Baton Rouge, and in addition over the full length of the Mississippi River-Gulf Outlet Canal from entrance to its junction with the Inner Harbor Navigation Canal, and over the full length of the Inner Harbor Navigation Canal from its junction with the Mississippi River to its entry to Lake Pontchartrain at the New Seabrook vehicular bridge.

[8] Within 120 km (75 miles) of the United States/Canada border, in the area of the Puget Sound and the Strait of Juan de Fuca and its approaches, 157.425 MHz is half of the duplex pair designated as Channel 88. In this area, Channel 88 is available to ship stations for communications with public coast stations only. More than 120 km (75 miles) from the United States/Canada border in the area of the Puget Sound and the Strait of Juan de Fuca, its approaches, the Great Lakes, and the St. Lawrence Seaway, 157.425 MHz is available for intership and commercial communications. Outside Puget Sound area and its approaches and the Great Lakes, 157.425 MHz is also available for communications between commercial fishing vessels and associated aircraft while engaged in commercial fishing activities.

[9] When the frequency 156.850 MHz is authorized, it may be used additionally for search and rescue training exercises conducted by state or local governments.

[10] The frequency 156.850 MHz is additionally available to coast stations on the Great Lakes for transmission of scheduled Coded Marine Weather Forecasts (MAFOR), Great Lakes Weather Broadcast (LAWEB) and unscheduled Notices to Mariners or Bulletins. F3C and J3C emissions are permitted. Coast Stations on the Great Lakes must cease weather broadcasts which cause interference to stations operating on 156.800 MHz until the interference problem is resolved.

[11] The frequency 157.100 MHz is authorized for search and rescue training exercises by state or local government in conjunction with U.S. Coast Guard stations. Prior U.S. Coast Guard approval is required. Use must cease immediately on U.S. Coast Guard request.

[12] The duplex pair for channel 20 (157.000/161.600 MHz) may be used for ship to coast station communications.

[13] Available for assignment to coast stations, the use of which is in accord with an agreed program, for the broadcast of information to ship stations concerning the environmental conditions in which vessels operate, i.e., weather; sea conditions; time signals; notices to mariners; and hazards to navigation.

[14] Available only in the Puget Sound and the Strait of Juan de Fuca.

[15] The frequency 156.525 MHz is to be used exclusively for distress, safety and calling using digital selective calling techniques. No other uses are permitted.

[16] The frequency 156.450 MHz is available for intership, ship and coast general purpose calling by noncommercial vessels, such as recreational boats and private coast stations.

(g) On-board communications: This section describes the carrier frequency pairs assignable for on-board mobile radiotelephony communications. The center of the on-board repeater antenna must not be located more than 3 meters (10 feet) above the ship's working deck. These frequencies are available on a shared basis with stations in the Business Radio Service.

| Channel | Frequencies for On-Board Communications | |
|---|---|---|
| | Carrier frequency (MHz) | |
| | On-board mobile station | On-board repeater station [1] |
| 1 ..... | 467.750 | 457.525 |
| 2 ..... | 467.775 | 457.550 |
| 3 ..... | 467.800 | 457.575 |
| 4 ..... | 467.825 | 457.600 |

[1] These frequencies may also be assigned to mobile stations for single frequency simplex operation.

(h) *Repeater frequencies in Alaska.* The following frequencies are assignable on a primary basis to public and on a secondary basis to private coast stations in Alaska for maritime repeater operations:

Repeater receive: 157.275 MHz
Repeater transmit: 161.875 MHz

(i) *Frequencies in the 1600–5450 kHz band for private communications in Alaska.* The following simplex frequencies are available for assignment to private fixed stations located in the State of

Alaska for radiotelephony communications with ship stations. These simplex frequencies are available for use by authorized ship stations for radiotelephony communications with private fixed stations located in the State of Alaska.

Private communications in Alaska Carrier frequencies (kHz)

| | | |
|---|---|---|
| 1619.0 | 2382.0 | 2563.0 |
| 1622.0 | 2419.0 | 2566.0 |
| 1643.0 | 2422.0 | 2590.0 |
| 1646.0 | 2427.0 | 2616.0 |
| 1649.0 | 2430.0 | 3258.0 |
| 1652.0 | 2447.0 | [1] 3261.0 |
| 1705.0 | 2450.0 | 4366.0 |
| 1709.0 | 2479.0 | 4369.0 |
| 1712.0 | 2482.0 | 4396.0 |
| 2003.0 | 2506.0 | 4402.0 |
| 2006.0 | 2509.0 | 4420.0 |
| 2115.0 | 2512.0 | 4423.0 |
| 2118.0 | 2535.0 | [2] 5167.5 |
| 2379.0 | 2538.0 | |

[1] Ship stations must limit use of 3261.0 kHz to communications over distances which cannot be reached by the use of frequency below 2700 kHz or above 156.000 MHz.

[2] The frequency 5167.5 kHz is available for emergency communications in Alaska. Peak envelope power of stations operating on this frequency must not exceed 150 watts. When a station in Alaska is authorized to use 5167.5 kHz, such station may also use this frequency for calling and listening for the purpose of establishing communications.

(j) *Frequencies for portable ship stations.* VHF frequencies authorized for stations authorized carrier frequencies in the 156.275 MHz to 157.450 MHz and 161.575 MHz to 162.025 MHz bands may also be authorized as marine utility stations. Marine-utility stations on shore must not cause interference to any VHF or coast station, VHF or UHF land mobile base station, or U.S. Government station.

[51 FR 31213, Sept. 2, 1986; 51 FR 34984, Oct. 1, 1986, as amended at 52 FR 35245, Sept. 18, 1987; 53 FR 17052, May 13, 1988; 54 FR 8542, Mar. 1, 1989; 54 FR 40059, Sept. 29, 1989; 56 FR 9896, Mar. 8, 1991; 56 FR 34030, July 25, 1991; 57 FR 19552, May 7, 1992; 57 FR 26779, June 16, 1992; 58 FR 16504, Mar. 29, 1993; 58 FR 44953, Aug. 25, 1993; 60 FR 35510, July 10, 1995]

### § 80.374 Special provisions for frequencies in the 4000–4063 kHz and the 8100–8195 kHz bands shared with the fixed service.

Until implementation procedures and schedules are determined by a conference of the International Telecommunications Union (ITU), the bands 4000–4063 kHz and 8100–8195 kHz are allocated on a shared primary basis between the fixed service and the maritime mobile service; see § 2.106, note US236, of the Commission's Rules. Frequency assignments in the 4000–4063 kHz and 8100–8195 kHz bands are subject to coordination with government users. Additionally, coast station assignments in the 4000–4063 kHz band deviate from international provisions. Coast station assignments in the 4000–4063 kHz band are permitted provided that harmful interference is not caused to, and must accept interference from, stations operated by other countries in accordance with the Radio Regulations (*see* Radio Regulation Nos. 342 and 517).

(a) *Application requirements.* Applicants for public coast station frequencies described in this section must submit a substantial showing of need based on the following factors:

(1) A schedule of each currently licensed 4, 6, and 8 MHz frequency and the expected use of the proposed frequencies;

(2) For additional frequencies within the same MHz band, a factual showing of the 3 busiest hours of any 4 days within a consecutive 10 day period for each of the 2 months immediately preceding the filing of the application indicating that the applicant has used its currently assigned frequencies within the same MHz band an aggregate average of at least 40% of the 3 busiest hours of each day for exchanging communications; and

(3) Any other facts that support the need for the proposed assignment, *e.g.*, evidence of radio interference by another station located near enough to render a currently licensed frequency substantially unusable.

(b) *Frequencies in the 4000–4063 kHz band.* (1) The frequencies in the 4000–4063 kHz bands are available to ship and public coast stations for:

(i) Supplementary ship-to-shore duplex operations with coast stations assigned the frequencies described in § 80.371(b) of this part;

(ii) Intership simplex operations and cross-band operations;

(iii) Ship-to-shore or shore-to-ship simplex operations; or

(iv) Duplex operations with coast stations assigned in the band 4438–4650

kHz, as described in §80.373(d) of this part.

(2) The following table describes the channelization of carrier frequencies in the 4000–4063 kHz band.

CARRIER FREQUENCIES (kHz)

| | | | |
|---|---|---|---|
| 4000 | 4015 | 4030 | 4045 |
| 4003 | 4018 | 4033 | 4048 |
| 4006 | 4021 | 4036 | 4051 |
| 4009 | 4024 | 4039 | 4054 |
| 4012 | 4027 | 4042 | 4057 |

(c) *Frequencies in the 8100–8195 kHz band.* (1) The frequencies in the 8100–8195 kHz bands are available to ship and public coast stations for:

(i) Supplementary ship-to-shore duplex operations with coast stations assigned the frequencies described in §80.371(b) of this part;

(ii) Intership simplex operations and cross-band operations; or

(iii) Ship-to-shore or shore-to-ship simplex operations.

(2) The following table describes the channelization of carrier frequencies in the 8100–8195 kHz band.

CARRIER FREQUENCIES (kHz)

| | | |
|---|---|---|
| 8101 | 8137 | 8167 |
| 8104 | 8140 | 8170 |
| 8107 | 8143 | 8173 |
| 8110 | 8146 | 8176 |
| 8116 | 8149 | 8179 |
| 8119 | 8152 | 8182 |
| 8122 | 8155 | 8185 |
| 8125 | 8158 | 8188 |
| 8131 | 8161 | 8191 |
| 8134 | 8164 | |

[56 FR 9896, Mar. 8, 1991]

RADIODETERMINATION

### §80.375 Radiodetermination frequencies.

This section describes the carrier frequencies assignable to radiodetermination stations. Only direction finding radar stations will be authorized on land.

(a) *Direction finding frequencies.* The carrier frequencies assignable to ship stations for direction finding operations are:

| Carrier frequency |
|---|
| 410 kHz |
| 500 kHz |
| 2182 kHz |
| 8364 kHz |
| 121.500 MHz |
| 243.000 MHz |

(1) Except in distress the assigned frequency for direction finding is 410 kHz;

(2) Ship stations may use 500 kHz for direction finding exclusively in Regions 1 and 3 outside areas of heavy radio traffic. Use must not interfere with distress urgency and safety signals or calls and replies.

(b) *Radiodetermination frequencies for cable-repair ships.* Except in Region 1 the channels in the 285–325 kHz band are assignable to ship stations for cable-repair radiodetermination operations. In Region 1 the channels available for assignment for such operations are limited to the 285–315 kHz band. The conditions of use of these channels are set forth in subpart X of this part. Channel usage must comply with the following requirements:

(1) They are not permitted within the territorial waters of a foreign country;

(2) Their output power must not exceed 15 watts; and

(3) They must not cause interference to any maritime station in the radionavigation service.

(c) *Radiodetermination frequencies below 500 MHz.* The frequencies 154.585 MHz, 159.480 MHz, 160.725 MHz, 160.785 MHz, 454.000 MHz and 459.000 MHz are authorized for offshore radiolocation and associated telecommand operations under a ship station license provided:

(1) The use of these frequencies is related to the ship's commercial operations;

(2) The station antenna height does not exceed 6 meters (20 feet) above sea level in a buoy station or 6 meters (20 feet) above the mast of the ship in which it is installed.

(d) *Radiodetermination frequency bands above 2400 MHz.* (1) The radiodetermination frequency bands assignable to ship and shore stations including ship and shore radar and transponder stations are as follows: 2450–2500 MHz; 2900–3100 MHz; 5460–5650 MHz; 9300–9500 MHz; and 14.00–14.05 GHz.

(2) Assignment of these bands to ship and coast stations are subject to the following conditions:

(i) The 2450–2500 MHz band may be used only for radiolocation on the condition that harmful interference must not be caused to the fixed and mobile services. No protection is provided from interference caused by emissions from industrial, scientific, or medical equipment;

(ii) The use of the 2900–3100 MHz, 5470–5650 MHz and 9300–9500 MHz bands for radiolocation must not cause harmful interference to the radionavigation and Government radiolocation services. Additionally, the use of the 2900–3000 MHz band for radiolocation must not cause harmful interference to the Government meteorological aids service.

(iii) In the 2920–3100 MHz and 9320–9500 MHz bands the use of fixed-frequency transponders for radionavigation is not permitted;

(iv) Non-Government radiolocation stations may be authorized in the 5460–5470 MHz band on the condition that harmful interference shall not be caused to the aeronautical or maritime radionavigation services or to Government radiolocation service;

(v) The use of the 5460–5650 MHz band for radionavigation is limited to shipborne radar;

(vi) The use of the 14.00–14.05 GHz band will be authorized only for test purposes and maritime radionavigation on a secondary basis to the fixed-satellite service; and

(vii) Selectable transponders must be authorized under Part 5 of the Commission rules until technical standards for their use are developed.

(3) In addition to the conditions in (2) of this paragraph ship stations are subject to the following conditions:

(i) Transponders used for safety purposes will be authorized in the 2900–3100 MHz, 5470–5650 MHz and 9300–9500 MHz bands. Transponders used for non-safety purposes will be confined to the 2930–2950 MHz, 5470–5480 MHz and 9300–9500 MHz subbands only;

(ii) In the 2900–2920 MHz and 9300–9320 MHz subbands the use of radars other than those installed prior to January 2, 1976, is not permitted;

(iii) In the 2920–3100 MHz and 9320–9500 MHz bands non-selectable transponders will be authorized only for safety purposes;

(iv) Non-selectable transponders must not be used to enhance detection of marine craft;

(4) In the 2920–3100 MHz and 9320–9500 MHz bands shore station radar transponders used only as racons will be authorized.

(e) In addition to the other technical requirements contained in subpart E of this part search and rescue transponder stations must meet the following technical standards contained in the latest international Radio Consultative Committee (CCIR) Recommendation 628 titled ''Technical Characteristics for a Search and Rescue Radar Transponder'':

(1) Operate in the 9300–9500 MHz band;

(2) Be horizontally polarized at their source;

(3) Have an effective receiver sensitivity including its antenna gain better than −50 dBm;

(4) Operate within specifications between the temperatures of −20 and +50 degrees Celsius;

(5) Operate within specifications for at least 48 hours at 0 degrees Celsius without changing batteries;

(6) Have a sawtooth sweep with a 5 microseconds ± 0.5 microseconds rate and return of less than 0.5 microseconds;

(7) Have a pulse emission of 100 microseconds maximum duration;

(8) Have a recovery time following excitation of 10 microseconds or less;

(9) Have a delay between receipt of a radar signal and start of transmissions of 1.25 microseconds or less;

(10) Have an antenna whose vertical beamwidth is no less than 25 degrees and its azimuthal beamwidth is omnidirectional within 2 dB; and

(11) Suppress interference caused by the interrogating radar antenna's sidelobes.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 7419, Mar. 11, 1987; 55 FR 6394, Feb. 23, 1990; 57 FR 26779, June 16, 1992; 58 FR 44953, Aug. 25, 1993]

SHIP EARTH STATIONS

**§80.377 Frequencies for ship earth stations.**

The frequency band 1626.5–1645.5 MHz is assignable for communication, radiodetermination and telecommand messages, and developmental operations that are associated with the position, orientation and operational functions of maritime satellite equipment. The frequency band 1645.5–1646.5 MHz is reserved for use in the Global Maritime Distress and Safety System (GMDSS).

[51 FR 31213, Sept. 2, 1986, as amended at 57 FR 26779, June 16, 1992]

AIRCRAFT STATIONS

**§80.379 Maritime frequencies assignable to aircraft stations.**

This section describes the maritime frequencies assignable to aircraft stations for simplex operations:

(a) Available frequencies:

| Carrier frequency | Conditions of use |
|---|---|
| 2738 kHz | (1) |
| 2830 kHz | (1) |
| 3023 kHz | (2) |
| 4125 kHz | (3) |
| 5680 kHz | (2) |
| 121.500 MHz | (4) |
| 123.100 MHz | (4) |
| 156.300 MHz | (5) |
| 156.375 MHz | (5) |
| 156.400 MHz | (5) |
| 156.425 MHz | (5) |
| 156.450 MHz | (5) |
| 156.625 MHz | (5) |
| 156.800 MHz | (5) |
| 156.900 MHz | (5) |
| 157.100 MHz | (6) |
| 157.425 MHz | (5)(7) |

(b) The conditions of use of the carrier frequencies in paragraph (a) of this section, are:

(1) For permissible geographic areas of operation see §80.373(b)(1). For other limitations see §80.373(b)(7);

(2) Aircraft and ship stations may use 3023.0 kHz and 5680.0 kHz for search and rescue scene-of-action coordination including communications between these stations and participating land stations. Stations using these frequencies must use J3E emission;

(3) Assignable for distress and safety communications between aircraft and maritime mobile stations;

(4) Assignable for search and rescue between ships and aircraft. Stations using these frequencies must use A3E emission;

(5) These frequencies may be used by aircraft stations when:

(i) The altitude of aircraft stations does not exceed 300 meters (1,000 feet), except for reconnaissance aircraft participating in icebreaking operations where an altitude of 450 meters (1,500 feet) is allowed;

(ii) The mean power of aircraft stations must not exceed five watts;

(iii) Communications are limited to operations in which the maritime mobile stations are primarily involved and where direct communications between the aircraft and the ship or coast station is required;

(iv) Stations may use 156.300 MHz for safety purposes only;

(v) Stations may use 156.800 MHz for distress, safety and calling only; and

(vi) Use of 156.375 MHz by aircraft is not permitted in the New Orleans VTS area specified in §80.383.

(6) The use of 157.100 MHz is limited to communications with stations of the Department of Interior at Lake Mead, Nevada; and

(7) Commercial fishing vessels and associated aircraft may use 157.425 MHz while engaged in commercial fishing activities except within 120 km (75 miles) of the United States/Canada border and Puget Sound and the Strait of Juan de Fuca and its approaches, the Great Lakes, and the St. Lawrence Seaway.

[51 FR 31213, Sept. 2, 1986, as amended at 58 FR 44953, Aug. 25, 1993]

OPERATIONAL FIXED STATIONS

**§80.381 Frequencies for operational fixed stations.**

The following carrier frequencies in the 72–76 MHz band are assignable to operational fixed stations using vertical polarization, if no harmful interference is caused to TV reception on Channels 4 and 5. These frequencies are shared with the Land Mobile and Aviation Radio Services.

OPERATIONAL FIXED FREQUENCIES IN THE 72–76 MHZ BAND

CARRIER FREQUENCY IN MHZ

| | | | | | |
|---|---|---|---|---|---|
| 72.02 | 72.28 | 72.64 | 72.90 | 75.68 | 75.94 |
| 72.04 | 72.30 | 72.66 | 72.92 | 75.70 | 75.96 |
| 72.06 | 72.32 | 72.68 | 72.94 | 75.72 | 75.98 |
| 72.08 | 72.34 | 72.70 | 72.96 | 75.74 | ..... |
| 72.10 | 72.36 | 72.72 | 72.98 | 75.76 | ..... |
| 72.12 | 72.38 | 72.74 | 75.42 | 75.78 | ..... |
| 72.14 | 72.40 | 72.76 | 75.46 | 75.80 | ..... |
| 72.16 | 72.42 | 72.78 | 75.50 | 75.82 | ..... |
| 72.18 | 72.46 | 72.80 | 75.54 | 75.84 | ..... |
| 72.20 | 72.50 | 72.82 | 75.58 | 75.86 | ..... |
| 72.22 | 72.54 | 72.84 | 75.62 | 75.88 | ..... |
| 72.24 | 72.58 | 72.86 | 75.64 | 75.90 | ..... |
| 72.26 | 72.62 | 72.88 | 75.66 | 75.92 | ..... |

[51 FR 31213, Sept. 2, 1986, as amended at 54 FR 40059, Sept. 29, 1989]

## VESSEL TRAFFIC SERVICES SYSTEM (VTS)

### § 80.383 Vessel Traffic Services (VTS) system frequencies.

This section describes the carrier frequencies available for use in the Coast Guard Vessel Traffic Services (VTS) systems within the designated geographic radio protected areas.

(a) Assigned frequencies:

VESSEL TRAFFIC CONTROL FREQUENCIES

| Carrier frequencies (MHz) | Geographic areas |
|---|---|
| 156.250 ..... | Seattle. |
| 156.550 ..... | New York, New Orleans,[1] Houston, Prince William Sound,[3] Berwick Bay. |
| 156.600 ..... | New York, New Orleans,[1] Houston, San Francisco,[3] Sault Ste. Marie.[3] |
| 156.700 ..... | New York, New Orleans,[1] Seattle, San Francisco.[2] |

[1] Until further notice, this frequency is available for use as permitted by § 80.373(f), notwithstanding the provisions of footnote 3 that are applicable to the VTS system. Availability is a result of the closure of the VTS system for the port area of New Orleans. If the United States Coast Guard re-establishes this system, the Commission may require operations pursuant to such conditional licenses for this frequency to cease, or may choose not to renew such conditional licenses. All licenses for this frequency will be expressly conditioned upon the continued availability of the frequency for non-VTS use.

[2] Private coast station licenses for the use of this frequency will not be renewed beyond November 1, 1997. Continued use until expiration must be on a noninterference basis to Coast Guard VTS communications.

[3] Private coast station licenses for the use of this frequency in this area will expire at the end of the current license term or five years after the adopted date of the final rule, whichever comes first. Continued use until expiration must be on a noninterference basis to Coast Guard VTS communications.

(b) The U.S. Coast Guard designated radio protection areas for VTS are as follows:

(1) *New York.* The rectangle between north latitudes 40 degrees and 42 degrees and west longitudes 71 degrees and 74 degrees 30 minutes;

(2) *New Orleans.* The rectangle between North latitudes 27 degrees 30 minutes and 31 degrees 30 minutes and West longitudes 87 degrees 30 minutes and 93 degrees;

(3) *Houston.* The rectangle between north latitudes 28 degrees 30 minutes and 30 degrees 20 minutes and west longitudes 93 degrees 30 minutes and 96 degrees;

(4) *Seattle (Puget Sound).* The area encompassed between the United States-Canadian border and a line drawn from 49 degrees North 121 degrees West on the United States-Canadian Border, to 46 degrees 30 minutes North 121 degrees West, then to 46 degrees 30 minutes North 125 degrees West, then to 48 degrees 30 minutes North 125 degrees West, and then east to the United States-Canadian Border;

(5) *San Francisco.* The rectangle between north latitudes 39 degrees and 37 degrees and west longitudes 120 degrees 50 minutes and 123 degrees 20 minutes; and

(6) *Prince William Sound.* The rectangle between North latitudes 61 degrees 17 minutes and 59 degrees 22 minutes and West longitudes 149 degrees 39 minutes and 145 degrees 36 minutes.

(7) *Sault Ste. Marie.* The rectangle between North latitudes 45 degrees and 47 degrees, and West longitudes 83 degrees and 85 degrees.

(8) *Berwick Bay.* The rectangle between North latitudes 28 degrees 30 minutes and 30 degrees 30 minutes, and West longitudes 90 degrees 50 minutes and 92 degrees.

(c) The use of the frequencies shown in paragraph (a) of this section is permitted in areas outside the Coast Guard radio protection areas provided there is no interference to VTS communications within the VTS areas.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35245, Sept. 18, 1987; 54 FR 8746, Mar. 2, 1989; 55 FR 46514, Nov. 5, 1990; 58 FR 16504, Mar. 29, 1993; 61 FR 26120, May 24, 1996; 61 FR 26466, May 28, 1996]

AUTOMATED SYSTEMS

## §80.385 Frequencies for automated systems.

This section describes the carrier frequencies for the Automated Maritime Telecommunications System (AMTS) and for other automated multi-station systems.

(a) *Automated Maritime Telecommunications System (AMTS).* (1) The Automated Maritime Telecommunications System (AMTS) is an integrated and interconnected maritime communications system.

(2) The following carrier frequency pairs are available for radiotelephony, facsimile and teleprinter communications. AMTS operations must not cause harmful interference to the U.S. Navy SPASUR system which operates in the band 216.880–217.080 MHz.

| Channel No. | Carrier frequency (MHz) | | |
|---|---|---|---|
| | Ship transmit [1] | Coast transmit [2] | Group |
| 101 | | 216.0125 | D |
| 102 | | 216.0375 | |
| 103 | | 216.0625 | |
| 104 | | 216.0875 | |
| 105 | | 216.1125 | |
| 106 | | 216.1375 | |
| 107 | | 216.1625 | |
| 108 | | 216.1875 | |
| 109 | | 216.2125 | |
| 110 | | 216.2375 | |
| 111 | | 216.2625 | |
| 112 | | 216.2875 | |
| 113 | | 216.3125 | |
| 114 | | 216.3375 | |
| 115 | | 216.3625 | |
| 116 | | 216.3875 | |
| 117 | | 216.4125 | |
| 118 | | 216.4375 | |
| 119 | | 216.4625 | |
| 120 | | 216.4875 | |
| 121 | | 216.5125 | C |
| 122 | | 216.5375 | |
| 123 | | 216.5625 | |
| 124 | | 216.5875 | |
| 125 | | 216.6125 | |
| 126 | | 216.6375 | |
| 127 | | 216.6625 | |
| 128 | | 216.6875 | |
| 129 | | 216.7125 | |
| 130 | | 216.7375 | |
| 131 | | 216.7625 | |
| 132 | | 216.7875 | |
| 133 | | 216.8125 | |
| 134 | | 216.8375 | |
| 135 | | 216.8625 | |
| 136 | | 216.8875 | |
| 137 | | 216.9125 | |
| 138 | | 216.9375 | |
| 139 | | 216.9625 | |
| 140 | | 216.9875 | |
| 141 | 219.0125 | 217.0125 | B |
| 142 | 219.0375 | 217.0375 | |
| 143 | 219.0625 | 217.0625 | |
| 144 | 219.0875 | 217.0875 | |
| 145 | 219.1125 | 217.1125 | |
| 146 | 219.1375 | 217.1375 | |
| 147 | 219.1625 | 217.1625 | |
| 148 | 219.1875 | 217.1875 | |
| 149 | 219.2125 | 217.2125 | |
| 150 | 219.2375 | 217.2375 | |
| 151 | 219.2625 | 217.2625 | |
| 152 | 219.2875 | 217.2875 | |
| 153 | 219.3125 | 217.3125 | |
| 154 | 219.3375 | 217.3375 | |
| 155 | 219.3625 | 217.3625 | |
| 156 | 219.3875 | 217.3875 | |
| 157 | 219.4125 | 217.4125 | |
| 158 | 219.4375 | 217.4375 | |
| 159 | 219.4625 | 217.4625 | |
| 160 | 219.4875 | 217.4875 | |
| 161 | 219.5125 | 217.5125 | A |
| 162 | 219.5375 | 217.5375 | |
| 163 | 219.5625 | 217.5625 | |
| 164 | 219.5875 | 217.5875 | |
| 165 | 219.6125 | 217.6125 | |
| 166 | 219.6375 | 217.6375 | |
| 167 | 219.6625 | 217.6625 | |
| 168 | 219.6875 | 217.6875 | |
| 169 | 219.7125 | 217.7125 | |
| 170 | 219.7375 | 217.7375 | |
| 171 | 219.7625 | 217.7625 | |
| 172 | 219.7875 | 217.7875 | |
| 173 | 219.8125 | 217.8125 | |
| 174 | 219.8375 | 217.8375 | |
| 175 | 219.8625 | 217.8625 | |
| 176 | 219.8875 | 217.8875 | |
| 177 | 219.9125 | 217.9125 | |
| 178 | 219.9375 | 217.9375 | |
| 179 | 219.9625 | 217.9625 | |
| 180 | 219.9875 | 217.9875 | |

[1] Ship transmit frequencies in Group C and D are not authorized for AMTS use.

[2] Coast station operation on frequencies in Groups C and D are not currently assignable and are shared on a secondary basis with the Low Power Radio Service in part 95 of this chapter. Frequencies in the band 216.750–217.000 MHz band are available for low power point-to-point network control communications by AMTS coast stations under the Low Power Radio Service (LPRS). LPRS operations are subject to the conditions that no harmful interference is caused to the United States Navy's SPASUR radar system (216.88–217.08 MHz) or to TV reception within the Grade B contour of any TV channel 13 station or within the 68 dBu predicted contour of any low power TV or TV translator station operating on channel 13.

(3) Channels in the 219–220 MHz band are also used on a secondary, non-interference basis by amateur stations participating in digital message forwarding systems. Amateur stations may not cause harmful interference to AMTS operations and must accept any harmful interference from AMTS operation. Amateur stations within 80 km (50 miles) of an AMTS coast station must obtain written approval from the AMTS licensee prior to operating in the 219–220 MHz band. Amateur stations within 640 km (398 miles) of an AMTS coast station must notify the AMTS licensee in writing at least 30

days prior to initiation of operations in the 219–220 MHz band. All amateur stations must notify the American Radio Relay League in writing at least 30 days prior to initiation of operations in the 219–220 MHz band (ARRL, 225 Main St., Newington, CT 06111–1494).

(b) *Narrowband operations in AMTS.* AMTS licensees may operate on frequencies offset from the assignable channels specified in paragraph (a)(2) of this section provided such licensees are also licensed for channels on each side of the offset frequency. Licensees using offset frequencies must conform with all other conditions of operation.

(c) *Automated multi-station system.* Great Lakes Region. The following table describes the assignable carrier frequency pairs to provide communication services including automated calling, teleprinter and facsimile:

| Channel designator | Carrier frequency (MHz) | |
|---|---|---|
| | Ship transmit | Coast transmit |
| 17 | None | [1] 156.850 |
| 84 | 157.225 | 161.825 |
| 85 | 157.275 | 161.875 |
| 86 | 157.325 | 161.925 |
| 87 | 157.375 | 161.975 |

[1] The frequency 156.850 MHz is used only to transmit scheduled weather broadcasts.

[51 FR 31213, Sept. 2, 1986, as amended at 54 FR 29041, July 11, 1989; 56 FR 3783, Jan. 31, 1991; 57 FR 26780, June 16, 1992; 60 FR 15687, Mar. 27, 1995; 61 FR 46566, Sept. 4, 1996]

EFFECTIVE DATE NOTE: At 61 FR 46566, Sept. 4, 1996, § 80.385 was amended by revising footnote 2 to the table in paragraph (a)(2), effective Oct. 4, 1996. For the convenience of the user, the superseded text is set forth as follows:

**§ 80.385 Frequencies for automated systems.**

* * * * *

(a) * * *

(2) * * *

[2] Coast station operation on frequencies in Group C and D are not currently assignable.

* * * * *

ALASKA FIXED STATIONS

**§ 80.387 Frequencies for Alaska fixed stations.**

(a) The carrier frequencies listed in (b) of this section are assignable for point-to-point simplex radiotelephone communications between private fixed stations in Alaska. The frequency pairs listed in paragraph (d) of this section are assignable for point-to-point duplex radiotelephone communications between private and public fixed stations in Alaska. Fixed stations in Alaska authorized to share carrier frequencies with the maritime mobile service must always give priority on such frequencies to maritime distress, urgency and safety communications.

(b) *Alaska-private fixed station frequencies:*

Carrier frequencies (kHz)

| | | |
|---|---|---|
| 1643.0 | 2430.0 | 2773.0 |
| 1646.0 | 2447.0 | 3164.5 |
| 1649.0 | 2450.0 | 3183.0 |
| 1652.0 | 2463.0 | 3196.0 |
| 1657.0 | 2466.0 | 3201.0 |
| 1660.0 [1] | 2471.0 | 3258.0 |
| 1705.0 | 2479.0 | 3261.0 |
| 1709.0 | 2482.0 | 3303.0 |
| 1712.0 | 2506.0 | 3365.0 |
| 2003.0 | 2509.0 | 4035.0 |
| 2006.0 | 2512.0 | 5164.5 |
| 2115.0 | 2535.0 | [3] 5167.5 |
| 2118.0 | 2538.0 | 5204.5 |
| 2253.0 | 2563.0 | [2] 6948.5 |
| 2400.0 | 2566.0 | [2] 7368.5 |
| 2419.0 | 2601.0 | 8067.0 |
| 2422.0 | 2616.0 | 8070.0 |
| 2427.0 | 2691.0 | [2] 11437.0 |
| | | [2] 11601.5 |

[1] Use of 1660.0 kHz must be coordinated to protect radiolocation on adjacent channels.

[2] Peak envelope power must not exceed 1 kW for radiotelephony. Teleprinter use is authorized.

[3] The frequency 5167.5 kHz is available for emergency communications in Alaska. Peak envelope power of stations operating on this frequency must not exceed 150 watts. When a station in Alaska is authorized to use 5167.5 kHz, such station may also use this frequency for calling and listening for the purpose of establishing communications.

(c) Use of the frequencies in paragraph (b) of this section must meet the following conditions:

(1) Communications between private coast and private fixed stations are prohibited; and

(2) Station licensees must not charge for third party communication services between their station and any other private fixed station.

(d) The following carrier frequency pairs are assignable for point-to-point communications between public fixed and private fixed stations:

| Public fixed station frequencies (kHz) | Private fixed Station frequencies (kHz) |
|---|---|
| [1] 2312.0 | 2632.0 |

| Public fixed station frequencies (kHz) | Private fixed Station frequencies (kHz) |
|---|---|
| 2604.0 | 2256.0 |
| 2781.0 | [3] 2474.0 |
| 2784.0 | 2694.0 |
| 3167.5 | 3354.0 |
| 3180.0 | 2776.0 |
| 3241.0 | 3357.0 |
| 3362.0 | 3238.0 |
| [2] 4791.5 | 5207.5 |
| 5370.0 | [4] 5134.5, [4] 5137.5 |

[1] This frequency is assignable on a primary basis to public coast stations and on a secondary basis to public fixed stations.
[2] Teleprinter use is authorized.
[3] Peak envelope power must not exceed 1 kW.
[4] Licensees must cease all communications on 5134.5 kHz and 5137.5 kHz when notified by the State of Alaska of an emergency or disaster. Licensees may resume communication on these frequencies when notified by the State of Alaska that the disaster or harmful interference has ended.

(e) The public fixed station frequencies are assignable to common carriers.

(f) The private fixed station frequencies described in paragraph (d) of this section are assignable to private entities located in areas where common carrier facilities are not available. Private fixed stations operating on the frequencies in paragraph (d) of this section, must communicate with public fixed stations only. Private fixed stations are permitted to provide third party communications between their station and the public fixed stations. A charge for such service is prohibited.

(g) U.S. Government frequencies will be authorized if the Commission determines that the assignment is in the public interest.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35245, Sept. 18, 1987; 56 FR 34030, July 25, 1991]

MARITIME SUPPORT STATIONS

### §80.389 Frequencies for maritime support stations.

(a) *Marine receiver test.* Maritime support stations will be authorized to conduct receiver tests on the ship station frequencies of the channels assigned to the associated public coast station.

(b) *Shore radar and radiolocation tests.* The following frequency bands are available for assignment to demonstrate radar and radiolocation equipment. The use of frequencies within these bands must not cause harmful interference to the radionavigation service and the Government radiolocation service: 2450–2500 MHz, 2900–3100 MHz, 5460–5650 MHz, 9300–9500 MHz, 14.0–14.05 GHz.

DEVELOPMENTAL STATIONS

### §80.391 Frequencies for developmental stations.

(a) Ship and shore stations engaged in developmental operations may be assigned any frequency or frequencies assignable to the service and class of station they propose to operate. The following frequency bands are also assignable to ships and coast stations for developmental operations:

| Ship transmit | Coast transmit |
|---|---|
| 5350–5460 MHz [1] | 5350–5460 MHz [1] |
| 6425–6525 MHz | |
| 9000–9200 MHz [1] | 9000–9200 MHz [1] |
| 11700–12200 MHz | 11700–12200 MHz |
| 17700–19700 MHz | |
| 27500–29500 MHz | |

[1] The bands 5350–5460 MHz and 9000–9200 MHz are assignable for developmental operations at ship and shore radiolocation stations if their operations do not cause harmful interference to aeronautical radionavigation or Government radiolocation services.

(b) Stations authorized to conduct developmental operations are prohibited from communicating with any station of a country other than the United States.

(c) Stations authorized to conduct developmental operations must not cause harmful interference to the operation of stations authorized in other public services nor to any United States Government or foreign station.

## Subpart I—Station Documents

### §80.401 Station documents requirement.

Licensees of radio stations are required to have current station documents as indicated in the following table:

LEGEND:
R = REQUIRED

DOCUMENTS →

| | Radio Station Category | Station License | Appropriate Operator Authorization | Station Logs | Appropriate safety Convention Certificate | Communications Act Safety Certificate | Great Lakes Radio Agreement Safety Certificate | Bridge to Bridge Act Safety Certificate | Part 80; FCC Rules and Regulations | Alphabetical List of Maritime Mobile Call Signs | List of Ship Stations | Manual for use by Maritime Mobile (M/M) Service&M/M Satellite Serv | List Of Coast Stations | List of Radiodetermination and special Services Stations | Station Equipment Records |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shipboard: | Telegraph;Title III, Part II/Safety Convention | R1 | R | R | R | | | | R | R | R | R | R | R | |
| | Telephone; Title III, Part II/Safety Convention | R1 | R | R | R | | | | R | | | R | R2 | | |
| | Telephone; Title III, Part II | R1 | R | R | | | | | R | | | | | | |
| | Telephone; Title III, Part III | R1 | R | R | | R | | | R | | | | | | |
| | Telephone; Great Lakes Radio Agreement | R | R | R4 | | | R4 | | | | | | | | |
| | Telephone; Bridge-to-Bridge Act | R | R | R | | | | R | | | | | | | |
| | Radar | R | | | | | | | | | | | | | |
| | On Board | R | | | | | | | | | | | | | R |
| | Voluntary | R | R | | | | | | | | | | | | |
| Land: | Public Coast (MF) | R | R | R | | | | | R | R3 | R3 | R3 | | | |
| | Public Coast (HF) | R | R | R | | | | | R | R | R | R | | | |
| | Public Coast (VHF) | R | R | R | | | | | R | | | | | | |
| | Private Coast | R | R | | | | | | | | | | | | |
| | Radio Determination | R | R | | | | | | | | | | | | |
| | Operational Fixed | R | R | | | | | | | | | | | | |
| | Maritime Support | R | R | | | | | | | | | | | | |
| | Alaska - Public Fixed | R | R | R | | | | | | | | | | | |
| | Alaska - Private Fixed | R | R | | | | | | | | | | | | |
| Ship/Coast: | Marine Utility | R | R | | | | | | | | | | | | |

NOTES:

1. The expired station license must be retained in the station records until the first Commission inspection after the expiration date.

2. Alternatively, a list of coast stations maintained by the licensee with which communications are likely to be conducted, showing watchkeeping hours, frequencies and charges, is authorized.

3. Required only if station provides a service to oceangoing vessels.

4. Certification of a Great Lakes Agreement inspection may be made by either a log entry or issuance of a Great Lakes Agreement certificate. Radiotelephone logs containing entries certifying that a Great Lakes Agreement inspection has been conducted must be retained and be available for inspection by the FCC for 2 years after the date of the inspection.

[61 FR 25805, May 23, 1996]

### §80.403 Availability of documents.

Station documents must be readily available to the licensed operator(s) on duty during the hours of service of the station and to authorized Commission employees upon request.

### §80.405 Station license.

(a) *Requirement.* Stations must have an authorization granted by the Federal Communications Commission.

(b) *Application.* Application for authorizations in the maritime services must be submitted on the prescribed forms in accordance with subpart B of this part.

(c) *Posting.* The current station authorization or a clearly legible copy must be posted at the principal control point of each station. If a copy is posted, it must indicate the location of the original. When the station license cannot be posted, as in the case of a marine utility station operating at temporary unspecified locations, it must be kept where it will be readily available for inspection. The licensee of a station on board a ship subject to Part II or III of Title III of the Communications Act or the Safety Convention must retain the most recently expired ship station license in the station records until the first Commission inspection after the expiration date.

### §80.407 Operator authorization.

This section contains information and rules pertinent to the application for and posting of radio operator authorizations. Rules applicable to radio operator requirements are contained in subpart D of this part and other rules pertinent to commercial radio operators are contained in part 13 of this chapter.

(a) *Application.* Detailed information about application forms, filing procedures, and places to file applications for radio operator authorizations is contained in the bulletin ''Commercial Radio Operator Licenses and Permits.'' This bulletin is available from any Commission District Office or from the FCC, Washington, DC 20554.

(b) *Posting.* When a Commission-authorized operator is required, the original authorization of each operator must be posted at the principal control point of the station. In lieu of posting, an operator who holds a restricted radiotelephone operator permit or a higher class operator license may have the operator authorization or a photocopy thereof available for inspection upon request by authorized Commission employees when operating the following:

(1) A voluntary station;

(2) Any class of ship station when the operator is on board solely to service the radio equipment; or

(3) A portable station.

### §80.409 Station logs.

(a) *General requirements.* Logs must be established and properly maintained as follows:

(1) The log must be kept in an orderly manner. The required information for the particular class or category of station must be readily available. Key letters or abbreviations may be used if their proper meaning or explanation is contained elsewhere in the same log.

(2) Erasures, obliterations or willful destruction within the retention period are prohibited. Corrections may be made only by the person originating the entry by striking out the error, initialing the correction and indicating the date of correction.

(3) Ship station logs must identify the vessel name, country of registry, and official number of the vessel.

(4) The station licensee and the radio operator in charge of the station are

responsible for the maintenance of station logs.

(b) *Availability and retention.* Station logs must be made available to authorized Commission employees upon request and retained as follows:

(1) Logs must be retained by the licensee for a period of one year from the date of entry, and when applicable for such additional periods as required by the following paragraphs:

(i) Logs relating to a distress situation or disaster must be retained for three years from the date of entry.

(ii) If the Commission has notified the licensee of an investigation, the related logs must be retained until the licensee is specifically authorized in writing to destroy them.

(iii) Logs relating to any claim or complaint of which the station licensee has notice must be retained until the claim or complaint has been satisfied or barred by statute limiting the time for filing suits upon such claims.

(2) Logs containing entries required by paragraphs (e) and (f) of this section must be kept at the principal radiotelephone operating location while the vessel is being navigated. All entries in their original form must be retained on board the vessel for at least 30 days from the date of entry. Additionally, logs required by paragraph (f) of this section must be retained on board the vessel for a period of 2 years from the date of the last inspection of the ship radio station.

(3) Ship radiotelegraph logs must be kept in the principal radiotelegraph operating room during the voyage.

(c) *Public coast station logs.* Public coast stations must maintain a log as follows:

(1) ''ON DUTY'' must be entered by the operator beginning a duty period, followed by the operator's signature. ''OFF DUTY'' must be entered by the operator being relieved of or terminating duty, followed by the operator's signature.

(2) The date and time of making an entry must be shown opposite the entry.

(3) Failure of equipment to operate as required and incidents tending to unduly delay communication must be entered.

(4) All measurements of the transmitter frequency(ies) must be entered with a statement of any corrective action taken.

(5) Entries must be made giving details of all work performed which may affect the proper operation of the station. The entry must be made, signed and dated by the operator who supervised or performed the work and, unless the operator is regularly employed on a full-time basis at the station, must also include the mailing address, class, serial number, and expiration date of the operator license.

(6) Entries must be made about the operation of the antenna tower lights when the radio station has an antenna structure requiring illumination by part 17 of this chapter.

(7) All distress or safety related calls transmitted or received must be entered, together with the frequency used and the position of any vessel in need of assistance.

(8) Coast stations which maintain a watch on 500 kHz must enter the time this watch is begun, suspended or ended.

(d) *Ship radiotelegraph logs.* Logs of ship stations which are compulsorily equipped for radiotelegraphy and operating in the band 90 to 535 kHz must contain log entries as follows:

(1) The date and time of each occurrence or incident required to be entered in the log must be shown opposite the entry and the time must be expressed in Coordinated Universal Time (UTC).

(2) ''ON WATCH'' must be entered by the operator beginning a watch, followed by the operator's signature. ''OFF WATCH'' must be entered by the operator being relieved or terminating a watch, followed by the operator's signature. All log entries must be completed by the end of each watch.

(3) During the watch, all calls and replies to and from the station must be entered to include the time, frequencies, and call letters of the station communicated with or heard. Also, any messages exchanged must be entered to include the time, frequency, and call letters of the station(s) communicated with or heard.

(4) During the watch, an entry must be made twice per hour stating whether the international silence period was

observed. Entries must also be made indicating any signals or communications heard on 500 kilohertz during this period. If no signals are heard on 500 kHz, an entry to that effect must be made.

(5) The time and reason for discontinuance and the time of resuming the watch must be entered when the 500 kHz watch is discontinued.

(6) All distress calls, automatic-alarm signals, urgency and safety signals made or intercepted, the complete text, if possible, or distress messages and distress communications, and any incidents or occurrences which may appear to be of importance to safety of life or property at sea, must be entered, together with the time of such observation or occurrence and the position of the ship or other mobile unit in need of assistance.

(7) The position of the ship at least once per day.

(8) A daily entry must be made comparing the radio station clock with standard time, including errors observed and corrections made. For this purpose, authentic radio time signals received from land or fixed stations will be acceptable as standard time.

(9) All test transmissions must be entered, including the time of the transmissions and the approximate geographical location of the vessel.

(10) Any failure of equipment to operate as required and any incidents tending to unduly delay communications must be entered.

(11) A ship required to keep a radiotelegraph watch on 500 kHz must meet the following:

(i) Entries must be made of the results of tests of the emergency installation including transmitter antenna current, hydrometer readings of lead-acid storage batteries, voltage readings of other types of batteries, and quantity of fuel available for engine generators.

(ii) When the vessel is in the open sea, a log entry must be made each time the emergency power supply is used to carry on a communication other than during a safety watch.

(iii) When the vessel is in the open sea, a daily entry must be made showing whether the storage batteries were brought up to the normal full charge condition that day.

(iv) Entries must be made stating when each storage battery is placed on charge or off charge.

(v) Entries must be made about maintenance of survival craft radio equipment, including a record of charging of any storage batteries supplying power to such equipment. The record of charging must show when such storage battery is placed on charge and when it is taken off charge.

(vi) Results of inspections and tests of survival craft radio equipment, prior to departure of the vessel from a harbor or port and weekly inspections, must be entered.

(vii) On a cargo vessel equipped with an auto alarm, the entry ''AUTO ALARM ON'' and the entry ''AUTO ALARM OFF'', respectively, must be made whenever the operator places the auto alarm in and out of operation. Results of the required auto alarm tests must be entered daily, including the minimum number of 4-second dashes from the testing device which were necessary to properly operate the alarm.

(viii) On a cargo vessel equipped with an auto alarm, a log entry must be made whenever the auto alarm becomes inoperative. The entry must include a statement showing the time the operator was called to make repairs; the reason for the failure; parts changed; repairs; and the time the auto alarm was restored to service.

(e) *Ship radiotelephone logs.* Logs of ship stations which are compulsorily equipped for radiotelephony must contain the following applicable log entries and the time of their occurrence:

(1) A summary of all distress, urgency and safety traffic;

(2) A summary of communications conducted on other than VHF frequencies between the ship station and land or mobile stations;

(3) A reference to important service incidents;

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

(5) The name of the operator at the beginning and end of the watch period;

(6) The time the watch begins when the vessel leaves port, and the time it ends when the ship reaches port;

(7) The time the watch is discontinued, including the reason, and the time the watch is resumed;

(8) The times when storage batteries provided as a part of the required radiotelephone installation are placed on charge and taken off charge;

(9) Results of required equipment tests, including specific gravity of lead-acid storage batteries and voltage reading of other types of batteries provided as a part of the compulsory installation;

(10) Results of inspections and tests of compulsorily fitted lifeboat radio equipment;

(11) A daily statement about the condition of the required radiotelephone equipment, as determined by either normal communication or test communication;

(12) When the master is notified about improperly operating radiotelephone equipment.

(f) *Applicable radiotelephone log entries.* The log entries listed in paragraph (e) of this section are applicable as follows:

(1) Radiotelephony stations subject to parts II and III of title III of the Communications Act and/or the Safety Convention must record entries indicated by paragraphs (e)(1) through (e)(11) of this section.

(2) Radiotelephony stations subject to the Great Lakes Agreement and the Bridge-to-Bridge Act must record entries indicated by paragraphs (e) (1), (5), (6), (7), (8), (9), (11) and (12) of this section. Additionally, the radiotelephone log must provide an easily identifiable, separate section relating to the required inspection of the ship's radio station. Entries must be made in this section giving at least the following information:

(i) The date the inspection was conducted;

(ii) The date by which the next inspection needs to be completed;

(iii) The inspector's printed name, address and class of FCC license (including the serial number);

(iv) The results of the inspection, including any repairs made;

(v) The inspector's signed and dated certification that the vessel meets the requirements of the Great Lakes Agreement and the Bridge-to-Bridge Act contained in subparts T and U of this part and has successfully passed the inspection; and

(vi) The vessel owner, operator, or ship's master's certification that the inspection was satisfactory.

(3) Radiotelephony stations subject to the Bridge-to-Bridge Act must record entries indicated by paragraphs (e) (1), (5), (6), (7), (11) and (12) of this section.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35245, Sept. 18, 1987; 54 FR 40059, Sept. 29, 1989; 61 FR 25807, May 23, 1996]

### § 80.411 Vessel certification or exemption.

(a) *Application.* The application procedures for inspection and certification and for exemptions are contained in § 80.59.

(b) *Posting.* Communications Act, Safety Convention and Great Lakes Radio Agreement certificates or exemptions must be posted in a prominent, accessible place in the ship. Ships subject to the Great Lakes Agreement may, in lieu of a posted certificate, certify compliance in the station log required by section 80.409(f).

[51 FR 31213, Sept. 2, 1986, as amended at 61 FR 25807, May 23, 1996]

### § 80.413 On-board station equipment records.

(a) The licensee of an on-board station must keep equipment records which show:

(1) The ship name and identification of the on-board station;

(2) The number and type of repeater and mobile units used on-board the vessel; and

(3) The date and type of equipment which is added or removed from the on-board station.

### § 80.415 ITU publications.

(a) The following publications listed in the table contained in § 80.401 are published by the International Telecommunications Union (ITU):

(1) Manual for Use of the Maritime Mobile and Maritime Mobile-Satellite Services.

(2) List IV—List of Coast Stations.

(3) List V—List of Ship Stations.

(4) List VI—List of Radiodetermination and Special Services Stations.

(5) List VII A—Alphabetical List of Call Signs of Stations Used by the Maritime Mobile Service, Ship Station Selective Call Numbers or Signals and Coast Station Identification Numbers or Signals.

(b) The publications listed in paragraph (a) of this section may be purchased from:

International Telecommunication Union, General Secretariat—Sales Section, Place des Nations, CH–1211 Geneva 20, Switzerland

### §80.417 FCC Rules and Regulations.

The Commission's printed publications are described in subpart C of part 0 of this chapter. These publications may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. The Commission does not furnish copies of these publications but will furnish a price list, Information Services and Publications-Bulletin No. 1, upon request. Requests for copies of this list should be directed to the Office of Public Affairs, Public Service Division, Federal Communications Commission, Washington, DC 20554.

[51 FR 31213, Sept. 2, 1986, as amended at 60 FR 50122, Sept. 28, 1995]

STATIONS ON LAND

## Subpart J—Public Coast Stations

### §80.451 Supplemental eligibility requirements.

A public coast station license may be granted to any person meeting the citizenship provisions of §80.15(b).

### §80.453 Scope of communications.

Public coast stations provide ship/shore radiotelephone and radiotelegraph services.

(a) Public coast stations are authorized to communicate:

(1) With any ship or aircraft station operating in the maritime mobile service, for the transmission or reception of safety communication;

(2) With any land station to exchange safety communications to or from a ship or aircraft station;

(3) With Government and non-Government ship and aircraft stations to exchange public correspondence;

(b) Public coast stations are authorized to communicate with a designated station at a remote fixed location where other communication facilities are not available.

(c) Public coast stations are authorized to transmit meteorological and navigational information of benefit to mariners.

(d) Each public coast telegraphy station is authorized to communicate with other public coast telegraphy stations to exchange message traffic destined to or originated at mobile stations:

(1) To exchange operating signals, brief service messages or safety communication;

(2) To exchange message traffic destined for a mobile station when the coast station initially concerned is unable to communicate directly with the mobile station;

(3) In the Great Lakes region, to exchange message traffic originated at a mobile station when the use of available point-to-point communication facilities would delay the delivery of such message traffic;

(4) Utilization of radiotelegraphy must not incur additional charges or replace available point-to-point communication facilities;

(5) Only authorized working frequencies within the band 415 kHz to 5000 kHz must be employed for communications between coast stations;

(6) Harmful interference must not be caused to communication between mobile stations and coast stations or between mobile stations.

USE OF TELEGRAPHY

### §80.455 Assignment and use of frequencies for manual Morse code telegraphy.

(a) The frequencies designated in §§80.355 and 80.357 may be licensed for use by coast stations employing telegraphy.

### §80.459 Digital selective calling.

Subpart H of this part lists frequencies assignable for DSC.

### § 80.461 Narrow-band direct-printing.

Subpart H of this part lists the frequencies assignable to public coast stations for operations with ship stations. Operating procedures are listed in subpart C of this part.

USE OF TELEPHONY

### § 80.465 Assignment and use of frequencies for telephony.

Subpart H of this part lists the frequencies available for assignment to public coast stations for telephony operations.

### § 80.467 Duplication of VHF service.

No duplication of service areas as determined by subpart P of this part will be permitted by public coast stations operating on the same VHF public correspondence channel. Within the service area of a station, the ratio of desired to undesired co-channel signal strengths on public correspondence channels must be at least 12dB.

### § 80.469 Maritime mobile repeater stations in Alaska.

(a) Maritime mobile repeater stations are authorized to extend the range of communication between a VHF public coast station located in Alaska and ship stations.

(b) On a secondary basis, maritime mobile repeater stations may be authorized to extend the range of a private coast station:

(1) In an area where VHF common carrier service is not available;

(2) A maritime mobile repeater station license expires 60 days after a public coast station in the area begins service.

(c) Each application for a maritime mobile repeater station must include a statement showing why operational fixed frequencies cannot be employed.

(d) The provisions relating to duplication of service described in subpart P apply to maritime mobile repeater stations.

(e) The frequencies 157.275 and 161.875 MHz are assignable to maritime mobile repeater stations.

(f) Each maritime mobile repeater station must:

(1) Deactivate automatically within 5 seconds after the signals controlling the station cease; and

(2) During periods when it is not controlled from a manned control point, deactivate automatically not more than 20 minutes after its activation by a mobile unit.

### § 80.471 Discontinuance or impairment of service.

A public coast station must not discontinue or impair service unless authorized to do so by the Commission.

[51 FR 31213, Sept. 2, 1986; 52 FR 35245, Sept. 18, 1987]

AUTOMATED SYSTEMS

### § 80.475 Scope of service of the Automated Maritime Telecommunications System (AMTS).

(a) AMTS applicants proposing to serve inland waterways must show how the proposed system will provide continuity of service along more than 60% of each of one or more navigable inland waterways. Inland waterways less than 240 kilometers (150 miles) long must be served in their entirety. AMTS applicants proposing to serve portions of the Atlantic, Pacific or Gulf of Mexico coastline must define a substantial navigational area and show how the proposed system will provide continuity of service for it. A separate Form 503 is not required for each coast station in a system. However, the applicant must provide the technical characteristics for each proposed coast station, including transmitter type, operating frequencies, emissions, transmitter output power, antenna arrangement and location.

(1) Applicants proposing to locate a coast station transmitter within 169 kilometers (105 miles) of a channel 13 television station or within 129 kilometers (80 miles) of a channel 10 television station or with an antenna height greater than 61 meters (200 feet) must submit an engineering study clearly showing the means of avoiding interference with television reception within the grade B contour. See § 80.215(h).

(2) Additionally, applicants required to submit the above specified must give written notice of the filing of such

application(s) to the television stations which may be affected. A list of the notified television stations must be submitted with the subject applications.

(b) In lieu of public correspondence service an AMTS system may provide private coast station communications related to the operational requirements of ships including transmissions of fuel, weather, position and supply reports. However, such communications may be provided only to ship stations whose licensees make cooperative arrangements with the AMTS coast station licensees. In emergency and distress situations, services must be provided without prior arrangements.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35245, Sept. 18, 1987; 56 FR 3783, Jan. 31, 1991]

### §80.477 Points of communications.

(a) AMTS coast stations may communicate with fixed platform stations located in the offshore waters of the Gulf of Mexico and with ship stations.

(b) AMTS licensees in the offshore waters of the Gulf of Mexico may use AMTS coast and ship station frequencies on a secondary basis for fixed service communications to support offshore AMTS operations.

(c) AMTS service may be provided to any vessel within communication service range of an AMTS station even though the vessel may not be operating within the confines of a served waterway.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35245, Sept. 18, 1987]

### §80.479 Assignment and use of frequencies for AMTS.

(a) The frequencies assignable to AMTS stations are listed in subpart H of this part. These frequencies are assignable to ship and public coast stations for voice, facsimile and radioteletypewriter communications.

(b) [Reserved]

## Subpart K—Private Coast Stations and Marine Utility Stations

### §80.501 Supplemental eligibility requirements.

(a) A private coast station or a marine utility station may be granted only to a person who is:

(1) Regularly engaged in the operation, docking, direction, construction, repair, servicing or management of one or more commercial transport vessels or United States, state or local government vessels; or is

(2) Responsible for the operation, control, maintenance or development of a harbor, port or waterway used by commercial transport vessels; or is

(3) Engaged in furnishing a ship arrival and departure service, and will employ the station only for the purpose of obtaining the information essential to that service; or is

(4) A corporation proposing to furnish a nonprofit radio communication service to its parent corporation, to another subsidiary of the same parent, or to its own subsidiary where the party to be served performs any of the eligibility activities described in this section; or is

(5) A nonprofit corporation or association, organized to furnish a maritime mobile service solely to persons who operate one or more commercial transport vessels; or is

(6) Responsible for the operation of bridges, structures or other installations that area part of, or directly related to, a harbor, port or waterway when the operation of such facilities requires radio communications with vessels for safety or navigation; or is

(7) A person controlling public moorage facilities; or is

(8) A person servicing or supplying vessels other than commercial transport vessels; or is

(9) An organized yacht club with moorage facilities; or is

(10) A nonprofit organization providing noncommercial communications to

vessels other than commercial transport vessels.

(b) Each application for station authorization for a private coast station or a marine utility station must be accompanied by a statement indicating eligibility under paragraph (a) of this section.

**§ 80.503 Cooperative use of facilities.**

(a) A person engaged in the operation of one or more commercial transport vessels or government vessels may receive maritime mobile service from a private coast station or a marine utility station on shore even though not the licensee of the private coast station or the marine utility station. Restrictions on cooperative arrangements are as follows:

(1) Foreign persons must be the licensees of the radio stations installed on board their vessels.

(2) The licensee of a private coast station or marine utility station on shore may install ship radio stations on board United States commercial transport vessels of other persons. In each case these persons must enter into a written agreement verifying that the ship station licensee has the sole right of control of the ship stations, that the vessel operators must use the ship stations subject to the orders and instructions of the coast station or marine utility station on shore, and that the ship station licensee will have sufficient control of the ship station to enable it to carry out its responsibilities under the ship station license.

(b) Cooperative arrangements are limited concerning cost and charges as follows:

(1) The arrangement must be established on a non-profit, cost-sharing basis by written contract. A copy of the contract must be kept with the station records and made available for inspection by Commission representatives.

(2) Contributions to capital and operating expenses are to be prorated on an equitable basis among all persons who are parties to the cooperative arrangement. Records which reflect the cost of the service and its nonprofit, cost-sharing nature must be maintained by the licensee of the station and made available for inspection by Commission representatives.

**§ 80.505 Points of communication.**

(a) Private coast stations and marine utility stations are authorized to communicate:

(1) With any mobile station in the maritime mobile service for the exchange of safety communications;

(2) With any land station for the purpose of aiding the exchange of safety communications;

(3) With ship stations.

(b) Private coast stations of the same licensee may be authorized to communicate on a secondary basis between themselves if:

(1) The communications are confined exclusively to those for which authority has been granted the coast station, and concerns ships with which one or both of the coast stations are authorized to communicate; and

(2) Other satisfactory point-to-point communication facilities between the coast stations are unavailable; and

(3) Coast stations which communicate with each other are not more than 160 km (100 miles) apart; and

(4) Harmful interference is not cause to mobile stations.

(c) A private coast station and associated marine utility stations serving and located on a shipyard regularly engaged in construction or repair of commercial transport vessels or Government vessels are authorize to communicate between stations when they are licensed to the same entity and communications are limited to serving the needs of ships on a non-interference basis to other stations in the maritime mobile service. A separate showing is required.

**§ 80.507 Scope of service.**

(a) A private coast station or marine utility station using telephony serves the operational and business needs of ships including the transmission of safety communication.

(b) In areas where environmental communications are provided by U.S. Government stations or by public coast stations, private coast stations and marine utility stations on shore must not duplicate that service. In other

areas, private coast stations and marine utility stations on shore may transmit weather and hydrographic information required for the ships with which they normally communicate. Private coast stations may provide environmental communication service in areas where adequate service is not available.

(c) Each marine utility station on shore must be operated as a private coast station except that it may be operated at temporary unspecified locations. Marine utility stations on ships are operated as ship stations.

### §80.509 Frequency assignment.

Frequencies assignable to private coast stations and marine utility stations are listed in subpart H.

### §80.511 Assignment limitations.

(a) Only one port operation, one commercial and one non-commerical frequency will be assigned to a private coast station or marine utility station. Applications for authority to use more than one frequency in any one of the above three categories must include a showing of need as specified below.

(b) An application for an additional frequency by a person who services vessels, must include a description of the vessels with which communication is planned and a statement that the applicant has personal knowledge that the ship radio stations are not capable of operating on working frequencies already assigned to the coast station.

(c) An application for an additional frequency based on congestion of the assigned frequency must show that for any four periods of 5 consecutive days each, in the preceeding 6 months, the assigned frequency was in use at least 25 percent of the time during 3 hours of daily peak activity. If the application for an additional frequency is based on the congestion by other nearby stations, the showing must include the call signs and locations of such stations.

### §80.513 Frequency coordination.

(a) Except as provided in paragraphs (b) and (c) of this section each application for a new VHF private coast station license or modification of an existing license to be located in an area having a recognized frequency coordinating committee must be accompanied by:

(1) A report based on a field study, indicating the degree of probable interference to existing stations operating in the same area. The applicant must consider all stations operating on the working frequency or frequencies requested or assigned within 80 km (50 miles) of the proposed station location, and

(2) The report must include a statement that all existing licensees on the frequency within 80 km (50 miles) and the frequency coordinating committee have been notified of the applicant's intention to file an application. The notice of intention to file must provide the licensees concerned and the advisory committee with the following information: The frequency and emission; transmitter location and power; and the antenna height proposed by the applicant.

(b) Applications for modification need not be accompanied by the field study where the modification does not involve any change in frequency(ies), power, emission, antenna height, antenna location or area of operation.

(c)(1) In lieu of the field study, a statement from a frequency coordinating committee may be submitted with the application. The committee must comment on the requested frequency or the proposed changes in the authorized station and give an opinion regarding the probable interference to existing stations. The committee must consider all stations operating on the requested frequency within 80 km (50 miles) of the proposed station location. The frequency coordinating committee statement must also recommend a frequency which will result in the least amount of interference to proposed and existing stations. Committee recommendations may also include comments on technical factors and may recommend restrictions to minimize interference.

(2) A frequency coordinating committee must be representative of all persons who are eligible for VHF private coast stations within the service area of the recognized frequency coordinating committee. A statement of organization, service area and composition of

the committee must be submitted to the Commission for approval. The functions of any coordinating committee are purely advisory to the applicant and the Commission. Its recommendations are not binding upon either the applicant or the Commission.

### § 80.514 Marine VHF frequency coordinating committee(s).

This section contains the names of organizations that have been recognized by the Commission to serve as marine VHF frequency coordinating committees for their respective areas. For frequency advisory committee mailing address information, write or call: FCC, Wireless Telecommunications Bureau, Customer Services Division, Consumer Assistance Branch, Gettysburg, PA 17326. Phone: 800–322–1117.

(a) The Southern California Marine Radio Council serves the California counties of Santa Barbara, Kern, San Bernardino, Ventura, Los Angeles, Orange, Riverside, San Diego, Imperial and the Channel Islands.

(b) The North Pacific Marine Radio Council serves the following counties in the State of Washington: Clallam, Island, Jefferson, King, Kitsap, Mason, Pierce, San Juan, Skagit, Snohomish, Thurston, and Whatcom.

[52 FR 35246, Sept. 18, 1987, as amended at 56 FR 6583, Feb. 19, 1991; 60 FR 50122, Sept. 28, 1995]

### § 80.515 Limitations on use.

A private coast station or marine utility station using telephony must:

(a) Not be used for public correspondence;

(b) Not be used to transmit program material for radio broadcasting; and

(c) Not be used to transmit press material or news items which are not required to serve the needs of ships.

### § 80.517 Time limitation on communication.

All communication engaged in by private coast stations and marine utility stations must be limited to the minimum practicable transmission time. Each station licensee must employ standardized operating practices and procedures.

### § 80.519 Station identification.

(a) Stations must identify transmissions by announcing in the English language the station's assigned call sign. In lieu of the identification of the station by voice, the official call sign may be transmitted by tone-modulated telegraphy in international Morse Code manually or by means of an automatic device approved by the Commission. Transmissions on the navigation frequency (156.650 MHz) by stations on drawbridges may be identified by use of the name of the bridge in lieu of the call sign. Identification must be made:

(1) At the beginning and end of each exchange of communications and;

(2) At intervals not exceeding 15 minutes whenever transmissions or communications are sustained for more than 15 minutes.

(b) Marine utility stations or private coast stations when exchanging communications with marine utility stations may be identified by a unit identifier in lieu of the call sign. Identification by transmission of the assigned call sign must be at the end of the exchange of communications or at least once each 15 minutes.

## Subpart L—Operational Fixed Stations

### § 80.551 Applicability.

This subpart contains rules applicable to operational fixed stations.

### § 80.553 Supplemental eligibility requirements.

An applicant for an operational fixed station must show that:

(a) The applicant is the licensee of a coast station;

(b) Other suitable telecommunications facilities are not available to satisfy coast station requirements.

### § 80.555 Scope of communication.

An operational fixed station provides control, repeater or relay functions for its associated coast station.

### § 80.557 Assignment and use of frequencies.

The specific frequencies for these stations are listed in subpart H of this part.

### §80.559 Licensing limitations.

Operational fixed stations are subject to the following licensing limitations:

(a) A maximum of four frequencies will be assigned.

(b) Stations will not be authorized when applications indicate less than 16 km (10 miles) separation between a proposed station and a TV transmitter operating on either Channel 4 or 5, or from the post office of a community in which either channel is assigned but not in operation.

(c) Stations located between 16 km (10 miles) and 128 km (80 miles) of a TV transmitter operating on either Channel 4 or 5, or from the post office of a community in which either channel is assigned but not in operation, are secondary to TV operations within the Grade B service contour.[1]

[51 FR 31213, Sept. 2, 1986; 51 FR 34984, Oct. 1, 1986; as amended at 54 FR 40059, Sept. 29, 1989]

## Subpart M—Stations in the Radiodetermination Service

### §80.601 Scope of communications.

Stations on land in the Maritime Radiodetermination Service provide a radionavigation or radiolocation service for ships.

### §80.603 Assignment and use of frequencies.

The frequencies available for assignment to shore radionavigation/radiolocation stations are contained in subpart H of this part.

### §80.605 U.S. Coast Guard coordination.

(a) Radionavigation coast stations operated to provide information to aid in the movement of any ship are private aids to navigation. Before submitting an application for an radionavigation station, an applicant must obtain written permission from the cognizant Coast Guard District Commander at the area in which the device will be located. Documentation of the Coast Guard approval must be submitted with the application.

NOTE: Surveillance radar coast stations do not require U.S. Coast Guard approval.

(b) Applications for type acceptance of coast and ship station transponders must include a description of the technical characteristics of the equipment including the scheme of interrogation and the characteristics of the transponder response. When a type acceptance application in submitted to the Commission a copy of such application must be submitted concurrently to: Commandant (G–TTS–3), U.S. Coast Guard, Washington, DC 20593.

(c) Prior to submitting an application for a non-selectable transponder coast station license in the 2920–3100 MHz or 9320–9500 MHz band the applicant must submit a letter requesting written approval of the proposed station to the cognizant Coast Guard District Commander of the area in which the device will be located. The letter must include:

(1) The necessity for the station;

(2) The latitude and longitude of its position;

(3) The transponder antenna height above sea level;

(4) The antenna azimuth response (angle of directivity);

(5) The manufacturer and model number of the transponder;

(6) The identifying Morse character for transponders used as racons;

(7) The name and address of the person responsible for the operation and maintenance of the station;

(8) The time and date during which it is proposed to operate the station; and

(9) The maximum station e.i.r.p. if it would exceed 5 watts.

A copy of the request and the U.S. Coast Guard approval must be submitted to the Commission with the station license application.

(d) Prior to submitting an application for a non-selectable transponder ship station license in the 2920–3100

[1] OET Bulletin No. 67, March 1988, entitled ''Potential Interference from Operational Fixed Stations in the 72–76 MHz Band to Television Channels 4 and 5'' describes an analytical model that can be used to calculate the potential interference that might result from a given fixed station operation. Copies of the bulletin may be obtained from the Commission's current duplication contractor. Information concerning the current duplication contractor may be obtained from the Office of Public Affairs, Consumer Assistance and Small Business Division, Telephone (202) 632–7000.

MHz or 9320–9500 MHz band the applicant must submit a letter requesting approval of the proposed station to: Commandant (G–NSR), U.S. Coast Guard, Washington, DC 20593. The letter must include the name, address and telephone number of a person or a point of contact responsible for the operation of the device, the specific need for the station, the name of the associated ship, the area in which the transponder will be used, and the hours of operation. A copy of the request and the U.S. Coast Guard approval must be submitted to the Commission with the station license application.

[52 FR 7419, Mar. 11, 1987]

## Subpart N—Maritime Support Stations

### § 80.651 Supplemental eligibility requirements.

(a) An applicant for a maritime support station must demonstrate a requirement for training personnel associated with the maritime service or for the testing, demonstration or maintenance of ship or coast radio equipment.

(b) [Reserved]

### § 80.653 Scope of communications.

(a) Maritime support stations are land stations authorized to operate at permanent locations or temporary unspecified locations.

(b) Maritime support stations are authorized to conduct the following operations:

(1) Training of personnel in maritime telecommunications;

(2) Transmissions necessary for the test and maintenance of maritime radio equipment at repair shops; and

(3) Transmissions necessary to test the technical performance of the licensee's public coast station(s) radiotelephone receiver(s); and

(4) Transmissions necessary for radar/racon equipment demonstration.

### § 80.655 Use of frequencies.

(a) The frequencies available for assignment to maritime support stations are described or listed in:

(1) Section 80.373 for scope of communications described in § 80.653(b)(1);

(2) Sections 80.373 and 80.385 for scope of communications described in § 80.653(b)(2); and

(3) Section 80.389 for scope of communications described in § 80.653 (b)(3) and (4).

(b) Frequencies must be used only on a secondary, non-interference basis to operational maritime communications.

(c) Use of frequencies assigned to services other than the maritime radiolocation service is limited to one hour per twenty four hour period.

[51 FR 31213, Sept. 2, 1986, as amended at 52 FR 35245, Sept. 18, 1987]

### § 80.659 Technical requirements.

The authorized frequency tolerance, class of emission, bandwidth, and transmitter power for maritime support stations are contained in subpart E of this part under the category associated with the intended use except for power limitations imposed upon stations operating within the scope of § 80.653(b)(3), which are further limited by the provisions of § 80.215(f).

## Subpart O—Alaska Fixed Stations

### § 80.701 Scope of service.

There are two classes of Alaska Fixed stations. Alaska-public fixed stations are common carriers, open to public correspondence, which operate on the paired duplex channels listed in subpart H of this part. Alaska-private fixed stations may operate on simplex frequencies listed in subpart H of this part to communicate with other Alaska private fixed stations or with ship stations, and on duplex frequencies listed in subpart H of this part when communicating with the Alaska-public fixed stations. Alaska-private fixed stations must not charge for service, although third party traffic may be transmitted. Only Alaska-public fixed stations are authorized to charge for communication services.

### § 80.703 Priority of distress and other signals.

Alaska-public fixed stations, when operating on an authorized carrier frequency which is also used by the maritime mobile service, must give priority to distress, urgency or safety signals,

or to any communication preceded by one of these signals.

### §80.705 Hours of service of Alaska-public fixed stations.

Each Alaska-public fixed station whose hours of service are not continuous must not suspend operations before having concluded all communications of an emergency nature.

### §80.707 Cooperative use of frequency assignments.

(a) Only one Alaska-public fixed station will be authorized to serve any area whose point-to-point communication needs can be adequately served by a single radio communication facility.

(b) Each radio channel authorized for use by an Alaska-private fixed station is available on a shared basis only. All station licensees must cooperate in the use of their respective frequency assignments to minimize interference.

### §80.709 Frequencies available.

Frequencies assignable to Alaska fixed stations are listed in subpart H of this part.

### §80.711 Use of U.S. Government frequencies.

Alaska-public fixed stations may be authorized to use frequencies assigned to U.S. Government radio stations for communications with Government stations or for coordination of Government activities.

## Subpart P—Standards for Computing Public Coast Station VHF Coverage

### §80.751 Scope.

This subpart specifies receiver antenna terminal requirements in terms of power, and relates the power available at the receiver antenna terminals to transmitter power and antenna height and gain.

### §80.753 Signal strength requirements at the service area contour.

(a) The requirements for reception by a marine VHF shipboard receiver are satisfied if the field strength from the coast station, calculated in accordance with §80.771 is at least +17 dBu above one microvolt.

(b) These field strengths, voltages and powers at the receiver input are equivalent:

(1) −132 dBW (decibels referred to 1 watt).

(2) 1.8 microvolts across 50 ohms.

(3) +17 dBu (decibels referred to 1 microvolt per meter).

(4) 7 microvolts per meter.

### §80.755 Applicability.

Applications for maritime frequencies in the 156–162 MHz band must include a map showing the proposed service area contour. The service area contour must be computed in accordance with the following procedures.

### §80.757 Topographical data.

(a) In the preparation of profile graphs and in determining the location and height above sea level of the antenna site, the elevations or contour intervals must be taken from U.S. Geological Survey topographic quadrangle maps, U.S. Army Corps of Engineers maps or Tennessee Valley Authority maps, whichever is the latest, for all areas for which maps are available. If such maps are not published for the area in question, the next best topographic information must be used. The maps used must include the principal area to be served. U.S. Geological Survey topographic quadrangle maps may be obtained from the Eastern Distribution Branch, U.S. Geological Survey, 1200 South Eads Street, Arlington, VA 22202, for maps of areas east of the Mississippi River, including Minnesota, Puerto Rico, and the Virgin Islands, and from the Western Distribution Branch, U.S. Geological Survey, Federal Center, Denver CO 80225, for maps of areas west of the Mississippi River, including Alaska, Hawaii, Louisiana, Guam and American Samoa. Sectional aeronautical charts are available from the Distribution Division, National Ocean Service, Riverdale, MD 20840.

(b) In lieu of maps, the average terrain elevation may be computer generated, using elevations from a 30 second point or better topographic data file such as those available for the U.S. Geological Survey's National Geographic Information Center or the National Oceanic and Atmospheric Administration's National Geophysical

Data Center. In case of dispute maps will be used to determine the correct value.

### § 80.759 Average terrain elevation.

(a)(1) Draw radials from the antenna site for each 45 degrees of azimuth starting with true north. Any such radial which extends entirely over land from the antenna site to the point of +17 dBu field strength need not be drawn.

(2) If the distance from the antenna site to the point of +17 dBu field strength between any of the 45 degrees radials would be less than the distances calculated along these radials, an additional radial between such adjacent radials must be plotted and calculations made in each case. Each additional radial must be that radial along which it appears by inspection that transmission loss would be greatest.

(b) Draw a circle of 16 km (10 statute mile) radius using the antenna site as the center. Divide each radial into 320 meter (0.2 statute mile) increments inside the circumference to the 3.2 km (2 statute mile) point.

(c) Calculate the height above sea level of each 320 meter (0.2 statute mile) division by interpolating the contour intervals of the map, and record the value.

(d) Average the values by adding them and dividing by the number of readings along each radial.

(e) Calculate the height above average terrain by averaging the values calculated for each radial.

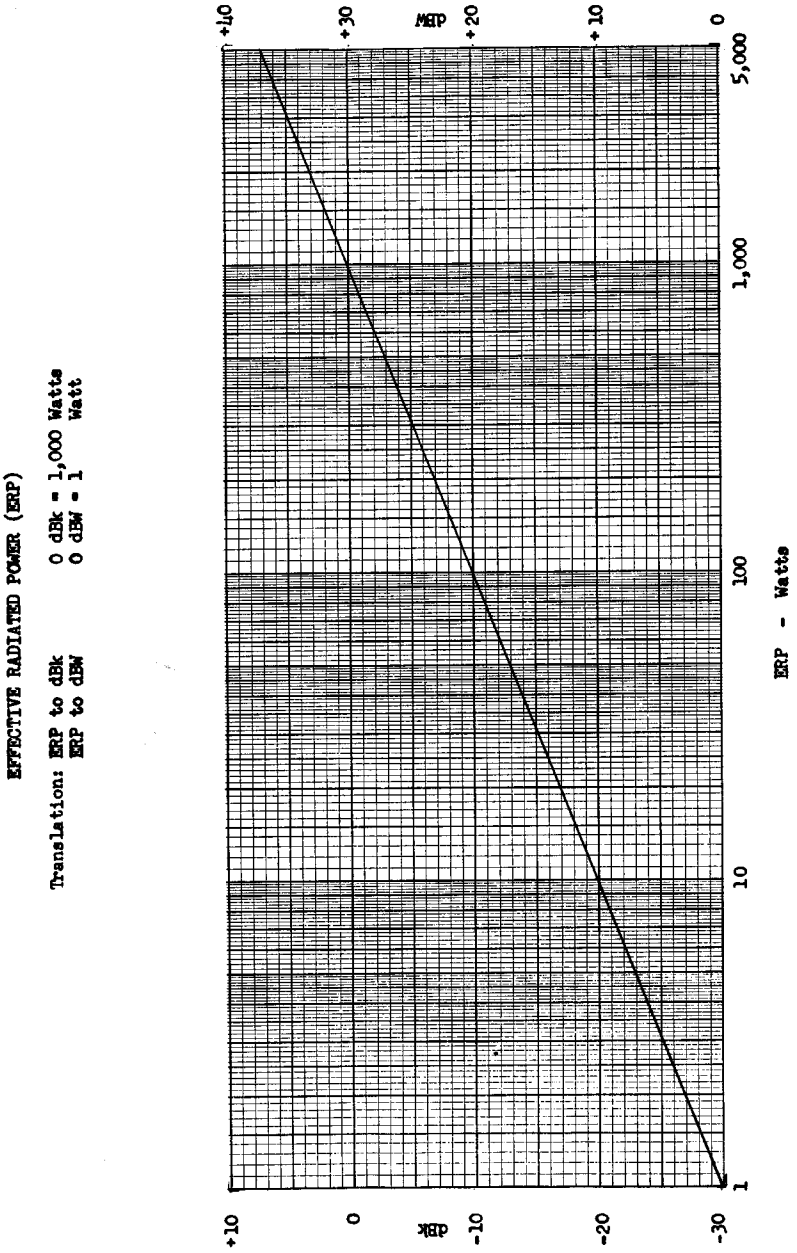
[51 FR 31213, Sept. 2, 1986, as amended at 58 FR 44953, Aug. 25, 1993]

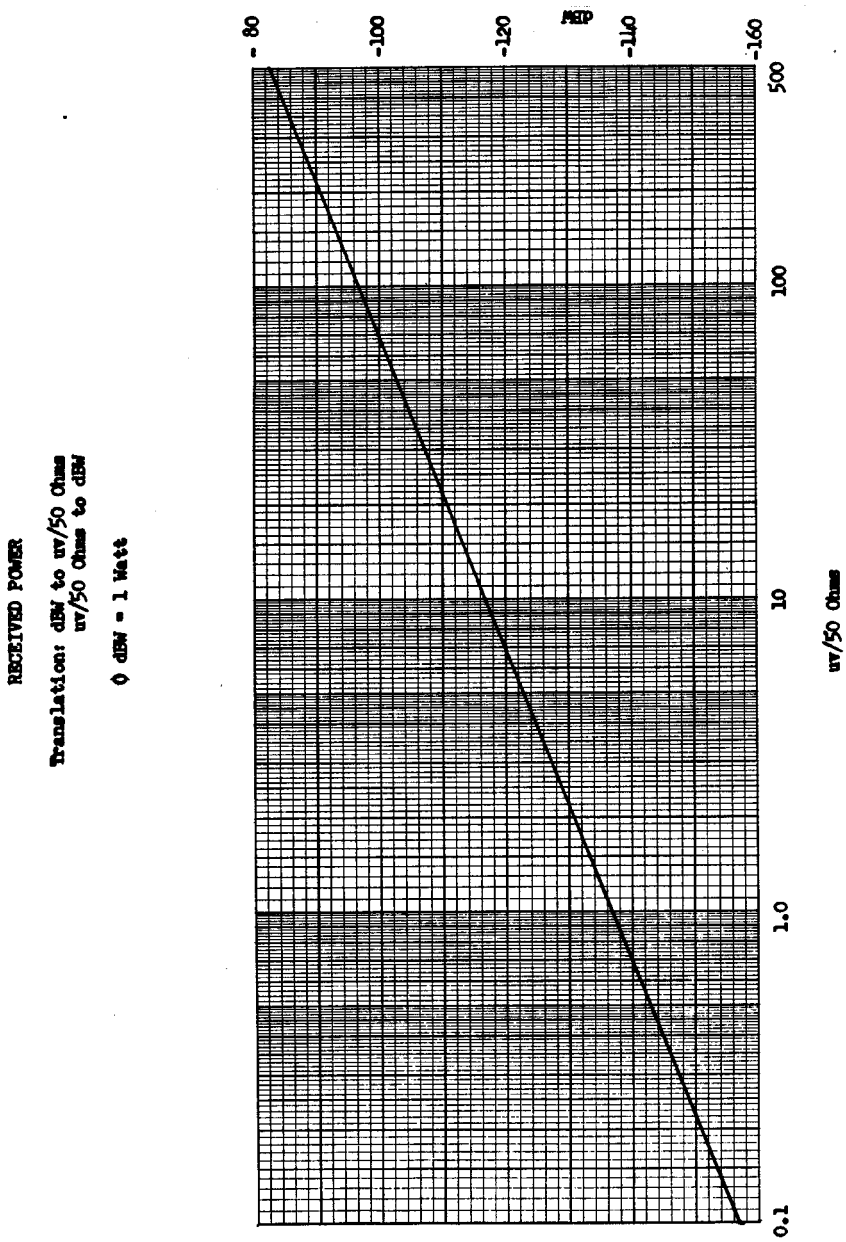
### § 80.761 Conversion graphs.

The following graphs must be employed where conversion from one to the other of the indicated types of units is required.

(a) *Graph 1.* To convert effective radiated power in watts to dBk or to dBW, find the power in watts on the horizontal axis. Move vertically along the line representing the power to the diagonal line. Move horizontally from the diagonal to the right side to read dBW and to the left to read dBk.

(b) *Graph 2.* To convert microvolts across 50 ohms to received power in dBW, find the signal in microvolts on the horizontal axis. Move vertically to the diagonal line, then move right horizontally to read dBW.


EFFECTIVE RADIATED POWER (ERP)
Translation: ERP to dBk 0 dBk = 1,000 Watts
ERP to dBW 0 dBW = 1 Watt
+40
+30
dBW
+20
+10
0
+10
0
dBk
-10
-20
-30
1
10
100
1,000
5,000
ERP - Watts


RECEIVED POWER
Translation: dBW to uv/50 Ohms
uv/50 Ohms to dBW
0 dBW = 1 Watt
- 80
-100
-120
-140
-160
MEP
0.1
1.0
10
100
500
uv/50 Ohms

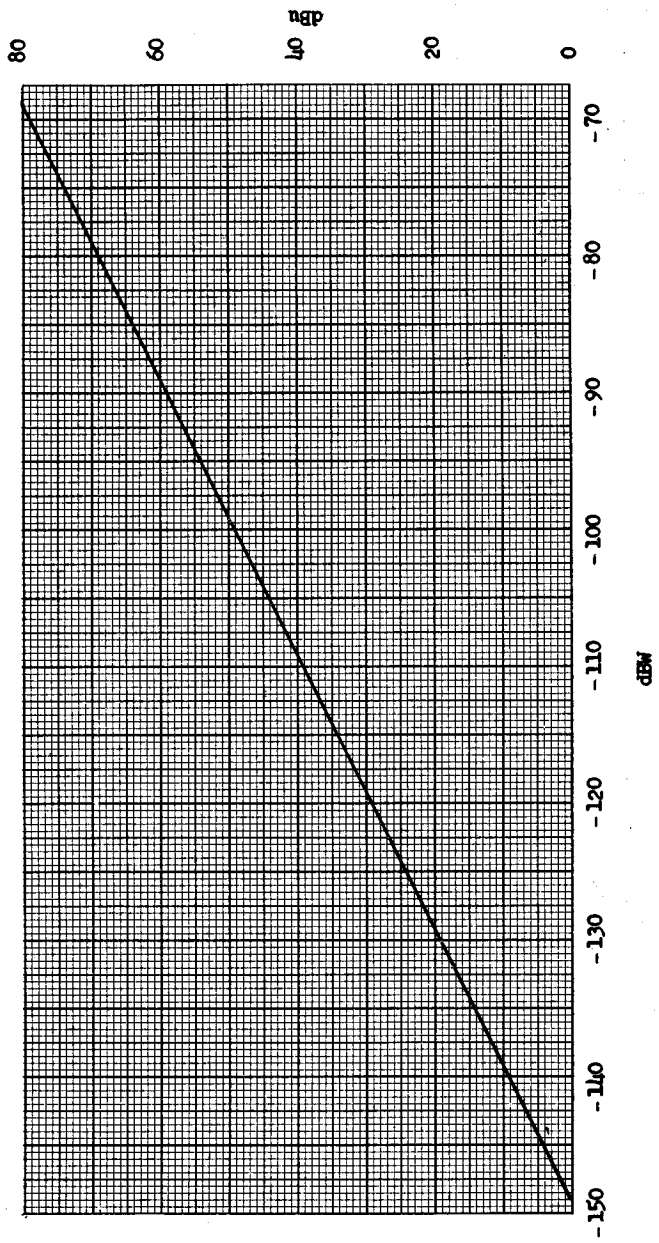
(c) *Graph 3.* To convert received power in dBW to field intensity in dBu find the received power in dBW on the horizontal axis. Move vertically to the diagonal line, then move right horizontally to read dBu.

FIELD INTENSITY VS RECEIVED POWER

For Half-Wave Dipole

Received Power in uv/50 Ohms

0 dBW = 1 Watt
0 dBu = 1 microvolt /meter



### §80.763 Effective antenna height.

The effective height of the antenna is the vertical distance between the center of the radiating system above the mean sea level and the average terrain elevation.

### §80.765 Effective radiated power.

Effective radiated power is used in computing the service area contour. The effective radiated power is derived from the transmitter output power, loss in the transmission system including duplexers, cavities, circulators, switches and filters, and the gain relative to a half-wave dipole of the antenna system.

### §80.767 Propagation curve.

The propagation graph, §80.767 Graph 1, must be used in computing the service area contour. The graph provides data for field strengths in dBu for an effective radiated power of 1 kW, over sea water, fresh water or land (smooth earth); transmitting antena heights of 4,800, 3,200, 1,600, 800, 400, 200, and 100 feet; based on a receiving antenna height of 9 meters (30 feet), for the 156–162 MHz band. The use of this is described in this section.

(a) Calculate the effective radiated power of the coast station, Ps in dB referred to 1 kW (dBk), as follows:

$$P_s = Pt + G - L$$

where,

Pt=Transmitter output power in dB referred to 1 kW: Transmitter output power in watts is converted to dBk by Pt=10 [log10 (Power in watts)]−30. Also see §80.761 Graph 1 for a conversion graph.

G=Antenna gain in dB referred to a standard half-wave dipole, in the direction of each plotted radial, and

L=Line losses between the transmitter and the antenna, in dB.

NOTES:

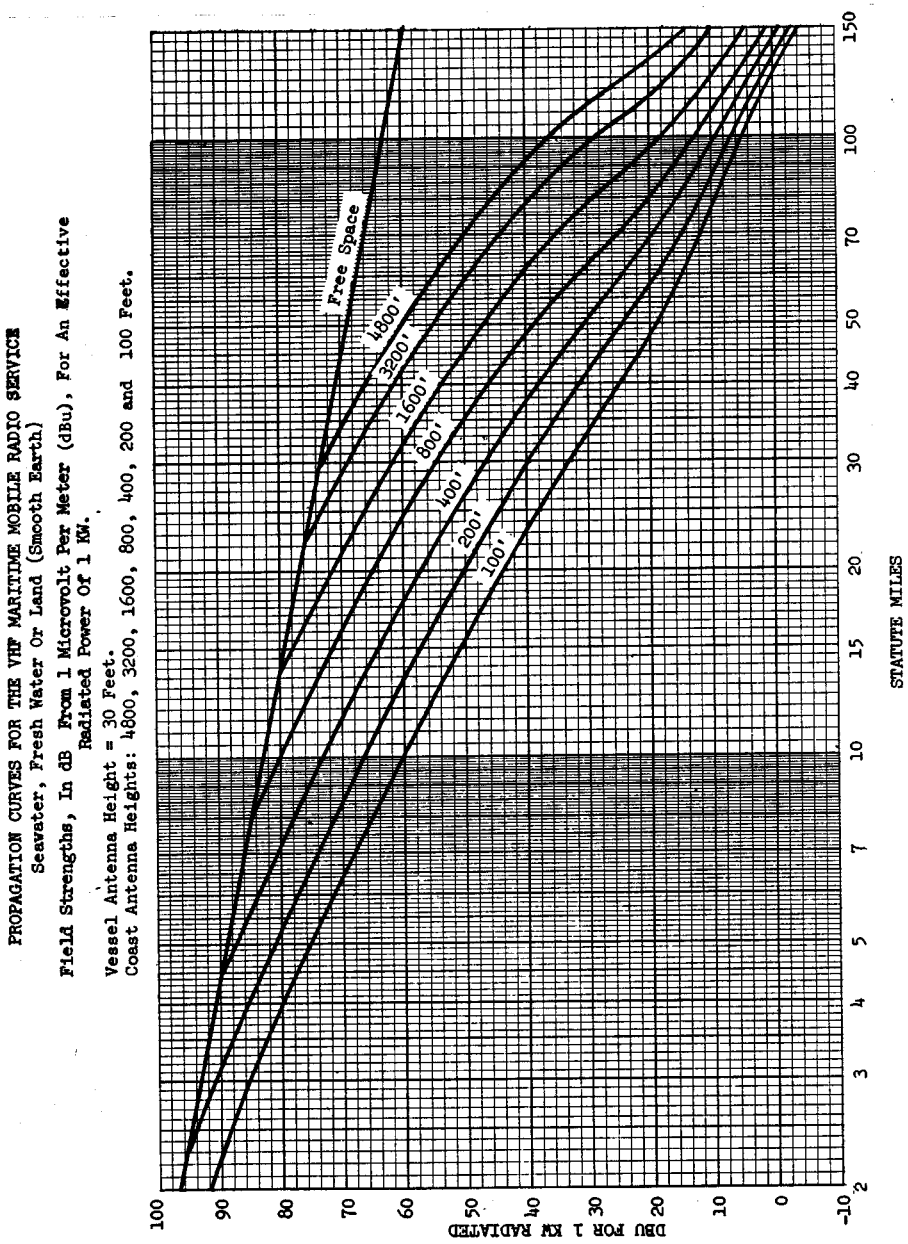
1. To determine field strengths where the distance is known, for effective radiated powers other than 1kW (0 dBk): Enter the graph from the ''statute miles'' scale at the known distance, read up to intersection with the curve for the antenna height, read left to the ''dBu for 1 kW radiated'' scale and note the referenced field strength (Fe). The value of the actual field strength (F) in dBu will be F=Fe+Ps where Ps is the effective radiated power calculated above.

2. To determine distance, where the actual field strength is specified, for effective radiated powers other than 0 dBk: The value of the field referenced strength will be Fe=F−Ps in dBu. Enter the graph, from the ''dBu for 1 kW radiated'' scale at the corrected value of Fe, read right to intersection with the antenna height, read down to ''statute miles'' scale.

(b) Determine the antenna height. For antenna heights between the heights for which this graph is drawn, use linear interpolation; assume linear height-gain for antennas higher than 4,800 feet.

(c) For receiver antenna heights lower than 9 meters (30 feet), assume that the field strength is the same as at 9 meters (30 feet).

(d) Assume that propagation over fresh water or over land is the same as that over sea water.


PROPAGATION CURVES FOR THE VHF MARITIME MOBILE RADIO SERVICE
Seawater, Fresh Water Or Land (Smooth Earth)
Field Strengths, In dB From 1 Microvolt Per Meter (dBu), For An Effective Radiated Power Of 1 KW.
Vessel Antenna Height = 30 Feet.
Coast Antenna Heights: 4800, 3200, 1600, 800, 400, 200 and 100 Feet.
Free Space
4800'
3200'
1600'
800'
400'
200'
100'
DBU FOR 1 KW RADIATED
100
90
80
70
60
50
40
30
20
10
0
-10
2
3
4
5
7
10
15
20
30
40
50
70
100
150
STATUTE MILES

**§80.769 Shadow loss.**

Where the transmission path is obstructed the received signal must be adjusted to include shadow loss. Attenuation due to shadowing must be taken from §80.769 Graph 1, as follows:

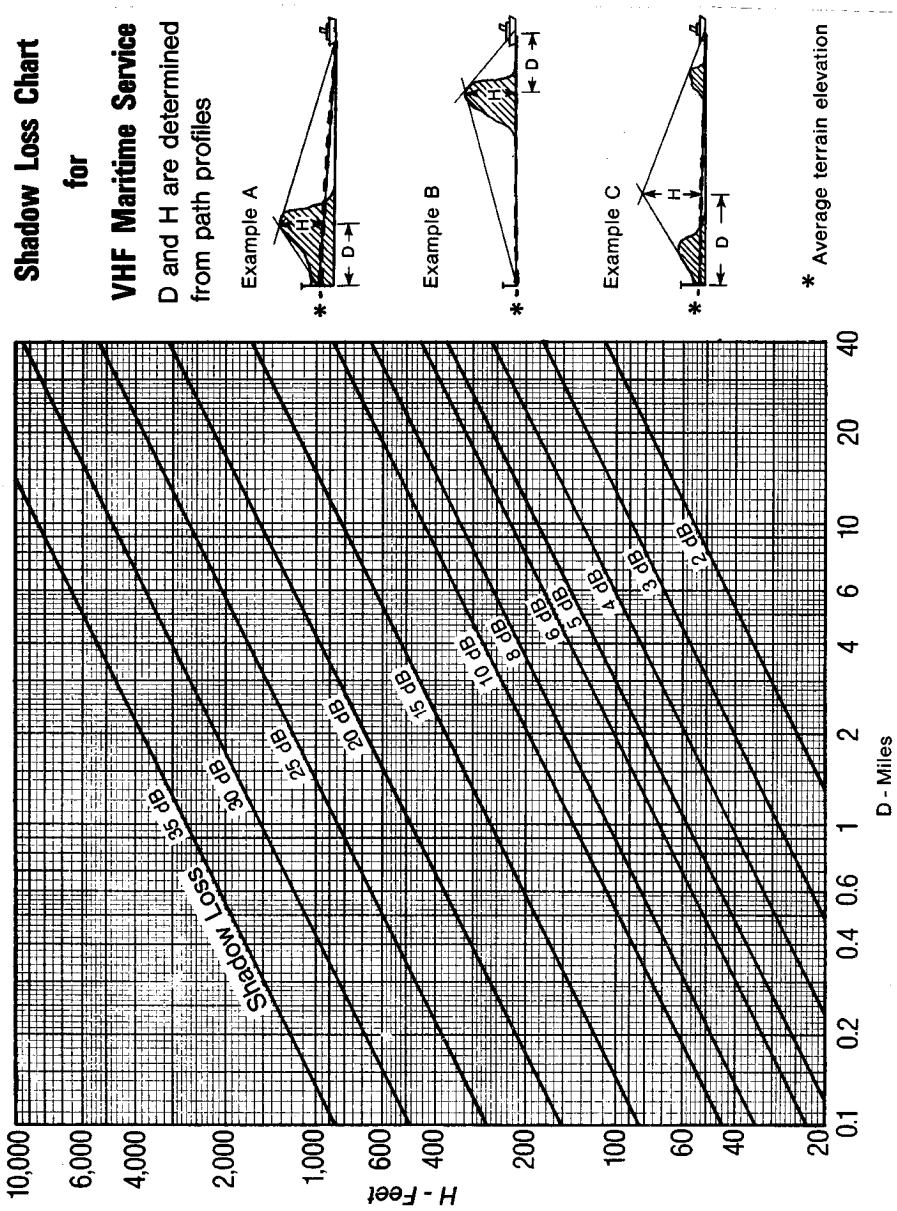
(a) Inspect the map(s) to determine if a hill(s) obstructs an imaginary line of sight (dashed line on illustrative profiles of §80.769 Graph 1 from the average terrain elevation at the coast station antenna to the water level at the ship location. If average terrain elevation exceeds the actual ground elevation at the antenna site, the latter elevation must be used as the average terrain elevation.

(b) If a hill appears to obstruct the radio path, plot the antenna site elevation, the obstruction elevation and the height of the ship station on rectangular coordinate paper using elevation above mean sea level as the vertical scale and distance in statute miles as the horizontal scale. Then draw a straight line between the antenna and the ship.

(c) If a hill obstructs the imaginary line of sight, determine its height (H) above the imaginary line and its distance (D) from either the coast or ship station, whichever is nearer, as illustrated by examples ''A'' and ''B'' on Graph 1.

(d) Read the shadow loss from this Graph 1 and subtract that loss from the computed received signal.

(e) Where more than one hill obstructs the transmission path, determine the height and position of a single equivalent hill, as illustrated by example ''C'' on this graph. Read the shadow loss from this graph for the equivalent hill.


Shadow Loss Chart
for
VHF Maritime Service
D and H are determined
from path profiles
Example A
Example B
Example C
* Average terrain elevation
Shadow Loss
35 dB
30 dB
25 dB
20 dB
15 dB
10 dB
8 dB
6 dB
5 dB
4 dB
3 dB
2 dB
H - Feet
10,000
6,000
4,000
2,000
1,000
600
400
200
100
60
40
20
0.1
0.2
0.4
0.6
1
2
4
6
10
20
40
D - Miles

### §80.771 Method of computing coverage.

Compute the +17 dBu contour as follows:

(a) Determine the effective antenna height above mean sea level according to the procedures in §§80.757–80.761.

(b) Determine the effective radiated power according to §80,765. Determine for each radial the distance from the antenna site to the +17 dBu point of field strength using procedures of §§80.765 and 80.767.

(c) Plot on a suitable map each point of +17 dBu field strength for all radials and draw the contour by connecting the adjacent points by a smooth curve.

### §80.773 Ratio of desired to undesired signal strengths.

Where a frequency is shared the ratio of desired to undesired signal strengths must be at least 12 dB within the service area of a station.

STATIONS ON SHIPBOARD

## Subpart Q—Compulsory Radiotelegraph Installations for Vessels 1600 Gross Tons

### §80.801 Applicability.

The radiotelegraph requirements of Part II of Title III of the Communications Act apply to all passenger ships irrespective of size and cargo ships of 1600 gross tons and upward. The Safety Convention applies to such ships on international voyages. These ships are required to carry a radiotelegraph installation complying with this subpart.

### §80.802 Inspection of station.

(a) Every ship of the United States subject to Part II of Title III of the Communications Act or the radio provisions of the Safety Convention must have the required equipment inspected at least once every 12 months. If the ship is in compliance with the requirements of the Safety Convention, a Safety Certificate will be issued; if in compliance with the Communications Act, the license will be endorsed accordingly.

(1) The effective date of ship safety certificates is the date the station is found to be in compliance or not later than one business day later.

(2) At inspection, the minimum field strength capability of the main installation and reserve installation when connected to the main antenna may be shown by the licensee by one of the following methods:

(i) Producing a record of communications on 500 kHz over a minimum distance of 370 kilometers (200 nautical miles) for the main installation and 185 kilometers (100 nautical miles) for the reserve installation which demonstrates the transmission and reception of clearly perceptible signals from ship to ship by day and under normal conditions and circumstances, or

(ii) Provide documentation by a professional engineer, or a person holding a first or second class radiotelegraph operator's certificate, or a general radiotelephone operator license, that the installation produces at 1.85 kilometers (one nautical mile) a minimum field strength of thirty (30) millivolts per meter for the main installation and ten (10) millivolts per meter for the reserve installation. The licensee shall provide, at a minimum, the name and license number of the individual making the measurements or record of communications.

(b) Certificates issued in accordance with the Safety Convention must be posted in a prominent and accessible place in the ship.

[51 FR 31213, Sept. 2, 1986, as amended at 57 FR 26779, June 16, 1992]

### §80.804 Radio station.

The required radio station must comply with the provisions of this subpart in addition to all other applicable requirements of this part. The radio station consists of a radiotelegraph station and a ship radar station. The radiotelegraph station comprises a main and a reserve radiotelegraph installation, electrically separate and electrically independent of each other except as otherwise provided in paragraph (b) of §80.805, a radiotelephone installation and such other equipment as may be necessary for the proper operation of these installations. The ship radar station comprises a radar installation and such other equipment and

facilities as may be necessary for its proper operation.

### § 80.805 Radio installations.

(a) The main radiotelegraph installation includes a main transmitter, a main receiver, a main power supply, a main antenna system and a 2182 kHz radiotelephone distress frequency watch receiver.

(b) The reserve radiotelegraph installation includes a reserve transmitter, a reserve receiver, a reserve power supply, emergency electric lights and reserve antenna system: except that:

(1) In installations on cargo ships of 300 gross tons and upwards but less than 1,600 gross tons, and in installations on cargo ships of 1,600 gross tons and upwards installed prior to November 19, 1952, if the main transmitter complies with all the requirements for the reserve transmitter, the latter may be omitted.

(2) A cargo ship the keel of which was laid prior to June 1, 1954, may either be equipped with a reserve antenna or provided a spare antenna consisting of a single-wire transmitting antenna (including suitable insulators) completely assembled for immediate installation.

(c) The medium frequency radiotelephone installation includes a radiotelephone transmitter, a radiotelephone receiver and an appropriate antenna system.

### § 80.806 Requirements of main installation.

All main radiotelegraph installations must meet the following requirements:

(a) The main antenna must be installed and protected to ensure proper operation of the station. Effective October 14, 1986, the main antenna energized by the main transmitter on the frequency 500 kHz must produce at one nautical mile a minimum field strength of thirty (30) millivolts per meter. If the main antenna is suspended between masts or other supports liable to whipping, a safety link must be installed which, under heavy stress, will reduce breakage of the antenna, the halyards, or any other antenna-supporting elements.

(b) The main transmitter must be capable of meeting the requirements of § 80.253.

(c) The main receiver must efficiently receive A1A and A2A emission on all frequencies within the bands 100–200 kHz and 405–535 kHz. It must have headphones capable of effective operation. The main receiver must have sufficient sensitivity to effectively operate headphones or a loudspeaker when the receiver input is 50 microvolts.

(d) The main power supply must simultaneously (1) energize the main transmitter at its required antenna power, and the main receiver, (2) charge at any required rate all batteries forming part of the radiotelegraph station, and (3) charge the main power supply for this purpose at all times including times of inspection. Under this load condition the voltage of the main power supply at the radio room terminals must not deviate from its rated value by more than 10 percent on vessels completed on or after July 1, 1941, nor by more than 15 percent on vessels completed before that date. While at sea, batteries forming part of the main installation must be fully charged daily.

(e) To measure voltage(s) of the main power supply at its radio room terminals, voltmeter(s) must be permanently installed in the radiotelegraph operating room.

(f) The main installation must be provided with a device permitting changeover from transmission to reception and vice versa without manual switching.

(g) The main installation must be capable of being quickly connected with and tuned to the main antenna and the reserve antenna if one is installed.

### § 80.807 Requirements of radiotelephone installation.

All radiotelephone installations in radiotelegraph equipped vessels must meet the following conditions.

(a) The radiotelephone transmitter must be capable of transmission of A3E or H3E emission on 2182 kHz and must be capable of transmitting clearly perceptible signals from ship to ship during daytime, under normal conditions over a range of 150 nautical miles when used with an antenna system in accordance with paragraph (c) of this section. The transmitter must:

(1) Have a duty cycle which allows for transmission of the radiotelephone alarm signal described in §80.221.

(2) Provide 25 watts carrier power for A3E emission or 60 watts peak power on H3E emission into an artificial antenna consisting of 10 ohms resistance and 200 picofarads capacitance or 50 ohms nominal impedance to demonstrate compliance with the 150 nautical mile range requirement.

(3) Have a visual indication whenever the transmitter is supplying power to the antenna.

(4) Have a two-tone alarm signal generator that meets §80.221.

(5) The radiotelephone transmitter required by this paragraph may be contained in the same enclosure as the receiver required by paragraph (b) of this section. Additionally, these transmitters may have the capability to transmit J3E emissions.

(b)(1) The radiotelephone receiver must receive A3E and H3E emissions when connected to the antenna system specified in paragraph (c) this section and must be preset to 2182 kHz. The receiver must additionally:

(i) Provide an audio output of 50 milliwatts to a loudspeaker when the RF input is 50 microvolts. The 50 microvolt input signal must be modulated 30 percent at 400 Hertz and provide at least a 6 dB signal-to-noise ratio when measured in the rated audio bandwidth.

(ii) Be equipped with one or more loudspeakers capable of being used to maintain a watch on 2182 kHz at the principal operating position or in the room from which the vessel is normally steered.

(2) The receiver required by §80.805 may be used instead of this receiver. If the watch is stood at the place from which the ship is normally steered, a radiotelephone distress frequency watch receiver must be used for this purpose.

(3) This receiver may be contained in the same enclosure as the transmitter required by paragraph (a) of this section. Additionally, these receivers may have the capability to receive J3E emissions.

(c) The antenna system must be as nondirectional and efficient as is practicable for the transmission and reception of radio ground waves over seawater. The installation and construction of the required antenna must ensure, insofar as is practicable, proper operation in time of emergency. If the required antenna is suspended between masts or other supports subject to whipping, a safety link must be installed which under heavy stress will reduce breakage of the antenna, the halyards, or any other supporting elements.

(d) The radiotelephone installation must be provided with a device for permitting changeover from transmission to reception and vice versa without manual switching.

(e) An artificial antenna must be provided to permit weekly checks, without causing interference, of the automatic device for generating the radiotelephone alarm signal on frequencies other than the radiotelephone distress frequency.

(f) The radiotelephone installation must be located in the radiotelegraph operating room or in the room from which the ship is normally steered.

(g) Demonstration of the radiotelephone installation may be required by Commission representatives to show compliance with applicable regulations.

(h) The radiotelephone installation must be protected from excessive currents and voltages.

(i) The radiotelephone installation must be maintained in an efficient condition.

### §80.808 Requirements of reserve installation.

(a) All reserve radiotelegraph installations must comply with the following conditions, in addition to all other requirements:

(1) The reserve installation must be capable of being placed in operation within a maximum time of 1 minute.

(2) The reserve antenna must be installed and protected to ensure proper operation in time of an emergency.

(3) Effective October 14, 1986, the main antenna energized by the reserve transmitter on 500 kHz must produce at one nautical mile a minimum field strength of ten (10) millivolts per meter.

(4) The reserve transmitter must meet the requirements of § 80.255.

(5) The reserve receiver must receive A1A and A2B emissions on all frequencies within the band 405–535 kHz. It must have headphones. Additionally a loudspeaker may be provided for use in accordance with the provisions of § 80.313. The reserve receiver must be able to operate headphones or a loudspeaker when the receiver RF input is 100 microvolts.

(6) The reserve installation must be capable of being quickly connected with and tuned to the main antenna, and the reserve antenna if one is installed.

(7) Emergency electric lights, energized solely by the reserve power supply and connected to it through individual fuses must be provided. The emergency electric lights must illuminate the operating controls of the main and reserve radiotelegraph installations and the radio station clock. The emergency lighting circuits must avoid excessive voltage to the emergency lights during the charging of any batteries forming part of the reserve installation. The provisions of this paragraph do not preclude the use of any other power supply for energizing these lights solely as an additional provision. If a separate emergency radiotelegraph operating room is provided, the requirements of this paragraph apply to it.

(8) The emergency electric lights must be controlled by two-way switches placed near the main entrance to the radiotelegraph operating room and at the radiotelegraph operating position, in all cases where the distance between these points is greater than 2.4 meters (8 feet). This requirement applies to stations which replace, or initially install the main or reserve radiotelegraph transmitter on and after May 26, 1965.

(9) There must be readily available under normal load conditions a reserve power supply for the reserve installation which must be independent of the propelling power of the ship and of any other electrical system. The reserve power supply must simultaneously energize the reserve transmitter at its required antenna power and the reserve receiver for at least 6 hours continuously under normal working conditions, and energize the automatic-alarm-signal keying device continuously for a period of 1 hour.

(10) The reserve power supply may be used to energize the following apparatus provided it has adequate capacity:

(i) The audible warning apparatus included as a component of an approved radiotelegraph auto alarm;

(ii) The VHF installation required by subpart R of this chapter simultaneously with the reserve transmitter in the case of distress, urgency and safety communications;

(iii) The VHF installation required by subpart R of this chapter alternately with the reserve transmitter. A switching device must be fitted to ensure alternate operation only in the case of distress, urgency and safety communications;

(iv) The radiotelephone alarm signal generator;

(v) The bridge-to-bridge VHF radiotelephone installation required by subpart U of this chapter.

(11) The reserve power supply must be located as near to the reserve transmitter and reserve receiver as is practicable and must comply with all applicable rules and regulations of the United States Coast Guard. The switchboard of the reserve power supply must wherever possible, be situated in the radiotelegraph operating room. If it is not, it must be illuminated.

(12) All reserve power supply circuits must be protected from overloads.

(13) Means must be provided for charging any batteries forming a part of the reserve installation, and such batteries must be maintained in a fully charged condition daily while at sea. There must be a device which, during charging of the batteries, gives a continuous indication of the rate and polarity of the charging current.

(14) The cooling system of each internal combustion engine used as a part of the reserve power supply must be protected to prevent freezing or overheating consistent with the season and route to be traveled by the particular vessel.

(b)(1) The shipowner, operating company, or station licensee, if directed by the Commission or its authorized representative must demonstrate that the

reserve installation satisfies the 6-hour operating requirement of law.

(2) When the reserve power supply includes a battery, proof of the ability of such battery to operate continuously and effectively for 6 hours can be established by a discharge test over a prescribed period of time, when supplying power at the voltage required for normal operation to an electrical load as prescribed by paragraph (b)(4) of this section.

(3) When the reserve power supply includes an engine-driven generator, proof of the adequacy of the engine fuel supply to operate the unit continuously and effectively for 6 hours may be established by measuring the fuel consumption during 1 hour when supplying power, at the voltage required for normal operation, to an electrical load as prescribed by paragraph (b)(4) of this section.

(4) To determine the electrical load to be supplied by the reserve power supply, the following formula must be used:

(i) One-half of the reserve transmitter current with the key closed; plus

(ii) One-half of the reserve transmitter current with the key open; plus

(iii) One sixth of the current of the automatic radiotelegraph alarm signal keying device when this device is energized; plus

(iv) Current of the reserve receiver; plus

(v) Current of emergency lights; plus

(vi) Current of the bridge-to-bridge transceiver when connected.

(5) At the conclusion of the tests specified in paragraphs (b) (2) and (3) of this section, no part of the reserve power supply must have an excessive temperature rise, nor must the specific gravity or voltage of the battery be below the 90 percent discharge point.

[51 FR 31213, Sept. 2, 1986, as amended at 58 FR 44953, Aug. 25, 1993]

### §80.809 Routing of power supply wiring.

The conductors connecting the main power supply to the main installation, the reserve supply to reserve installation and the radar power supply to the ship radar station, must be routed to ensure adequate protection from overload, mechanical injury and be kept clear of electrical grounds.

### §80.810 Use of reserve installation.

The reserve transmitter, and the reserve power supply for the reserve transmitter, are primarily for safety and test communication. This equipment may be used for other communication for a period not to exceed 1 hour per day in the aggregate. The reserve receiver, and the reserve power supply for the reserve receiver if a battery, may be used at any time to maintain a safety watch if such use will not reduce the capabilities of the reserve power supply to energize the associated component or components of the reserve installation for at least 6 consecutive hours.

### §80.811 Tests of reserve installation and automatic-alarm-signal keying device.

(a) The condition of the reserve installation and of the automatic alarm signal keying device must be determined (with the exception noted in paragraph (b) of this section) prior to the vessel's departure from each port and on each day the vessel is outside of a harbor or port. If the vessel is in two or more ports within one day, the required tests need be made only once. If the vessel is in port for less than one day, the required test for that day may be made before arrival or after departure. The following tests must be made and the results entered in the radiotelegraph station log:

(1) Check the reserve power supply as follows:

(i) Test battery charging circuits for correct polarity and charging rate:

(ii) In the case of lead-acid batteries, determine the specific gravity of the electrolyte.

(iii) In the case of other types of batteries, take voltage readings under normal battery load.

(iv) When an engine-driven generator is used, check the quantity of fuel in the fuel tank;

(2) Test the emergency lighting circuits and emergency electric lights by actual operation;

(3) Test the reserve receiver, while energized by the reserve power supply, by actual operation and comparison of

received signals with similar signals received by the main receiver;

(4) On days when not used for communication, the reserve transmitter energized by the reserve power supply must be tested by actual operation when connected to the main antenna, an artificial antenna or a reserve antenna.

(5) If installed, the reserve antenna must be used at least once each voyage, noting antenna currents;

(6) Test the automatic-alarm-signal keying device for correct timing adjustment of the keying mechanism. *Do not transmit when making this test.*

(b) In the case of vessels loading or discharging flammable, unstable or dangerous cargo, or while berthed at oil terminals or in other comparable areas, predeparture transmitter tests need not be made. In such cases, the provisions of paragraph (a)(4) of this section, in connection with predeparture tests, do not apply if a suitable explanation is entered in the radio station log.

### § 80.812 Automatic-alarm-signal keying device.

The required radiotelegraph station includes one or more devices, of a type accepted by the Commission in accordance with subpart F of this part capable of automatically operating the normal keying circuits of a required radiotelegraph transmitter to transmit the international radiotelegraph alarm signal.

### § 80.813 Installation of automatic-alarm-signal keying device.

(a) The automatic radiotelegraph alarm signal keyer must be installed in the radiotelegraph operating room. It must be possible to key, nonsimultaneously, the main transmitter and the reserve transmitter, and to permit the device to be taken out of operation at any time in order to permit immediate manual transmitter operation. Only one control must be provided for each automatic alarm signal keying device. This control must be located in the radiotelegraph operating room.

(b) The required automatic radiotelegraph alarm signal keying device must be capable of operating efficiently for a continuous period of 1 hour when energized solely by the reserve power supply.

### § 80.814 Radiotelegraph auto alarm.

An auto alarm which is installed and used on board a cargo ship of the United States pursuant to the provisions of § 80.315 comprises a complete receiving, selecting and warning device of a type accepted by the Commission in accordance with section 3(x) of the Communications Act, capable of being actuated automatically by intercepted radio frequency waves forming the international radiotelegraph alarm signal.

### § 80.815 Installation of radiotelegraph auto alarm.

Installation of a radiotelegraph auto alarm must comply with the following conditions.

(a) The auto alarm must be located in the radiotelegraph operating room and be installed and protected to insure proper operation. The radiotelegraph auto alarm system must be operated from the radiotelegraph operating room. A switch must be provided to:

(1) Transfer the main antenna from all other equipment and connect it to the radiotelegraph auto alarm receiver and place the auto alarm in service and, back to the original configuration A voltmeter must be provided for the determining that the supply voltages are within the operating limits.

(b) The auto alarm must give an audible warning in the radiotelegraph operating room, in the radio officer's cabin, and on the navigating bridge. The alarm must operate continuously after the alarm has been actuated by a radiotelegraph alarm signal or by failure of the system, until manually turned off. Only one switch for stopping the alarm is authorized, and this must be located in the radiotelegraph operating room and be capable of manual operation only. However ships operating under the general exemption of § 80.836(c) may install an additional switch on the bridge for stopping the warning apparatus.

(c) Failure of the auto alarm if of a type approved prior to July 23, 1951, to

function normally due to prolonged interference must operate a visual indicator on the bridge. The type and method of installation of such visual indicator must comply with the requirements of the U.S. Coast Guard.

(d) The power supply voltage of an auto alarm must be maintained within definite upper and lower limits. The power supply must have an auxiliary device which:

(1) Will energize the alarm if this power supply fails or its voltage exceeds the limits specified for the particular type of auto alarm involved; or

(2) Will automatically connect the auto alarm to an auxiliary power supply, the voltage of which is within the specified limits.

**§80.817 Tests of radiotelegraph auto alarm.**

(a) The radio officer must at least once every 24 hours while the ship is in the open sea:

(1) Test the auto alarm by using the testing device to determine whether the auto alarm will respond to not less than 4 nor more than 12 consecutive dashes having an approximate duration of 4 seconds and an approximate spacing of 1 second.

(2) Determine the proper functioning of the auto alarm receiver while connected to its normal antenna, by actual operation and comparison of received signals with similar signals received on 500 kHz by the main receiver.

(b) If the auto alarm is not in proper operating condition, the radio officer must report that fact to the master or officer on watch on the bridge.

(c) A statement that the tests specified in this section have been made, and the results of such tests, must be inserted in the radiotelegraph station log.

**§80.818 Direction finding and homing equipment.**

Each compulsory ship of 1,600 gross tons or over whose keel was laid:

(a) *Prior to May 25, 1980,* must be equipped with radio direction finding apparatus in operating condition and approved by the Commission during an inspection.

(b) *On or after May 25, 1980,* must be equipped with radio direction finding apparatus having a homing capability in operating condition and approved by the Commission during an inspection.

**§80.819 Requirements for radio direction finder.**

(a) To be approved by the Commission during an inspection the radio direction finding apparatus must:

(1) Be capable of receiving signals A1A, A2B and R2B emission, on each frequency within the band 285–515 kHz assigned by the Radio Regulations for distress and direction finding and for maritime radio beacons, and be calibrated to take bearings on such signals from which the true bearing and direction may be determined; and

(2) Possess a sensitivity, sufficient to permit the taking of bearings on a signal having a field strength of 50 microvolts per meter.

(b) The calibration of the direction finder must be verified by check bearings or by a further calibration whenever any changes are made in the physical or electrical characteristics or the position of any antennas, and whenever any changes are made in the position of any deck structures which might affect the accuracy of the direction finder. In addition, the calibration must be verified by check bearings at yearly intervals. A record of the calibrations, and of the check bearings made of their accuracy and the accuracy of the check bearings must be kept on board the ship for a period of not less than 1 year.

**§80.820 Auxiliary receiving antenna.**

An auxiliary receiving antenna must be provided when necessary to avoid unauthorized interruption or reduced efficiency of the required watch because the normal receiving antenna is not available because a radio direction finder on board the vessel is operated.

**§80.821 Installation of direction finder.**

(a) The direction finder must be located to minimize interference from noise.

(b) The direction finder antenna system must be erected so that the determination of bearings will not be hindered by the proximity of other antennas, cranes, wire halyards, or large metal objects.

**§ 80.822 Contingent acceptance of direction finder calibration.**

(a) When the required calibration can not be made before departure from a harbor or port for a voyage in the open sea, the direction finder may be tentatively approved on condition that the master certifies in writing that the direction finder will be calibrated by a competent technician; and

(b) In the absence of acceptable calibration at the time of the subsequent inspection the Commission may withdraw approval of the direction finder until such evidence is available.

**§ 80.823 Check bearings by authorized ship personnel.**

The requirement for calibration by check bearings is met if:

(a) The required verification by check bearings are made not more than 90 days prior to the date of the annual detailed inspection of the radiotelegraph station;

(b) The verification consists of a comparison of simultaneous visual and radio direction finder bearings. At least one comparison bearing must be taken in each quadrant, within plus or minus 20 degrees from the following bearings relative to the ship's heading: 45 degrees; 135 degrees; 225 degrees; 315 degrees;

(c) The verification shows the visual bearing relative to the ship's heading and the difference between the visual and radio direction finder bearing, and the date each check bearing is taken.

**§ 80.824 Homing facility requirements.**

(a) Direction finding equipment used on compulsory vessels whose keel was laid on or after May 25, 1980, must additionally have a homing facility which is:

(1) Capable of operating with A1A, A2B, H2B and H8E emission on any frequency in the band 2167–2197 kHz;

(2) Capable of taking direction finding bearings on the radiotelephone distress frequency 2182 kHz without ambiguity of sense within an arc of 30 degrees on either side of the bow;

(3) Installed with due regard to CCIR Recommendation 428–2:

(4) Sufficiently sensitive, in the absence of interference, to take bearings on a signal having a field strength of 25 microvolts per meter;

(5) Capable of determining its accuracy by comparison of visual or calculated bearings and homing facility bearings. Comparisons must be made at −30, 0 and +30 degrees relative to the ships heading to show that the correct sense is indicated.

(b) [Reserved]

**§ 80.825 Radar installation requirements and specifications.**

(a) Radar installations on board ships that are required by the Safety Convention or the U.S. Coast Guard to be equipped with radar must comply with either the document referenced in paragraph (a)(1) of this section or the applicable document referenced in paragraphs (a)(2) through (a)(4) of this section. These documents are incorporated by reference in accordance with 5 U.S.C. 552(a). The documents contain specifications, standards and general requirements applicable to shipboard radar equipment and shipboard radar installations. For purposes of this part, the specifications, standards and general requirements stated in these documents are mandatory irrespective of discretionary language. Radar documents are available for inspection at the Commission Headquarters in Washington, DC, or may be obtained from the Radio Technical Commission for Maritime Services (RTCM), P.O. Box 19087, Washington, DC 20036.

(1) Radar installed on ships of 500 gross tons and upwards on or after July 1, 1988, must comply with the provisions of RTCM Paper 133–87/SC 103–33 including Appendix A. Title: ''RTCM Recommended Performance Specification for a General Purpose Navigational Radar Set for Oceangoing Ships of 500 Gross Tons and Upwards for New Radar Installations.'' Title of Appendix A: ''General Purpose Shipborne Navigational Radar Set for Oceangoing Ships *Design and Testing Specifications.*'' Document originally approved by RTCM August 15, 1985 and revised May 15, 1987.

(2) Radar installed on ships of 1,600 gross tons and upwards on or before April 27, 1981, must comply with the provisions of Volume II of RTCM Special Committee No. 65 Final Report;

Part II. Title: ''Performance Specification for a General Purpose Navigational Radar Set for Oceangoing Ships of 1,600 Tons Gross Tonnage and Upwards for Ships Already Fitted.'' Document approved by RTCM July 18, 1978; effective as FCC requirement on April 27, 1981.

(3) Radar installed on ships of 1,600 gross tons and upwards after April 27, 1981 and before July 1, 1988, must comply with the provisions of Volume II of RTCM Special Committee No. 65 Final Report with Change 1 entered; Part I including Appendix A. Title: ''Performance Specification for a General Purpose Navigational Radar Set for Oceangoing Vessels of 1,600 Tons Gross Tonnage and Upwards for New Radar Installations.'' Title of Appendix A: ''General Purpose Shipborne Navigational Radar Set for Oceangoing Ships *Design and Testing Specifications.*'' Document approved by RTCM July 18, 1978; effective as FCC requirement on April 27, 1981.

(4) Ships between 500 and 1,600 gross tons constructed on or after September 1, 1984, with radar installed before July 1, 1988, must comply with Regulation 12, Chapter V of the Safety Convention and with the provisions of Inter-Governmental Maritime Consultative Organization (IMCO) [Now International Maritime Organization (IMO)] Resolution A.477(XII). Title: ''Performance Standards for Radar Equipment.'' Adopted by IMCO November 19, 1981.

(b) For ships of 10,000 gross tons or more and any other ship that is required to be equipped with two radar systems, each of these systems must be capable of operating independently and must comply with the specifications, standards and general requirements established by paragraph (a) of this section. One of the systems must provide a display with an effective diameter of not less than 340 millimeters (13.4 inches) (16-inch cathode ray tube). The other system must provide a display with an effective diameter of not less than 250 millimeters (9.8 inches) (12-inch cathode ray tube).

(c) Recommendations for tools, test equipment, spares and technical manuals are contained in Part IV of Volume III of the RTCM SC–65 Final Report approved by RTCM July 18, 1978.

[52 FR 35247, Sept. 18, 1987]

### §80.826 Interior communication systems.

(a) An interior communication system must be provided between the bridge of the ship and the radiotelegraph operating room in all cases where the radiotelegraph operating room does not adjoin or open onto the navigating bridge structure. An interior communication system must also be provided between the bridge and the location of the radio direction finding apparatus whenever the latter is not located on the bridge or within any compartment adjoining or opening onto the navigating bridge structure. If the operating position of the reserve radio installation is not located in the room normally used for operating the main radio installation, an interior communication system must be separately provided between the bridge and each of these radio operating positions.

(b) If a vessel has more than one location from which it is normally controlled and steered, the interior communication system between the radiotelegraph operating room and bridge must include communication to each such location. The existence at a location of all of the following factors will require that a point of communication be established there: (1) A steering wheel; (2) a compass; (3) an engine order telegraph; (4) control of the whistle; and (5) a wheelhouse enclosure.

(c) Paragraph (b) of this section does not apply to locations established solely for emergency use in event of failure of the normal steering facilities or locations used solely while docking or maneuvering a ship while in port or for brief periods while navigating the ship in close quarters on inland waters.

### §80.827 Requirements for interior communication systems.

The interior communication systems required by §80.826 must provide two-way calling and voice communication, be independent of any other communication system in the ship, and be of a type approved by the United States

Coast Guard. The location and termination of individual systems is subject to approval by the Commission.

### § 80.828 Radiotelegraph station clock.

A working clock equipped with a sweep seconds hand and having a dial not less than 12.7 cm (5 inches) in diameter, the face of which is marked to indicate the silence periods prescribed for the radiotelegraph service by the International Radio Regulations, must be provided. It must be securely mounted in the radiotelegraph operating room in such a position that the entire dial can be clearly observed by the radio officer from the normal radiotelegraph operating position, from the operating position where the international radiotelegraph alarm signal would ordinarily be transmitted by hand, and from the position used for testing the auto alarm (if installed). If a separate emergency radiotelegraph operating room is provided, the requirements of this section apply to it also.

[51 FR 31213, Sept. 2, 1986, as amended at 58 FR 44953, Aug. 25, 1993]

### § 80.829 Survival craft nonportable radiotelegraph installation.

(a) A survival craft nonportable radiotelegraph installation required by law to be provided in a motor lifeboat must include the following components as a minimum:

(1) A transmitting and receiving antenna and antenna accessories,

(2) An artificial antenna for testing purposes;

(3) A transmitter with keying arrangements for use of radiotelegraphy, an associated radio receiver with headphones, and a suitable device for converting from the power supply battery voltage to the voltages used by the transmitter and receiver;

(4) A power supply;

(5) A device for a ground connection to the water when the lifeboat is afloat.

(b) Components of a survival craft nonportable radiotelegraph installation specified in paragraph (a)(2) of this section must be type accepted of §§ 80.263 and 80.265.

(c) The radiotelegraph equipment must be installed in a cabin large enough to accommodate both the equipment and the person using it. The operation of the radiotelegraph installation must not be interfered with by the survival craft engine while it is running, whether or not a battery is on charge.

(d) The antenna must be a single wire inverted L type with a horizontal section of the maximum practicable length and a height above the mean waterline of not less than 6 meters (20 feet), and must be so designed that it can be quickly erected and utilized by a person in the lifeboat while afloat.

(e) The ground system must comply with the following requirements:

(1) The radio installation when installed in a metal hull lifeboat must be grounded to the hull of the lifeboat. The ground connection must be physically located in a position where it is inaccessible to the normal movement of occupants or accessories in the lifeboat;

(2) The radio installation when installed in a lifeboat having a nonmetallic hull must be grounded to a bare plate or strips of corrosion resistant metal having a total area of at least 6 square feet and located on the hull of the lifeboat below the waterline.

(f) When the lifeboat is afloat the installation must be capable of developing an antenna current such that the product of the maximum height of the antenna above the mean surface of the water, expressed in meters, and the r.m.s. antenna current on the frequency 500 kHz, expressed in amperes, is not less than 9.6.

[51 FR 31213, Sept. 2, 1986, as amended at 58 FR 44953, Aug. 25, 1993]

### § 80.830 Power supply for survival craft nonportable radiotelegraph installation.

(a) The power supply for the survival craft nonportable radiotelegraph installation must consist of a battery capable of operating the survival craft radiotelegraph installation for at least 6 hours continuously under normal working conditions.

(b) The battery may power equipment other than the radiotelegraph installation (except that it must not be used to supply power to any engine

starting motor or ignition system) provided such additional use will not adversely affect the required capabilities of the battery. All circuits connected to the battery must be independently fused.

(c) The battery must be kept charged at all times while at sea. The charging of the battery must not require its removal from the survival craft in which it is installed. The necessary charging equipment must not interfere with the launching of the survival craft, and must be easily and quickly removable. The charging circuit for the battery must be routed through the radiotelegraph operating room, and include a device located in the radiotelegraph operating room which will give continuous indication of the polarity and the rate of charge.

(d) Installation must provide for charging of the battery by means of a generator on the survival craft engine.

(e) Subject to approval of the United States Coast Guard, the battery must be mounted in a suitable container that will provide protection from salt water spray and also allow proper ventilation.

### §80.831 Survival craft portable radiotelegraph equipment.

(a) Survival craft portable radiotelegraph equipment required by law to be provided must be type accepted by the Commission as capable of meeting the provisions of §§80.263 and 80.265.

(b) The equipment must be stowed in the radio room, bridge or a protected location near a lifeboat and be readily accessible for transfer to a lifeboat. However, in tankers of 3,000 gross tons and over in which lifeboats are fitted amidships and aft, this equipment must be kept in a suitable place in the vicinity of those lifeboats which are farthest away from the ship's main transmitter.

(c) Equipment for totally enclosed lifeboats must meet the extra requirements specified in §80.265.

### §80.832 Tests of survival craft radio equipment.

(a) Except for emergency position indicating radio beacons and two-way radiotelephone equipment, inspections and tests of survival craft radio equipment must be conducted by the licensee at weekly intervals while the ship is at sea or, if a test or inspection has not been conducted within a week prior to its departure, within 24 hours prior to the ship's departure from a port. The inspection and tests must include operation of the transmitter connected to an artificial antenna and determination of the specific gravity or voltage under normal load of any batteries.

(b) When the ship is in a harbor or port of the United States an authorized representative of the Commission may require:

(1) Inspection and test of the survival craft radio equipment in the survival craft afloat, including an operational test of the transmitter and receiver connected to the required antenna to determine that the equipment is in operating condition;

(2) Demonstration in accordance with §80.808 that a battery used as a part of the survival craft nonportable radio installation is capable of energizing the installation for the required 6 hours.

(c) The results of the inspections and test must be made known to the master, and be entered in the ship's radio station log, or in the ship's log if the ship is not provided with a radio station.

### §80.833 Class S survival craft emergency position indicating radiobeacons (EPIRB's).

(a) Survival craft emergency position indicating radiobeacons, Class S, required to comply with title 46 of the Code of Federal Regulations must be type accepted to meet the provisions of §80.1059.

(b) The Class S EPIRB must be stowed in the survival craft.

(c) The Class S EPIRB must be tested at intervals not to exceed twelve months.

(d) Batteries must be replaced after the date specified in §80.1053(e), or after the transmitter has been used in an emergency situation, whichever is earlier.

**§ 80.834 Survival craft portable two-way radiotelephone.**

(a) Survival craft portable two-way radiotelephone transceivers must meet the provisions of § 80.271.

(b) The equipment must be stowed in the radio room, on the bridge or in a location readily accessible for transfer to life boats when not being used by shipboard personnel to satisfy the vessel's operational requirements.

(c) When not in routine use the survival craft two-way radiotelephone transceivers must be operationally tested once a week. Operational test should be conducted with equipment separated as far as practical and in the case of UHF equipment must include tests on the frequency 457.525 MHz.

(d) All survival craft two-way radiotelephones associated with a ship must operate in the same frequency band (VHF or UHF).

**§ 80.835 Ship and survival craft station spare parts, tools, instruction books, circuit diagrams and testing equipment.**

(a) Each ship station must be provided with such spare parts, tools, testing equipment, instruction books and circuit diagrams as will enable the radiotelegraph installation and survival craft station to be maintained in working condition while at sea. Each ship station licensee must compile a list of spare parts, tools, test equipment and circuit diagrams it considers necessary for compliance with this requirement. This list must be available at inspection. The Commission may consider equipment manufacturer lists of recommended spare parts, tools, test equipment and repair circuit diagrams in determining compliance with this sub-section. Spare parts for the survival craft station must be kept with that station. Other items must be located convenient to the radio room.

(b) The testing equipment must include an instrument or instruments for measuring A.C. volts, D.C. volts and ohms.

**§ 80.836 General exemptions.**

(a) General small passenger vessel exemptions, applicable to certain U.S. passenger vessels of less than 100 gross tons, are contained in subpart S of this part.

(b) All newly constructed U.S. cargo vessels of 1600 gross tons and upward are exempt from the radiotelegraph and radio direction finding provisions of Part II of Title III of the Communications Act when navigated on sea trials, not more than 150 nautical miles from the nearest land, if the following conditions are met:

(1) The vessel is equipped with a radiotelephone capable of operation on 2182 kHz and equipped with a radiotelephone alarm signal generator. The vessel may carry an additional portable radiotelephone, located in the wheelhouse, equipped with a radiotelephone alarm signal generator to satisfy the radiotelephone alarm signal generator requirement;

(2) The radio direction-finding apparatus is calibrated during the sea trials;

(3) A continous watch is maintained in 2182 kHz whenever the radiotelephone is not being used for authorized traffic during the sea trials; and

(4) The local FCC Engineer in Charge is advised of the dates and routes of the sea trials.

(c) Prior to February 1, 1999, cargo ships of 1600 gross tons and upward are exempt from the radiotelegraph requirements of Part II of Title III of the Communications Act, if the following criteria are met:

(1) The ship operates on domestic voyages only. For purposes of this paragraph, the term domestic voyages includes ports in Alaska, U.S. possessions in the Caribbean, and along the coasts of the 48 contiguous states, so long as the vessel does not make port at a foreign destination;

(2) The routes of the voyage are never more than 150 nautical miles from the nearest land; and,

(3) The ship complies fully with all of the following conditions. The ship must:

(i) Be equipped with a satellite ship earth station providing both voice and telex, which has been type accepted for GMDSS use;

(ii) Be equipped with a VHF and MF radiotelephone installation which complies fully with subpart R of this part

and has the additional capability of operating on the HF frequencies listed in §80.369(b) for distress and safety communications (this capability may be added to the MF radiotelephone installation);

(iii) Be equipped with a narrow-band direct-printing radiotelegraph system with SITOR meeting the requirements of §80.219;

(iv) Be equipped with at least two VHF transceivers capable of being powered by the reserve power supply (one of the VHF transceivers may be the VHF required by paragraph (c)(3)(ii) of this section);

(v) Be equipped with a Category 1, 406 MHz EPIRB meeting the requirements of §80.1061;

(vi) Be equipped with a NAVTEX receiver meeting the requirements of §80.1101(c)(1);

(vii) Be equipped with three two-way VHF radiotelephone apparatus and two radar transponders in accordance with §80.1095;

(viii) In addition to the main power source, be equipped with an emergency power source which complies with all applicable rules and regulations of the U.S. Coast Guard (the satellite earth station, the narrow-band direct-printing equipment and the 500 kHz autoalarm receiver must be capable of being powered by the main and emergency power sources);

(ix) Be equipped with a 500 kHz autoalarm receiver and a means of recording or decoding any distress signal received for relay to the Coast Guard or a public coast station;

(x) Participate in the AMVER system when on voyages of more than twenty-four hours and have the capability of operating on at least four of the AMVER HF duplex channels;

(xi) Carry at least one licensed operator to operate and maintain all the ship's distress and safety radio communications equipment in accordance with §§80.159(c) and 80.169; and,

(xii) Maintain a continuous watch on 2182 kHz and 156.8 MHz, in accordance with §80.305(b), when navigated.

(d) Subject to a determination by the United States Coast Guard pursuant to Public Law No. 104–104, 110 Stat. 56 (1996) at Section 206, each U.S. passenger vessel and each U.S. cargo vessel of 1,600 gross tons and upward is exempt from the radiotelegraph provisions of part II of title III of the Communications Act, provided that the vessel complies fully with the requirements for the Global Maritime Distress & Safety System (GMDSS) contained in subpart W of this part and obtains either a Safety Certificate or endorsement as described in §80.1067.

NOTE TO PARAGRAPH (d): In a letter to the Commission, dated March 13, 1996, the United States Coast Guard noted that it may rely on the Safety Certificate or endorsement described in §80.1067 as prima facie evidence that the GMDSS has been installed and found to be operating properly. The Coast Guard also stated that it retains the authority for ensuring overall vessel safety and compliance with all applicable domestic and international laws, regulations and treaties.

(e) These exemptions may be terminated at any time without hearing if, in the Commission's discretion, the need for such action arises.

[51 FR 31213, Sept. 2, 1986, as amended at 56 FR 19301, Apr. 26, 1991; 60 FR 58244, Nov. 27, 1995; 61 FR 19559, May 2, 1996]

## Subpart R—Compulsory Radiotelephone Installations for Vessels 300 Gross Tons

### §80.851 Applicability.

The radiotelephone requirements of Part II of Title III of the Communications Act apply to cargo ships of 300 gross tons and upward but less than 1600 gross tons. The radiotelephone requirements of the Safety Convention apply to passenger ships irrespective of size and cargo ships of 300 gross tons and upward on international voyages. These ships are required to carry a radiotelephone installation complying with this subpart.

### §80.853 Radiotelephone station.

(a) The radiotelephone station is a radiotelephone installation and other equipment necessary for the proper operation of the installation.

(b) The radiotelephone station must be installed to insure safe and effective operation of the equipment and to facilitate repair. Adequate protection must be provided against the effects of vibration, moisture, and temperature.

(c) The radiotelephone station and all necessary controls must be located at the level of the main wheelhouse or at least one deck above the ship's main deck.

(d) The principal operating position of the radiotelephone station must be in the room from which the ship is normally steered while at sea. In installations on cargo ships of 300 gross tons and upwards but less than 500 gross tons on which the keel was laid prior to January 1, 1965, the location of the principal operating controls may be in a room adjoining and opening into the room from which the vessel is normally steered while at sea. If the station can be operated from any location other than the principal operating position, a positive means must be provided at the principal operating position to take full control of the station.

(e) The use of a independent communication system between the principal operating position and all other operating locations is acceptable as a method for taking control at the principal operating position. For stations first placed in service on or after June 1, 1956 the use of this method for taking control at the principal operating position is acceptable only for operating locations in the chartroom or master's quarters.

### § 80.854 Radiotelephone installation.

The radiotelephone installation includes:

(a) A radiotelephone transmitter;

(b) A receiver as specified in § 80.858(a);

(c) A radiotelephone distress frequency watch receiver specified in § 80.269;

(d) A main source of energy;

(e) A reserve source of energy, when required by § 80.860(a);

(f) An antenna system.

### § 80.855 Radiotelephone transmitter.

(a) The transmitter must be capable of transmission of H3E and J3E emission on 2182 kHz, and J3E emission on 2638 kHz and at least two other frequencies within the band 1605 to 3500 kHz available for ship-to-shore or ship-to-ship communication.

(b) The duty cycle of the transmitter must permit transmission of the international radiotelephone alarm signal.

(c) The transmitter must be capable of transmitting clearly perceptible signals from ship to ship during daytime under normal conditions over a range of 150 nautical miles.

(d) The transmitter complies with the range requirement specified in paragraph (c) of this section if:

(1) The transmitter is capable of being matched to actual ship station transmitting antenna meeting the requirements of § 80.863; and

(2) The output power is not less than 60 watts peak envelope power for H3E and J3E emission on the frequency 2182 kHz and for J3E emission on the frequency 2638 kHz into either an artificial antenna consisting of a series network of 10 ohms resistance and 200 picofarads capacitance, or an artificial antenna of 50 ohms nominal impedance. An individual demonstration of the power output capability of the transmitter, with the radiotelephone installation normally installed on board ship, may be required.

(e) The transmitter must provide visual indication whenever the transmitter is supplying power to the antenna.

(f) The transmitter must be protected from excessive currents and voltages.

(g) A durable nameplate must be mounted on the transmitter or made an integral part of it showing clearly the name of the transmitter manufacturer and the type or model of the transmitter.

(h) An artificial antenna must be provided to permit weekly checks of the automatic device for generating the radiotelephone alarm signal on frequencies other than the radiotelephone distress frequency.

### § 80.856 Automatic radiotelephone alarm signal generator.

The transmitter must be equipped with an international radiotelephone alarm signal generator type accepted by the Commission. See § 80.221.

**§80.857 Installation of automatic radiotelephone alarm signal generator.**

The controls of the automatic radiotelephone alarm signal generator required by §80.856 must be located at the principal radiotelephone operating position only. The controls must permit instant use of this device to modulate the required transmitter and permit the device to be taken out of operation at any time so that the transmitter may be immediately voice modulated for transmission of a distress call and message.

**§80.858 Radiotelephone receiver.**

(a) The receiver required by §80.854(a) of this part must be capable of reception of H3E and J3E emissions on the radiotelephone distress frequency. The receiver must be capable of reception of J3E emissions on 2638 kHz and the receiving frequencies associated with the transmitting frequencies authorized pursuant to §80.855(a).

(b) In addition to the receiver required by paragraph (a) of this section, a radiotelephone distress frequency watch receiver meeting the technical standards of §80.269 must be provided.

(c) One or more loudspeakers capable of being used to maintain the distress frequency (2182 kHz) watch at the principal operating position and at any other place where the listening watch is performed must be provided.

(d) The receiver required by paragraph (a) of the section must:

(1) Have a sensitivity of 50 microvolts;

(2) Be capable of operation when energized by the main source of energy, and by the reserve source of energy if a reserve source is required by §80.860(a);

(3) Be protected from excessive currents and voltages;

(4) Be provided with a nameplate showing the name of the receiver manufacturer and the type or model.

(e) The sensitivity of a receiver is the strength in microvolts of a signal, modulated 30 percent at 400 cycles per second, required at the receiver input to produce an audio output of 50 milliwatts to the loudspeaker with a signal-to-noise ratio of at least 6 decibels. Evidence of a manufacturer's rating or a demonstration of the sensitivity of a required receiver computed on this basis must be furnished upon request of a Commission representative.

**§80.859 Main power supply.**

(a) The main power supply must simultaneously energize the radiotelephone transmitter at its required antenna power and the required receivers. Under this load condition the voltage of the main power supply at the radiotelephone input terminals must not deviate from its rated potential by more than 10 percent on ships completed on or after July 1, 1941, nor by more than 15 percent on ships completed before that date.

(b) Means must be provided for charging any batteries used as a main power supply. A continuous indication of the rate and polarity of the charging current must be provided during charging of the batteries.

**§80.860 Reserve power supply.**

(a) When the main power supply is not on the same deck as the main wheelhouse or at least one deck above the vessel's main deck, a reserve power supply must be provided and must be so situated. The location of the reserve power supply must be located as near to the required transmitter and receivers as practicable and meet all applicable rules and regulations of the United States Coast Guard.

(b) The reserve power supply must be independent of the propelling power of the ship and of any other electrical system, and must simultaneously energize the radiotelephone transmitter at its required antenna power, the required receivers, the emergency light and the automatic radiotelephone alarm signal generator. The reserve power supply must be available at all times.

(c) The reserve power supply may be used to energize the bridge-to-bridge radiotelephone and the VHF radiotelephone installation required by §80.871.

(d) All circuits connected to the reserve power supply must be protected from overloads.

(e) Means must be provided for charging any batteries used as a reserve power supply. A continuous indication of the rate and polarity of the charging

current during charging of the batteries must be provided.

(f) The cooling system of each internal combustion engine used as a part of the reserve power supply must be adequately treated to prevent freezing or overheating consistent with the season and route to be traveled by the particular vessel involved.

(g) The reserve power supply must be available within 1 minute.

[51 FR 31213, Sept. 2, 1986; 52 FR 35246, Sept. 18, 1987]

### § 80.861 Required capacity.

If the main power supply or the reserve power supply provided for the purpose of complying with §§ 80.859 and 80.860 consists of batteries, the batteries must have sufficient reserve capacity available at all times while the vessel is leaving or attempting to leave a harbor or port for a voyage in the open sea, and while being navigated in the open sea outside of a harbor or port, to permit operation of the radiotelephone transmitter and the required receivers for at least 6 hours continuously under normal working conditions.

### § 80.862 Proof of capacity.

(a) When directed by the Commission or its authorized representative, the station licensee must prove that the requirements of § 80.861 are met.

(b) Proof of the ability of a battery used as a main or reserve source to operate continuously for 6 hours can be established by a discharge test over a prescribed period of time, when supplying power at the voltage required for normal and operation to an electrical load as prescribed by paragraph (d) of this section.

(c) When the reserve power supply is an engine-driven generator, proof of the adequacy of the engine fuel supply to operate the unit contiuously for 6 hours can be established by measuring the fuel consumption for 1 hour when supplying power, at the voltage required for normal operation, to an electrical load as prescribed by paragraph (d) of this section.

(d) In determining the electrical load to be supplied, the following formula must be used:

(1) One-half of the current of the required transmitter at its rated power output.

(2) One fourth of the current of the automatic radiotelephone alarm signal generator; plus

(3) Current of receiver; plus

(4) Current of emergency light(s); plus

(5) Current of the bridge-to-bridge transceiver when connected.

(e) At the conclusion of the test specified in paragraphs (b) and (c) of this section, no part of the main or reserve power supply must have an excessive temperature rise, nor must the specific gravity or voltage of any battery be below 90 percent discharge point of the fully charged value.

### § 80.863 Antenna system.

(a) An antenna system must be installed which is as nondirectional and as efficient as is practicable for the transmission and reception of radio ground waves over seawater. The installation and construction of the required antenna must insure operation in time of emergency.

(b) If the required antenna is suspended between masts or other supports liable to whipping, a safety link which, under heavy stress, will operate to greatly reduce such stress without breakage of the antenna, the halyards, or other antenna-supporting elements, must be installed.

(c) When an electrical ground connection is used as an element of the antenna system, the connection must be efficient.

### § 80.864 Emergency electric lights.

(a) Emergency electric light(s) must be installed to illuminate the operating controls of the radiotelephone installation at the principal operating position, the card of instructions, and the radiotelephone station clock if the latter is not self-illuminated.

(b) The emergency electric light(s) must be energized from the reserve power supply, if a reserve power supply is required. In cases where a reserve power supply is not required, the emergency lights must be energized independently of the system which supplies the normal lighting.

### §80.865 Radiotelephone station clock.

A clock having a face of at least 12.7 cm (5 in.) in diameter must be mounted in a position that can be observed from the principal operating position.

[58 FR 44953, Aug. 25, 1993]

### §80.866 Spare antenna.

A spare transmitting antenna completely assembled for immediate erection must be provided. If the installed transmitting antenna is suspended between supports, this spare antenna must be a single-wire transmitting antenna of the same length and must also include suitable insulators.

### §80.867 Ship station tools, instruction books, circuit diagrams and testing equipment.

(a) Each ship station must be provided with such tools, testing equipment, instruction books and circuit diagrams to enable the radiotelephone installation to be maintained in efficient working condition while at sea. Each ship station licensee must compile a list of spare parts, tools, test equipment and circuit diagrams it considers necessary for compliance with this requirement. This list must be available at inspection. The Commission may consider equipment manufacturer lists of recommended spare parts, tools, test equipment, and repair circuit diagrams in determining compliance with this subsection. These items must be located convenient to the radio room.

(b) The testing equipment must include an instrument or instruments for measuring A.C. volts, D.C. volts and ohms.

### §80.868 Card of instructions.

A card of instructions giving a clear summary of the radiotelephone distress procedure must be securely mounted and displayed in full view of the principal operating position.

### §80.869 Test of radiotelephone station.

Unless the normal use of the required radiotelephone station demonstrates that the equipment is operating, a test communication on a required or working frequency must be made each day the ship is navigated. When this test is performed by a person other than the master and the equipment is found to be defective the master must be promptly notified.

### §80.870 Survival craft radio equipment.

(a) A Class S survival craft emergency position indicating radiobeacon, (EPIRB) required to be carried to comply with title 46 of the Code of Federal Regulations must meet the provisions of §80.833.

(b) A survival craft two-way radiotelephone apparatus must meet the provisions of §80.834.

### §80.871 VHF radiotelephone station.

(a) All passenger ships irrespective of size and all cargo ships of 300 gross tons and upwards subject to part II of title III of the Communications Act or to the Safety Convention are required to carry a VHF radiotelephone station complying with this subpart. Ships subject only to the Communications Act may use a VHF radiotelephone installation meeting the technical standards of the Bridge-to-Bridge Act to satisfy the watch requirements of §80.305(a)(3) if the equipment can transmit and receive on 156.800 MHz.

(b) The VHF radiotelephone station must be installed to insure safe and effective operation of the equipment and facilitate repair. It must be protected against vibration, moisture and temperature.

(c) The principal operating position of the radiotelephone station must be in the room from which the ship is normally steered while at sea.

(d) The radiotelephone stations on ships subject to Part II of Title III of the Communications Act must be capable of operating on the frequency 156.800 MHz and in other respects meet the requirements of §80.143. The radiotelephone stations on ships subject to the Safety Convention must be capable of operating in the simplex mode on the ship station transmitting frequencies specified in the frequency band 156.025 MHz to 157.425 MHz and in the semiduplex mode on the two frequency channels specified in the following table:

| Channel designators | Transmitting frequencies (MHz) | |
|---|---|---|
| | Ship station | Coast station |
| 60 | 156.025 | 160.625 |
| 01 | 156.050 | 160.650 |
| 61 | 156.075 | 160.675 |
| 02 | 156.100 | 160.700 |
| 62 | 156.125 | 160.725 |
| 03 | 156.150 | 160.750 |
| 63 | 156.175 | 160.775 |
| 04 | 156.200 | 160.800 |
| 64 | 156.225 | 160.825 |
| 05 | 156.250 | 160.850 |
| 65 | 156.275 | 160.875 |
| 06 | 156.300 | ..... |
| 66 | 156.325 | 160.925 |
| 07 | 156.350 | 160.950 |
| 67 | 156.375 | 156.375 |
| 08 | 156.400 | ..... |
| 68 | 156.425 | 156.425 |
| 09 | 156.450 | 156.450 |
| 69 | 156.475 | 156.475 |
| 10 | 156.500 | 156.500 |
| 11 | 156.550 | 156.550 |
| 71 | 156.575 | 156.575 |
| 12 | 156.600 | 156.600 |
| 72 | 156.625 | ..... |
| 13 | 156.650 | 156.650 |
| 73 | 156.675 | 156.675 |
| 14 | 156.700 | 156.700 |
| 74 | 156.725 | 156.725 |
| 15 | 156.750 | 156.750 |
| 75 | (1) | (1) |
| 16 | 156.800 | 156.800 |
| 76 | (1) | (1) |
| 17 | 156.850 | 156.850 |
| 77 | 156.875 | ..... |
| 18 | 156.900 | 161.500 |
| 78 | 156.925 | 161.525 |
| 19 | 156.950 | 161.550 |
| 79 | 156.975 | 161.575 |
| 20 | 157.000 | 161.600 |
| 80 | 157.025 | 161.625 |
| 21 | 157.050 | 161.650 |
| 81 | 157.075 | 161.675 |
| 22 | 157.100 | 161.700 |
| 82 | 157.125 | 161.725 |
| 23 | 157.150 | 161.750 |
| 83 | 157.175 | 161.775 |
| 24 | 157.200 | 161.800 |
| 84 | 157.225 | 161.825 |
| 25 | 157.250 | 161.850 |
| 85 | 157.275 | 161.875 |
| 26 | 157.300 | 161.900 |
| 86 | 157.325 | 161.925 |
| 27 | 157.350 | 161.950 |
| 87 | 157.375 | 161.975 |
| 28 | 157.400 | 162.000 |
| 88 | 157.425 | 162.025 |

[1] Guard band.

[51 FR 31213, Sept. 2, 1986; 52 FR 35246, Sept. 18, 1987, as amended at 54 FR 40059, Sept. 29, 1989]

### § 80.872 The VHF radiotelephone installation.

The VHF radiotelephone installation includes:

(a) A VHF radiotelephone transmitter,

(b) A VHF radiotelephone receiver,

(c) A power supply,

(d) An antenna system.

### § 80.873 VHF radiotelephone transmitter.

(a) The transmitter must be capable of transmission of G3E emission on 156.300 MHz and 156.800 MHz, and on frequencies which have been specified for use in a system established to promote safety of navigation. Vessels in waters of other Administrations are required to communicate on any channel designated by that Administration for navigational safety in the bands specified in § 80.871(d).

(b) The transmitter must be adjusted so that the transmission of speech normally produces peak modulation within the limits of 75 percent and 100 percent.

(c) The transmitter must deliver a carrier power between 8 and 25 watts into a 50 ohm effective resistance. Provision must be made for reducing the carrier power to a value between 0.1 and 1.0 watts.

(d) The transmitter complies with the power output requirements specified in paragraph (c) of this section when:

(1) The transmitter is capable of being adjusted for efficient use with an actual ship station transmitting antenna meeting the requirements of § 80.876; and

(2) The transmitter has been demonstrated capable, with normal operating voltages applied, of delivering not less than 8 watts of carrier power into 50 ohms effective resistance over the frequency band specified in § 80.871(d). An individual demonstration of the power output capability of the transmitter, with the radiotelephone installation normally installed on board ship, may be required; and

(3) It is type accepted as required by subpart F of this part.

### § 80.874 VHF radiotelephone receiver.

(a) The receiver used for providing the watch for navaigational safety required by § 80.313 must be type accepted by the Commission and capable of effective reception of G3E emission on the frequencies required by § 80.871(d)

when connected to the antenna specified in §80.876.

(b) The receiver must have a usable sensitivity of 0.5 microvolts.

(c) The receiver must deliver adequate audio output power to be heard in the ambient noise level likely to be expected on board ships with a loudspeaker and/or a telephone handset.

(d) In the simplex mode when the transmitter is activated the receiver output must be muted.

**§80.875 VHF radiotelephone power supply.**

(a) There must be readily available for use under normal load conditions a power supply sufficient to simultaneously energize the VHF transmitter at its required antenna power, and the VHF receiver. Under this load condition the voltage of the source of energy at the power input terminals of the VHF radiotelephone installation must not deviate from its rated value by more than 10 percent on ships completed on or after March 1, 1957, nor by more than 15 percent on ships completed before that date.

(b) When the power supply for the VHF radiotelephone installation consists of batteries, they must be installed in the upper part of the ship, secured against shifting with motion of the ship, capable of operating the installation for 6 hours, and accessible with not less than 26 cm (10 in.) head room.

(c) Means must be provided for charging any rechargeable batteries used in the ship's VHF radiotelephone installation. There must be provided a device which, during charging of the batteries, will give a continuous indication of the charging current.

(d) The VHF radiotelephone installation may be connected to the reserve power supply of a compulsorily fitted radiotelephone or radiotelegraph installation.

[51 FR 31213, Sept. 2, 1986, as amended at 58 FR 44953, Aug. 25, 1993]

**§80.876 VHF radiotelephone antenna system.**

A vertically polarized nondirectional antenna must be provided for VHF radiotelephone installations. The construction and installation of this antenna must insure proper operation in an emergency.

**§80.877 Controls and indicators required for VHF radiotelephone installation.**

The controls and indicators used on equipment of the VHF radiotelephone installation must meet the following standards:

(a) The size of controls must easily permit normal adjustment. The function and the setting of the controls must be clearly indicated.d

(b) Controls must be illuminated to permit satisfactory operation of the equipment.

(c) Means must be provided to reduce to extinction any light output from the equipment which could affect safety of navigation.

(d) An on/off switch must be provided for the entire installation with a visual indication that the installation is switched on.

(e) The equipment must indicate the channel number, as given in the Radio Regulations, to which it is tuned. It must allow the determination of the channel number under all conditions of external lighting. Channel 16 must be distinctively marked.

(f) The receiver must have a manual volume control and a squelch control.

(g) If the external controls are on a separate control unit and more than one such control unit is provided, the one on the bridge must have priority over the others. When there is more than one control unit, indication must be given to the other(s) that the transmitter is in operation.

**§80.879 Radar installation requirements and specifications.**

Ships of 500 gross tons and upwards that are constructed on or after September 1, 1984, must comply with the radar installation requirements and specifications contained in §80.825 of this part.

[52 FR 35246, Sept. 18, 1987]

## Subpart S—Compulsory Radiotelephone Installations for Small Passenger Boats

### § 80.901 Applicability.

The provisions of Part III of Title III of the Communication Act require United States vessels which transport more than six passengers for hire while such vessels are being navigated on any tidewater within the jurisdiction of the United States adjacent or contiguous to the open sea, or in the open sea to carry a radiotelephone installation complying with this subpart. The provisions of Part III do not apply to vessels which are equipped with a radio installation for compliance with Part II of Title III of the Act, or for compliance with the Safety Convention, or to vessels navigating on the Great Lakes.

### § 80.903 Inspection of radiotelephone installation.

Every vessel subject to Part III of Title III of the Communications Act must have a detailed inspection by the Commission of the prescribed installation once every five years. If after inspection the Commission determines that all relevant provisions of Part III of Title III of the Communications Act, the rules of the Commission, and the station license are met a Communications Act Safety Radiotelephone Certificate will be issued. The effective date of this certificate is the date the installation is found to be in compliance, or not more than one business day later.

### § 80.905 Vessel radio equipment.

(a) Vessels subject to part III of title III of the Communications Act that operate in the waters described in § 80.901 of this section must, at a minimum, be equipped as follows:

(1) Vessels operated solely within the communications range of a VHF public coast station or U.S. Coast Guard station that maintains a watch on 156.800 MHz while the vessel is navigated must be equipped with a VHF radiotelephone installation. Vessels in this category must not operate more than 20 nautical miles from land.

(2) Vessels operated beyond the 20 nautical mile limitation specified in paragraph (a)(1) of this section, but not more than 100 nautical miles from the nearest land, must be equipped with a medium frequency transmitter capable of transmitting J3E emission and a receiver capable of reception of J3E emission within the band 1710 to 2850 kHz, in addition to the VHF radiotelephone installation required by paragraph (a)(1) of this section. The medium frequency transmitter and receiver must be capable of operation on 2670 kHz.

(3) Vessels operated more than 100 nautical miles but not more than 200 nautical miles from the nearest land must:

(i) Be equipped with a VHF radiotelephone installation;

(ii) Be equipped with an MF radiotelephone transmitter and receiver meeting the requirements of paragraph (a)(2) of this section; and

(iii) Be equipped with either:

(A) a single sideband radiotelephone capable of operating on all distress and safety frequencies in the medium frequency and high frequency bands listed in §§ 80.369 (a) and (b), on all the ship-to-shore calling frequencies in the high frequency bands listed in § 80.369(d), and on at least four of the automated mutual-assistance vessel rescue (AMVER) system HF duplex channels (this requirement may be met by the addition of such frequencies to the radiotelephone installation required by paragraph (a)(2) of this section); or

(B) if operated in an area within the coverage of an INMARSAT maritime mobile geostationary satellite in which continuous alerting is available, an INMARSAT ship earth station meeting the equipment authorization rules of parts 2 and 80 of this chapter;

(iv) Be equipped with a reserve power supply meeting the requirements of §§ 80.917(b), 80.919, and 80.921, and capable of powering the single sideband radiotelephone or the ship earth station (including associated peripheral equipment) required by paragraph (a)(3)(iii) of this section;

(v) Be equipped with a NAVTEX receiver conforming to the following performance standards: IMO Resolution A.525(13) and CCIR Recommendation 540;

(vi) Be equipped with a Category I, 406 MHz satellite emergency position-

indicating radiobeacon (EPIRB) meeting the requirements of § 80.1061; and,

(vii) Participate in the AMVER system while engaged on any voyage where the vessel is navigated in the open sea for more than 24 hours. Copies of the AMVER Bulletin are available at: AMVER Maritime Relations (G–NRS–3/AMR), U.S. Coast Guard, Building 110, Box 26, Governor's Island, N.Y. 10004–5034, telephone number (212) 668–7764.

(4) Vessels operated more than 200 nautical miles from the nearest land must:

(i) Be equipped with two VHF radiotelephone installations;

(ii) Be equipped with an MF radiotelephone transmitter and receiver meeting the requirements of paragraph (a)(2) of this section;

(iii) Be equipped with either:

(A) an independent single sideband radiotelephone capable of operating on all distress and safety frequencies in the medium frequency and high frequency bands listed in §§ 80.369(a) and (b), on all of the ship-to-shore calling frequencies in the high frequency bands listed in § 80.369(d), and on at least four of the automated mutual-assistance vessel rescue (AMVER) system HF duplex channels; or

(B) If operated in an area within the coverage of an INMARSAT maritime mobile geostationary satellite in which continuous alerting is available, an INMARSAT ship earth station meeting the equipment authorization rules of parts 2 and 80 of this chapter;

(iv) Be equipped with a reserve power supply meeting the requirements of §§ 80.917(b), 80.919, and 80.921, and capable of powering the single sideband radiotelephone or the ship earth station (including associated peripheral equipment) required by paragraph (a)(4)(iii) of this section;

(v) Be equipped with a NAVTEX receiver conforming to the following performance standards: IMO Resolution A.525(13) and CCIR Recommendation 540;

(vi) Be equipped with a Category I, 406 MHz satellite emergency position-indicating radiobeacon (EPIRB) meeting the requirements of § 80.1061;

(vii) Be equipped with a radiotelephone distress frequency watch receiver meeting the requirements of § 80.269;

(viii) Be equipped with an automatic radiotelephone alarm signal generator meeting the requirements of § 80.221; and

(ix) Participate in the AMVER system while engaged on any voyage where the vessel is navigated in the open sea for more than 24 hours. Copies of the AMVER Bulletin are available at: AMVER Maritime Relations (G–NRS–3/AMR), U.S. Coast Guard, Building 110, Box 26, Governor's Island, N.Y. 10004–5034, telephone number (212) 668–7764.

(b) For a vessel that is navigated within the communication range of a VHF public coast station or U.S. Coast Guard station, but beyond the 20-nautical mile limitation specified in paragraph (a)(1) of this section, an exemption from the band 1605 to 2850 kHz installation requirements may be granted if the vessel is equipped with a VHF transmitter and receiver. An application for exemption must include a chart showing the route of the voyage or the area of operation of the vessel, and the receiving service area of the VHF public coast or U.S. Coast Guard station. The coverage area of the U.S. Coast Guard station must be based on written information from the District Commander, U.S. Coast Guard, a copy of which must be furnished with the application. The coverage area of a public coast station must be computed by the method specified in subpart P of this part.

(c) The radiotelephone installation must be installed to insure safe operation of the equipment and to facilitate repair. It must be protected against the vibration, moisture, temperature, and excessive currents and voltages.

(d) A VHF radiotelephone installation or a remote unit must be located at each steering station except those auxiliary steering stations which are used only during brief periods for docking or for close-in maneuvering. A single portable radiotelephone set meets the requirements of this paragraph if adequate permanent mounting arrangements with suitable power provision and antenna feed are installed at

each operator steering station. Additionally, for vessels of more than 100 gross tons, the radiotelephone installation must be located at the level of the main wheelhouse or at least one deck above the vessel's main deck.

[51 FR 31213, Sept. 2, 1986, as amended at 56 FR 19301, Apr. 26, 1991; 57 FR 34262, Aug. 4, 1992]

### § 80.907 Principal operating position.

The principal operating position of the radiotelephone installation on vessels over 100 gross tons must be in the room from which the vessel is normally steered while at sea. If the station can be operated from any location other than the principal operating position, a positive means must be provided at the principal operating position to take full control of the station.

### § 80.909 Radiotelephone transmitter.

(a) The medium frequency transmitter must have a peak envelope output power of at least 60 watts for J3E emission on 2182 kHz and at least one ship-to-shore working frequency within the band 1605 to 2850 kHz enabling communication with a public coast station if the region in which the vessel is navigated is served by a public coast station operating in this band.

(b) The single sideband radiotelephone must be capable of operating on maritime frequencies in the band 1710 to 27500 kHz with a peak envelope output power of at least 120 watts for J3E emission and H3E emission on 2182 kHz and J3E emission on the distress and safety frequencies listed in § 80.369(b). Single sideband radios installed on or before February 2, 1992, may be used until February 2, 1997, provided such radios are capable of operating on the frequencies listed in §§ 80.369 (a) and (b), and at least half of the frequencies listed in § 80.369(d).

(c) The transmitter complies with the power output requirements specified in paragraphs (a) or (b) of this section when:

(1) The transmitter can be adjusted for efficient use with an actual ship station transmitting antenna meeting the requirements of § 80.923 of this part; and

(2) The transmitter, with normal operating voltages applied, has been demonstrated to deliver its required output power on the frequencies specified in paragraphs (a) or (b) of this section into either an artificial antenna consisting of a series network of 10 ohms effective resistance and 200 picofarads capacitance or an artificial antenna of 50 ohms nominal impedance. An individual demonstration of power output capability of the transmitter, with the radiotelephone installation normally installed on board ship, may be required.

(d) The single sideband radiotelephone must be capable of transmitting clearly perceptible signals from ship to shore. The transmitter complies with this requirement if it is capable of enabling communication with a public coast station on working frequencies in the 4000 to 27500 kHz band specified in § 80.371(b) of this part under normal daytime operating conditions.

[56 FR 19302, Apr. 26, 1991, as amended at 57 FR 34262, Aug. 4, 1992]

### § 80.911 VHF transmitter.

(a) The transmitter must be capable of transmission of G3E emission on 156.800 MHz, 156.300 MHz, and on the ship-to-shore working frequencies necessary to communicate with public coast stations serving the area in which the vessel is navigated.

(b) The transmitter must be adjusted so that the transmission of speech normally produces peak modulation within the limits 75 percent and 100 percent.

(c) The transmitter must be type accepted to transmit between 20 watts and 25 watts, on each of the frequencies 156.300 MHz, 156.800 MHz and on ship-to-shore public correspondence channels, into 50 ohms effective resistance when operated with a primary supply voltage of 13.6 volts DC.

(d) When an individual demonstration of the capability of the transmitter is necessary the output power requirements prescribed in this paragraph must be met as follows:

(1) Measurements of primary supply voltage and transmitter output power must be made with the equipment drawing energy only from ship's battery;

(2) The primary supply voltage, measured at the power input terminals to the transmitter, and the output

power of the transmitter, terminated in a matching artificial load, must be measured at the end of 10 minutes of continuous operation of the transmitter at its full power output.

(3) The primary supply voltage must not be less than 11.5 volts.

(4) The transmitter output power must be not less than 15 watts.

(5) For primary supply voltages, measured in accordance with the procedures of this paragraph, greater than 11.5 volts, but less than 12.6 volts, the required transmitter output power shall be equal to or greater than the value calculated from the formula

$$P=4.375(V)-35.313$$

where V equals the measured primary voltage and P is the calculated output power in watts.''

[51 FR 31213, Sept. 2, 1986, as amended at 54 FR 40059, Sept. 29, 1989]

### §80.913 Radiotelephone receivers.

(a) If a medium frequency radiotelephone installation is provided, the watch receiver must be capable of effective reception of J3E emissions, be connected to the antenna system specified by §80.923, and be preset to, and capable of accurate and convenient selection of, the frequencies 2182 kHz, 2638 kHz, and the receiving frequency(s) of public coast stations serving the area in which the vessel is navigated.

(b) If a single sideband radiotelephone installation is provided, the receiver must be capable of reception of H3E and J3E emissions on 2182 kHz and J3E emission on any receiving frequency authorized pursuant to §80.909 of this part.

(c) If a very high frequency radiotelephone installation is provided, the receiver used for maintaining the watch required by §80.303 must be capable of effective reception of G3E emission, be connected to the antenna system specified by §80.923 and be preset to, and capable of selection of, the frequencies 156.300 MHz, 156.800 MHz, and the receiving frequency(s) of public coast stations serving the area in which the vessel is navigated.

(d) One or more loudspeakers must be provided to permit reception on 2182 kHz or 156.800 MHz at the principal operating position and at any other place where listening is performed.

(e) Any receiver provided as a part of the radiotelephone installation must have a sensitivity of at least 50 microvolts in the case of MF equipment, and 1 microvolt in the case of HF or VHF equipment.

(f) The receiver required in paragraphs (a), (b) or (c) of this section must be capable of efficient operation when energized by the main source of energy. When a reserve source of energy is required pursuant to §80.905 or §80.917 of this part, the receiver must also be capable of efficient operation when energized by the reserve source of energy.

(g) The sensitivity of a receiver is the strength in microvolts of a signal, modulated 30 percent at 400 Hertz, required at the receiver input to produce an audio output of 50 milliwatts to the loudspeaker with a signal-to-noise ratio of at least 6 decibels. Evidence of a manufacturer's rating or a demonstration of the sensitivity of a required receiver computed on this basis must be furnished upon request of the Commission.

[51 FR 31213, Sept. 2, 1986, as amended at 56 FR 19302, Apr. 26, 1991]

### §80.915 Main power supply.

(a) There must be readily available for use under normal load conditions a main power supply sufficient to simultaneously energize the radiotelephone transmitter at its required antenna power, and the required receiver. Under this load condition the potential of the main power supply at the power input terminals of the radiotelephone installation must not deviate from its rated potential by more than 10 percent on vessels completed on or after March 1, 1957, nor by more than 15 percent on vessels completed before that date.

(b) When the main power supply consists of batteries, they must be installed as high above the bilge as practicable, secured against shifting with motion of the vessel, and accessible with not less than 26 cm (10 in.) head room.

(c) Means must be provided for adequately charging any batteries used as a main power supply. There must be a

device which gives a continuous indication of the rate and polarity of the charging current during charging.

[51 FR 31213, Sept. 2, 1986, as amended at 58 FR 44953, Aug. 25, 1993]

### § 80.917 Reserve power supply.

(a) A vessel of more than 100 gross tons the keel of which was laid after March 1, 1957, must have a reserve power supply located on the same deck as the main wheel house or at least one deck above the vessel's main deck, unless the main power supply is so situated.

(b) The reserve power supply must be independent of the ship's propulsion and of any other electrical system, and be sufficient to simulataneously energize the radiotelephone transmitter at its required output power, and the receiver. The reserve power supply must be available for use at all times.

(c) When the reserve power supply consists of batteries, they must be installed as high above the bilge as practicable, secured against shifting with motion of the vessel, and accessible with not less than 26 cm (10 in.) head room.

(d) The reserve power supply must be located as near the required transmitter and receiver as practicable.

(e) All reserve power supply circuits must be protected from overloads.

(f) Means must be provided for charging any storage batteries used as a reserve power supply for the required radiotelephone installation. There must be a device which will give continuous indication of the rate and polarity of the charging current during charging.

(g) The cooling system of each internal combustion engine used as a part of the reserve power supply must be adequately treated to prevent freezing or overheating consistent with the season and route to be travelled by the particular vessel involved.

[51 FR 31213, Sept. 2, 1986, as amended at 58 FR 44954, Aug. 25, 1993]

### § 80.919 Required capacity.

If either the main or reserve power supply includes batteries, these batteries must have sufficient reserve capacity to permit proper operation of the required transmitter and receiver for at least 3 hours under normal working conditions.

### § 80.921 Proof of capacity.

(a) When directed by a representative of the Commission the vessel must prove by demonstration as prescribed in paragraphs (b), (c), (d) and (e) of this section, that the requirements of § 80.919 are met.

(b) Proof of the ability of a storage battery used as a main or reserve power supply to operate over the 3-hour period established by a discharge test over the prescribed period of time, when supplying power at the voltage required for an electrical loss as prescribed by paragraph (d) of this section.

(c) When the required power supply consists of an engine-driven generator, proof of the adequacy of the engine fuel supply to operate the unit over the 3-hour period of time may be established by using as a basis the fuel consumption during a 1 hour period when supplying power, at the voltage required for operating an electrical load as prescribed by paragraph (d) of this section.

(d) In determining the required electrical load the following formula must be used:

(1) One-half of the current of the required transmitter at its rated output power; plus

(2) Current of the required receiver; plus

(3) Current of electric light, if required by § 80.925; plus

(4) The sum of the current of all other loads the reserve power supply may provide in time of emergency.

(e) At the conclusion of the test specified in paragraphs (b) and (c) of this section, no part of the main or reserve power supply must have an excessive temperature rise, nor must the specific gravity or voltage of any storage battery be below the 90 percent discharge point.

### § 80.923 Antenna system.

An antenna must be provided in accordance with the applicable requirements of § 80.81 of this part which is as efficient as practicable for the transmission and reception of radio waves. The construction and installation of

this antenna must insure proper emergency operation.

[51 FR 31213, Sept. 2, 1986, as amended at 56 FR 19302, Apr. 26, 1991]

### §80.925 Electric light.

(a) If the vessel is navigated at night an electric light or dial lights which clearly illuminate the operating controls must be installed to provide illumination of the operating controls at the principal operating position.

(b) The electric light must be energized from the main power supply and, if a reserve power supply for the radiotelephone installation is required, from the reserve power supply.

### §80.927 Antenna radio frequency indicator.

The transmitter must be equipped with a device which provides visual indication whenever the transmitter is supplying power to the antenna.

### §80.929 Nameplate.

A durable nameplate must be mounted on the required radiotelephone equipment. When the transmitter and receiver comprise a single unit, one nameplate is sufficient. The nameplate must show the name of the manufacturer and the type or model number.

### §80.931 Test of radiotelephone installation.

Unless normal use of the radiotelephone installation demonstrates that the equipment is in proper operating condition, a test communication on a required frequency in the 1605 to 27500 kHz band or the 156 to 162 MHz band must be made by a qualified operator each day the vessel is navigated. If the equipment is not in proper operating condition, the master must be promptly notified.

[51 FR 31213, Sept. 2, 1986, as amended at 56 FR 19302, Apr. 26, 1991]

### §80.933 General small passenger vessel exemptions.

(a) Subject U.S. vessels less than 50 gross tons which are navigated not more than 300 meters (1,000 feet) from the nearest land at mean low tide are exempt from the provisions of title III, part III of the Communications Act.

(b) All U.S. passenger vessels of less than 100 gross tons, not subject to the radio provisions of the Safety Convention, are exempt from the radiotelegraph provisions of Part II of Title III of the Communications Act, provided that the vessels are equipped with a radiotelephone installation fully complying with subpart S of this part.

(c) Prior to February 1, 1999, U.S. passenger vessels of less than 100 gross tons are exempt from the radiotelepraph requirements of Part II of Title III of the Communications Act and the MF radiotelephone requirements of this subpart as well as Regulations 7 to 11 of Chapter IV of the Safety Convention if the following criteria are fully met:

(1) The ship is equipped with a VHF radiotelephone installation meeting the requirements of this subpart;

(2) While navigating more than three nautical miles from the nearest land, the ship is equipped with:

(i) A Category 1, 406 MHz EPIRB meeting the requirements of §80.1061;

(ii) A NAVTEX receiver meeting the requirements of §80.1101(c)(1); and

(iii) Three two-way VHF radiotelephone apparatus and two radar transponders meeting the requirements of §80.1095.

(3) The ship remains within communications range of U.S. Coast Guard or public coast stations operating in the band 156–162 MHz;

(4) The routes of the voyage are never more than 20 nautical miles from the nearest land or, alternatively, not more than 200 nautical miles between two consecutive ports, and are limited to the following domestic and international voyages:

(i) In waters contiguous to Hawaii, the Bahama Islands and the islands in the Caribbean Sea, including the Greater Antilles, Lesser Antilles, and the coastal waters of Venezuela between the Mouth of the Orinoco River and the Gulf of Venezuela;

(ii) In waters contiguous to the coast of Southern California from Point Conception south to Cape San Lucas, Mexico; the islands of San Miguel, Santa Rosa, Santa Cruz, Anacopa, San Nicolas, Santa Barbara, Santa Catalina,

and San Clemente are considered to be within these waters; and,

(iii) In waters of the Pacific Northwest between Tacoma, Washington and the waters of British Columbia, Canada, as far north as Queen Charlotte Strait, never in the open sea.

(d) Prior to February 1, 1999, U.S. passenger vessels of less than 100 gross tons are exempt from the radiotelegraph requirements of Part II of Title III of the Communications Act, as well as Regulations 7 to 11 of Chapter IV of the Safety Convention, if the following criteria are fully met:

(1) The ship is equipped in accordance with paragraphs (c)(1) and (c)(2) of this section;

(2) The ship is equipped with a MF radiotelephone installation meeting the requirements of this subpart;

(3) The routes of the voyage are never more than 20 nautical miles from the nearest land or, alternatively, not more than 100 nautical miles between two consecutive ports, and are limited to international voyages between Florida and the Bahama Islands.

(e) These exemptions may be terminated at any time without hearing, if in the Commission's discretion, the need for such action arises.

[51 FR 31213, Sept. 2, 1986, as amended at 58 FR 44954, Aug. 25, 1993; 60 FR 58245, Nov. 27, 1995]

### § 80.935 Station clock.

Each station subject to this subpart must have a working clock or timepiece readily available to the operator.

## Subpart T—Radiotelephone Installation Required for Vessels on the Great Lakes

### § 80.951 Applicability.

The Agreement Between the United States of America and Canada for Promotion of Safety on the Great Lakes by Means of Radio, 1973, applies to vessels of all countries when navigated on the Great Lakes. The Great Lakes Radio Agreement defines the Great Lakes as ''all waters of Lakes Ontario, Erie, Huron (including Georgian Bay), Michigan, Superior, their connecting and tributary waters and the River St. Lawrence as far east as the lower exit of the St. Lambert Lock at Montreal in the Province of Quebec, Canada,'' but does not include such of the connecting and tributary waters as may be specified in the Technical Regulations. The Technical Regulations do not include any connecting and tributary waters except the St. Mary's River, the St. Clair River, Lake St. Clair, the Detroit River and the Welland Canal. A vessel to which the Great Lakes Radio Agreement applies and which falls into the specific categories by paragraph (a), (b) or (c) of this section and not excepted by paragraph (d) or (e) of this section must comply with this subpart while navigated on the Great Lakes.

(a) Every vessel 20 meters (65 feet) or over in length (measured from end to end over the deck, exclusive of sheer).

(b) Every vessel engaged in towing another vessel or floating object, except:

(1) Where the maximum length of the towing vessel, measured from end to end over the deck exclusive of sheer, is less than 8 meters (26 feet) and the length or breadth of the tow, exclusive of the towing line, is less than 20 meters (65 feet);

(2) Where the vessel towed complies with this subpart;

(3) Where the towing vessel and tow are located within a booming ground (an area in which logs are confined); or

(4) Where the tow has been undertaken in an emergency and neither the towing vessel nor the tow can comply with this part.

(c) Any vessel carrying more than six passengers for hire.

(d) The requirements of the Great Lakes Radio Agreement do not apply to:

(1) Ships of war and troop ships;

(2) Vessels owned and operated by any national government and not engaged in trade.

(e) The Commission may if it considers that the conditions of the voyage or voyages affecting safety (including but not necessarily limited to the regularity, frequency and nature of the voyages, or other circumstances) are such as to render full application of the Great Lakes Agreement unreasonable or unnecessary, exempt partially, conditionally or completely, any individual vessel for one or more voyages or

for any period of time not exceeding one year.

**§80.953 Inspection and certification.**

(a) Each U.S. flag vessel subject to the Great Lakes Agreement must have an inspection of the required radiotelephone installation at least once every 13 months. This inspection must be made while the vessel is in active service or within not more than one month before the date on which it is placed in service.

(b) An inspection and certification of a ship subject to the Great Lakes Agreement must be made by a technician holding one of the following: a General Radiotelephone Operator License, a GMDSS Radio Maintainer's License, a Second Class Radiotelegraph Operator's Certificate, or a First Class Radiotelegraph Operator's Certificate. Additionally, the technician must not be the vessel's owner, operator, master, or an employee of any of them. The results of the inspection must be recorded in the ship's radiotelephone log and include:

(1) The date the inspection was conducted;

(2) The date by which the next inspection needs to be completed;

(3) The inspector's printed name, address, class of FCC license (including the serial number);

(4) The results of the inspection, including any repairs made; and

(5) The inspector's signed and dated certification that the vessel meets the requirements of the Great Lakes Agreement and the Bridge-to-Bridge Act contained in subparts T and U of this part and has successfully passed the inspection.

(c) The vessel owner, operator, or ship's master must certify that the inspection required by paragraph (b) was satisfactory.

(d) The ship's log must be retained on-board the vessel for at least two years from the date of the inspection.

[61 FR 25807, May 23, 1996]

**§80.955 Radiotelephone installation.**

(a) Each U.S. flag vessel of less than 38 meters (124 feet) in length while subject to the Great Lakes Agreement must have a radiotelephone meeting the provisions of this subpart in addition to the other rules in this part governing ship stations using telephony.

(b) Each U.S. flag vessel of 38 meters (124 feet) or more in length while subject to the Great Lakes Agreement must have a minimum of two VHF radiotelephone installations in operating condition meeting the provisions of this subpart. The second VHF installation must be electrically separate from the first VHF installation. However, both may be connected to the main power supply provided one installation can be operated from a separate power supply located as high as practicable on the vessel.

(c) This paragraph does not require or prohibit the use of other frequencies for use by the same ''radiotelephone installation'' for communication authorized by this part.

**§80.956 Required frequencies and uses.**

(a) Each VHF radiotelephone installation must be capable of transmitting and receiving G3E emission as follows:

(1) Channel 16—156.800 MHz-Distress, Safety and Calling; and

(2) Channel 6—156.300 MHz—Primary intership.

(b) The radiotelephone station must have additional frequencies as follows:

(1) Those ship movement frequencies appropriate to the vessel's area of operation: Channel 11—156.550 MHz, Channel 12—156.600 MHz, or Channel 14—156.700 MHz.

(2) The navigational bridge-to-bridge frequency, 156.650 MHz (channel 13).

(3) Such other frequencies as required for the vessel's service.

(4) One channel for receiving marine navigational warnings for the area of operation.

(c) Every radiotelephone station must include one or more transmitters, one or more receivers, one or more sources of energy and associated antennas and control equipment. The radiotelephone station, exclusive of the antennas and source of energy, must be located as high as practicable on the vessel, preferably on the bridge, and protected from water, temperature, and electrical and mechanical noise.

[51 FR 31213, Sept. 2, 1986, as amended at 53 FR 17052, May 13, 1988]

**§ 80.957 Principal operating position.**

(a) The principal operating position of the radiotelephone installation must be on the bridge, convenient to the conning position.

(b) When the radiotelephone station is not located on the bridge, operational control of the equipment must be provided at the location of the radiotelephone station and at the bridge operating position. Complete control of the equipment at the bridge operating position must be provided.

**§ 80.959 Radiotelephone transmitter.**

(a) The transmitter must be capable of transmission of G3E emission on the required frequencies.

(b) The transmitter must deliver a carrier power of between 10 watts and 25 watts into 50 ohms nominal resistance when operated with its rated supply voltage. The transmitter must be capable of readily reducing the carrier power to one watt or less.

(c) To demonstrate the capability of the transmitter, measurements of primary supply voltage and transmitter output power must be made with the equipment operating on the vessel's main power supply, as follows:

(1) The primary supply voltage measured at the power input terminals to the transmitter terminated in a matching artificial load, must be measured at the end of 10 minutes of continuous operation of the transmitter at its rated power output.

(2) The primary supply voltage, measured in accordance with the procedures of this paragraph, must be not less than 11.5 volts.

(3) The transmitter at full output power measured in accordance with the procedure of this paragraph must not be less than 10 watts.

**§ 80.961 Radiotelephone receiver.**

(a) The receiver must be capable of reception of G3E emission on the required frequencies.

(b) The receiver must have a sensitivity of at least 2 microvolts across 50 ohms for a 20 decibel signal-to-noise ratio.

**§ 80.963 Main power supply.**

(a) A main power supply must be available at all times while the vessel is subject to the requirements of the Great Lakes Radio Agreement.

(b) Means must be provided for charging any batteries used as a source of energy. A device which during charging of the batteries gives a continuous indication of charging current must be provided.

**§ 80.965 Reserve power supply.**

(a) Each passenger vessel of more than 100 gross tons and each cargo vessel of more than 300 gross tons must be provided with a reserve power supply independent of the vessel's normal electrical system and capable of energizing the radiotelephone installation and illuminating the operating controls at the principal operating position for at least 2 continuous hours under normal operating conditions. When meeting this 2 hour requirement, such reserve power supply must be located on the bridge level or at least one deck above the vessel's main deck.

(b) Instead of the independent power supply specified in paragraph (a) of this section, the vessel may be provided with an auxiliary radiotelephone installation having a power source independent of the vessel's normal electrical system. Any such installation must comply with §§ 80.955, 80.956, 80.957, 80.959, 80.961, 80.969 and 80.971, as well as the general technical standards contained in this part. Additionally, the power supply for any such auxiliary radiotelephone must be a ''reserve power supply'' for the purposes of paragraphs (c), (d) and (e) of this section.

(c) Means must be provided for adequately charging any batteries used as a reserve power supply for the required radiotelephone installation. A device must be provided which, during charging of the batteries, gives a continuous indication of charging.

(d) The reserve power supply must be available within one minute.

(e) The station licensee, when directed by the Commission, must prove by demonstration as prescribed in paragraphs (e)(1), (2), (3) and (4) of this section that the reserve power supply is capable of meeting the requirements

of paragraph (a) of this section as follows:

(1) When the reserve power supply includes a battery, proof of the ability of the battery to operate continuously for the required time must be established by a discharge test over the required time, when supplying power at the voltage required for normal operation to an electric load as prescribed by paragraph (e)(3) of this section.

(2) When the reserve power supply includes an engine driven generator, proof of the adequacy of the engine fuel supply to operate the unit continuously for the required time may be established by using as a basis the fuel consumption during a continuous period of one hour when supplying power, at the voltage required for normal operation, to an electrical load as prescribed by paragraph (e)(3) of this section.

(3) For the purposes of determining the electrical load to be supplied, the following formula must be used:

(i) One-half of the current of the radiotelephone while transmitting at its rated output, plus one-half the current while not transmitting; plus

(ii) Current of the required receiver; plus

(iii) Current of the source of illumination provided for the operating controls prescribed by § 80.969; plus

(iv) The sum of the currents of all other loads to which the reserve power supply may provide power in time of emergency or distress.

(4) At the conclusion of the test specified in paragraphs (e)(1) and (2) of this section, no part of the reserve power supply must have excessive temperature rise, nor must the specific gravity or voltage of any battery be below the 90 percent discharge point.

### § 80.967 Antenna system.

The antenna must be omnidirectional, vertically polarized and located as high as practicable on the masts or superstructure of the vessel.

### § 80.969 Illumination of operating controls.

(a) The radiotelephone must have dial lights which illuminate the operating controls at the principal operating position.

(b) Instead of dial lights, a light from an electric lamp may be provided to illuminate the operating controls of the radiotelephone at the principal operating position. If a reserve power supply is required, arrangements must permit the use of that power supply for illumination within one minute.

### § 80.971 Test of radiotelephone installation.

At least once during each calendar day a vessel subject to the Great Lakes Radio Agreement must test communications on 156.800 MHz to demonstrate that the radiotelephone installation is in proper operating condition unless the normal daily use of the equipment demonstrates that this installation is in proper operating condition. If equipment is not in operating condition, the master must have it restored to effective operation as soon as possible.

## Subpart U—Radiotelephone Installations Required by the Bridge-To-Bridge Act

### § 80.1001 Applicability.

The Bridge-to-Bridge Act and the regulations of this part apply to the following vessels in the navigable waters of the United States:

(a) Every power-driven vessel of 20 meters or over in length while navigating;

(b) Every vessel of 100 gross tons and upward carrying one or more passengers for hire while navigating;

(c) Every towing vessel of 7.8 meters (26 feet) or over in length, measured from end to end over the deck excluding sheer, while navigating; and

(d) Every dredge and floating plant engaged, in or near a channel or fairway, in operations likely to restrict or affect navigation of other vessels. An unmanned or intermittently manned floating plant under the control of a dredge shall not be required to have a separate radiotelephone capability.

[51 FR 31213, Sept. 2, 1986, as amended at 57 FR 61012, Dec. 23, 1992; 58 FR 44954, Aug. 25, 1993]

**§ 80.1003 Station required.**

Vessels subject to the Bridge-to-Bridge Act must have a radiotelephone installation to enable the vessel to participate in navigational communications. This radiotelephone installation must be continuously associated with the ship even though a portable installation is used. Foreign vessels coming into U.S. waters where a bridge-to-bridge station is required may fulfill this requirement by use of portable equipment brought a board by the pilot. Non portable equipment, when used, must be arranged to facilitate repair. The equipment must be protected against vibration, moisture, temperature and excessive currents and voltages.

**§ 80.1005 Inspection of station.**

The bridge-to-bridge radiotelephone station will be inspected on vessels subject to regular inspections pursuant to the requirements of Parts II and III of Title III of the Communications Act, the Safety Convention or the Great Lakes Agreement at the time of the regular inspection. If after such inspection, the Commission determines that the Bridge-to-Bridge Act, the rules of the Commission and the station license are met, an endorsement will be made on the appropriate document. The validity of the endorsement will run concurrently with the period of the regular inspection. Each vessel must carry a certificate with a valid endorsement while subject to the Bridge-to-Bridge Act. All other bridge-to-bridge stations will be inspected from time to time. An inspection of the bridge-to-bridge station on a Great Lakes Agreement vessel must normally be made at the same time as the Great Lakes Agreement inspection is conducted by a technician holding one of the following: a General Radiotelephone Operator License, a GMDSS Radio Maintainer's License, a Second Class Radiotelegraph Operator's Certificate, or a First Class Radiotelegraph Operator's Certificate. Additionally, the technician must not be the vessel's owner, operator, master, or an employee of any of them. Ships subject to the Bridge-to-Bridge Act may, in lieu of an endorsed certificate, certify compliance in the station log required by section 80.409(f).

[51 FR 31213, Sept. 2, 1986, as amended at 61 FR 25807, May 23, 1996]

**§ 80.1007 Bridge-to-bridge radiotelephone installation.**

Use of the bridge-to-bridge transmitter must be restricted to the master or person in charge of the vessel, or the person designated by the master or person in charge to pilot or direct the movement of the vessel. Communications must be of a navigational nature exclusively.

**§ 80.1009 Principal operator and operating position.**

The principal operating position of the bridge-to-bridge station must be the vessel's navigational bridge or, in the case of dredges, its main control station. If the radiotelephone installation can be operated from any location other than the principal operating position, the principal operating position must be able to take full control of the installation.

**§ 80.1011 Transmitter.**

(a) The bridge-to-bridge transmitter must be capable of transmission of G3E emission on the navigational frequency 156.650 MHz (Channel 13) and the Coast Guard liaison frequency 157.100 MHz (Channel 22A). Additionally, the bridge-to-bridge transmitter must be capable of transmission of G3E emission on the navigational frequency of 156.375 MHz (Channel 67) while transiting any of the following waters:

(1) The lower Mississippi River from the territorial sea boundary, and within either the Southwest Pass safety fairway or the South Pass safety fairway specified in § 166.200 of the U.S. Coast Guard's Rules, 33 CFR 166.200, to mile 242.4 AHP (Above Head of Passes) near Baton Rouge;

(2) The Mississippi River-Gulf Outlet from the territorial sea boundary, and within the Mississippi River-Gulf outlet Safety Fairway specified in § 166.200 of the U.S. Coast Guard's Rules, 33 CFR 166.200, to that channel's junction with the Inner Harbor Navigation Canal; and

(3) The full length of the Inner Harbor Navigation Canal from its junction

with the Mississippi River to that canal's entry to Lake Pontchartrain at the New Seabrook vehicular bridge.

(b) [Reserved]

[57 FR 61012, Dec. 23, 1992]

### §80.1013 Receiver.

The bridge-to-bridge receiver must be capable of reception of G3E emission on the navigational frequency 156.650 MHz (Channel 13) and the Coast Guard liaison frequency 157.100 MHz (Channel 22A). In addition, the bridge-to-bridge receiver must be capable of reception of G3E emission on the navigational frequency of 156.375 MHz (Channel 67) while transiting in the waters of the lower Mississippi River as described in §§80.1011(a)(1), (a)(2) and (a)(3) of this part.

[57 FR 61012, Dec. 23, 1992]

### §80.1015 Power supply.

(a) There must be readily available for use under normal load conditions, a power supply sufficient to simultaneously energize the bridge-to-bridge transmitter at its required antenna power, and the bridge-to-bridge receiver. Under this load condition the voltage of the power supply at the power input terminals of the bridge-to-bridge radiotelephone installation must not deviate from its rated voltage by more than 10 percent on vessels completed on or after March 1, 1957, nor by more than 15 percent on vessels completed before that date.

(b) When the power supply for a nonportable bridge-to-bridge radiotelephone installation consists of or includes batteries, they must be installed as high above the bilge as practicable, secured against shifting with motion of the vessel, and accessible with not less than 26 cm (10 in.) head room.

(c) Means must be provided for adequately charging any rechargeable batteries used in the vessel's bridge-to-bridge radiotelephone installation. There must be provided a device which will give a continuous indication of the charging current during charging.

[51 FR 31213, Sept. 2, 1986, as amended at 58 FR 44954, Aug. 25, 1993]

### §80.1017 Antenna system.

(a) An antenna must be provided for nonportable bridge-to-bridge radiotelephone installations which is nondirectional and vertically polarized. The construction and installation of this antenna must insure proper operation in time of an emergency.

(b) In cases where portable bridge-to-bridge equipment is permanently associated with a vessel, the equipment must be provided with a connector for an external antenna of a type capable of meeting requirements of paragraph (a) of this section and §80.71. The vessel must be equipped with an external antenna meeting requirements of paragraph (a) of this section and §80.71, capable of use with the portable equipment during a normal listening watch.

### §80.1019 Antenna radio frequency indicator.

Each nonportable bridge-to-bridge transmitter must be equipped, at each point of control, with a carrier operated device which will provide continuous visual indication when the transmitter is supplying power to the antenna transmission line or, in lieu thereof, a pilot lamp or meter which will provide continuous visual indication when the transmitter control circuits have been placed in a condition to activate the transmitter.

[52 FR 35246, Sept. 18, 1987]

### §80.1021 Nameplate.

A durable nameplate must be mounted on the required radiotelephone or be an integral part of it. When the transmitter and receiver comprise a single unit, one nameplate is sufficient. The nameplate must show at least the name of the manufacturer and the type or model number.

### §80.1023 Test of radiotelephone installation.

Unless normal use of the required radiotelephone installation demonstrates that the equipment is in proper operating condition, a test communication for this purpose must be made by a qualified operator each day the vessel is navigated. If the equipment is not in proper operating condition, the master must be promptly notified. The master

must have it restored to effective operating condition as soon as possible.

## Subpart V—Emergency Position Indicating Radiobeacons (EPIRB's)

### § 80.1051 Scope.

This subpart describes the technical and performance requirements for Classes A, B, C, and S, and Categories 1, 2, and 3 EPIRB stations.

[53 FR 37308, Sept. 26, 1988]

### § 80.1053 Special requirements for Class A EPIRB stations.

(a) A Class A EPIRB station must meet the following:

(1) Float free of a sinking ship;

(2) Activate automatically when it floats free of a sinking ship;

(3) Have an antenna that deploys automatically when the EPIRB activates;

(4) Use A3X emission on a mandatory basis and A3E and NON emissions on an optional basis on the frequencies 121.500 MHz and 243.000 MHz;

(5) Transmission of A3E or NON emission must not exceed 90 seconds and must be followed by a transmission of at least three minutes of A3X emission; each transmission of a synthesized and/or pre-recorded voice message must be preceded by the words ''this is a recording'';

(6) The effective radiated power must not be less than 75 milliwatts after 48 hours of continuous operation and without replacement or recharge of batteries.

(7) The mandatory A3X emission must be amplitude modulated with an audio signal swept downward between 1600 and 300 Hz. The sweeping range of the audio signal must be 700 Hz or greater. Its sweep repetition rate must be between 2 and 4 times per second. The modulation factor must be at least 0.85 and the modulation duty cycle must be at least 33%, but not more that 55%.

(8) EPIRBs manufactured on or after October 1, 1988; EPIRBs carried as part of a ship station to satisfy USCG equipment carriage requirements that are newly installed on or after April 1, 1989; EPIRBs carried as part of a ship station to satisfy USCG equipment carriage requirements on or after August 1, 1991; and EPIRBs that are newly installed as part of a voluntarily equipped ship station after August 1, 1991, must have a clearly defined carrier frequency distinct from the modulation sidebands for the mandatory emission, A3X, and if used, the A3E or NON emissions. On 121.500 MHz at least thirty per cent of the total power emitted during any transmission cycle with or without modulation must be contained within plus or minus 30 Hz of the carrier frequency. On 243.000 MHz at least thirty per cent of the toal power emitted during any transmission cycle with or without modulation must be contained within plus or minus 60 Hz of the carrier frequency. Additionally, if the type of emission is changed during transmission the carrier frequency nust not shift more than plus or minus 30 Hz on 121.500 MHz and not more than plus or minus 60 Hz on 243.000 MHz. The long term stability of the carrier frequency must comply with the requirements in § 80.209(a) of this part.

(9) Have a visible or audible indicator which clearly shows that the device is operating. The indicator must be activated by the RF output power. The indicator must be protected from damage due to dropping or contact with other objects;

(10) Float in calm water with at least the upper 5 cm (2 in.) of the EPIRB out of the water and the base of the antenna at least 5 cm (2 in.) above the water, with the antenna in a vertical position completely above the water surface;

(11) Be ballasted to right itself from a position of 90 degrees from its upright position in one second or less;

(12) Meet the requirements of paragraphs (a) (1) through (9) of this section after a free fall into water 3 times from a height of 20 meters (66 ft.);

(13) Bear a designation that indicates it is a ''Class A'' EPIRB;

(14) Have a positive means of turning the equipment off. When an on-off switch is employed a guard must be provided to prevent inadvertent operation.

(b) Class A EPIRB's must have a manually activated test switch which

must be held in position for test operation and when released return the EPIRB to its normal state. A switch guard must be provided to prevent inadvertent activation. Class A EPIRB's must also have an associated test circuit and an RF output power indicator which in the test position must:

(1) Permit the operator to determine that the unit is operative;

(2) Switch the transmitter output to an artificial antenna equivalent to that of the EPIRB antenna;

(3) Reduce radiation to a level not to exceed 100 nanowatts at a distance of 30 meters (98 feet) irrespective of direction.

(c) EPIRBs manufactured on or after October 1, 1988, must be tested in accordance with subpart N, part 2 of this chapter. A report of the measurements must be submitted with each application for type acceptance. EPIRBs that meet the output power characteristics of this section must have a permanent label prominently displayed on the outer casting stating, ''Meets FCC Rules for improved satellite detection.'' This label, however, must not be placed on the equipment without authorization to do so by the Commission. Application for such authorization may be made either by submission of a new application for type acceptance accompanied by the required fee and all information and test data required by parts 2 and 80 of this chapter or, for EPIRBs type accepted prior to October 1, 1988, an application for modification accompanied by the required fee requesting such authorization, including appropriate test data and a showing that all units produced under the original type acceptance authorization comply with the requirements of this paragraph without change to the original circuitry. If the intent is simply to add the proper label to an already approved and compliant EPIRB, a letter of notification prior to implementing the labeling requirements will be needed. This letter request should be sent to the attention of the Authorization and Evaluation Division, 7435 Oakland Mills Road, Columbus, Maryland 21046, attention EAB. The modulation, power and frequency stability requirements specified in paragraphs (a)(6), (a)(7) and (a)(8) of this section must be met under the environmental test conditions specified in subpart N, part 2 of this chapter.

(d) Vacuum tubes are not permitted in EPIRB's. The equipment must meet the requirements after extended periods of inaction while carried in vessels and subjected to the environmental conditions prescribed. Operation into any RF load from open to short must not cause continuing degradation in performance.

(e) EPIRBs must be powered by a battery contained within the transmitter case or in a battery holder that is rigidly attached to the transmitter case. The battery connector must be corrosion resistant and positive in action and must not rely for contact upon spring force alone. The useful life of the battery is the length of time that the battery can be stored under marine environmental conditions without the EPIRB transmitter peak effective radiated power falling below 75 milliwatts prior to 48 hours of continuous operation. The month and year of the battery's manufacture must be permanently marked on the battery and the month and year upon which 50 percent of its useful life will have expired must be permanently marked on both the battery and the outside of the transmitter. The batteries must be replaced if 50 percent of their useful life has expired or if the transmitter has been used in an emergency situation. EPIRBs manufactured after April 27, 1992 must display prominently on the outer case one of the following: The battery installation instructions, the title of the manual that contains such information, or the company name and address where the battery installation can be performed.

(f) The EPIRB must be waterproof and must not be accidentally activated by rain, seaspray, hose wash-down spray or storage in high humidity conditions. Standing water on the outer surface must not significantly affect its performance.

(g) Operating instructions understandable by untrained personnel must be permanently displayed on the equipment.

(h) The exterior of the equipment must have no sharp edges or projections. Means must be provided to fasten the EPIRB to a survival craft or person.

(i) The antenna must be deployable to its designed length and operating position in a foolpoof manner. The antenna must be securely attached to the EPIRB and easy to de-ice. The antenna must be vertically polarized and omnidirectional.

[51 FR 31213, Sept. 2, 1986; 52 FR 35246, Sept. 18, 1987, as amended at 53 FR 8905, Mar. 18, 1988; 56 FR 11516, Mar. 19, 1991]

### § 80.1055 Special requirements for Class B EPIRB stations.

(a) A Class B EPIRB must meet the following:

(1) The EPIRB must be turned on automatically, as by water activated battery, or manually by an on-off switch. A positive means of turning the equipment off must be provided. Where an on-off switch is employed, a guard must be provided to prevent inadvertent operation;

(2) The equipment must be designed to be deployed, its controls actuated, or its antenna erected, each by a single action task which can be performed by either hand;

(3) Meet the requirements in §§ 80.1053(a) (4) through (8), (a)(14), and (c) through (i) of this part. EPIRBs with water activated batteries must, additionally, meet the requirements contained in §§ 80.1053 (a)(10) and (a)(11) of this part,

(4) Bear a designation that indicates it is a ''Class B'' EPIRB.

(b) A Class B EPIRB may have a manually activated test switch which meets the requirements in § 80.1053 (b) and (c).

(c) If testing of an EPIRB with Coast Guard coordination is not possible, brief operational tests are authorized provided the tests are conducted within the first five minutes of any hour and are not longer than three audio sweeps or one second whichever is longer.

[51 FR 31213, Sept. 2, 1986; 52 FR 35246, Sept. 18, 1987, as amended at 53 FR 8906, Mar. 18, 1988; 56 FR 11517, Mar. 19, 1991]

### § 80.1057 Special requirements for Class C EPIRB stations.

Class C EPIRB's shall not be manufactured, imported, or sold in the United States after February 1, 1995. Class C EPIRB stations installed on board vessels before February 1, 1995, may be used until February 1, 1999, and not thereafter.

(a) A Class C EPIRB must operate on the frequencies 156.750 and 156.800 MHz, must use G3N modulation, and employ the international Radiotelephone Two Tone Alarm signal. The EPIRB transmission must be cycled. Each cycle must consist of 6 periods (T1 to T6) as shown in the table below. During T1, T2, T3, and T5 the 156.750 MHz and 156.800 MHz carriers must be modulated alternately by a 2200 Hz and a 1300 Hz tone.

The modulating duration of each tone must be 250 milliseconds. The maximum tolerance of the frequency and modulating duration of each tone must be ±5 percent. During T4 and T6 neither of the RF carriers must be emitted. The T4 and T6 time periods must be varied according to the predetermined schedule shown in the table below. After the last cycle the transmissions must be terminated. The EPIRB must be able to recycle its transmissions in accordance to the schedule shown in the table below by placing the activation switch to the ''off' and then ''on'' position.

| Period | Duration in seconds | Transmission frequency in MHz |
|---|---|---|
| $T_1$ | 1.5 | 156.800 |
| $T_2$ | 14.5 | 156.750 |
| $T_3$ | 1.5 | 156.800 |
| $T_4$ | 40.0 (16 cycles) | None. |
| $T_4$ | 80.0 (32 cycles) | |
| $T_4$ | 160.0 (64.2 cycles) | |
| $T_4$ | 320.0 (83.2 cycles) | |
| $T_5$ | 14.5 | 156.750 |
| $T_6$ | Sames as $T_4$ duration | None. |

(b) The effective radiated power must not be less than 1 watt. The power must be determined according to FCC Bulletin OCE 45. The EPIRB must meet the power requirements over each of the following temperature ranges for the time period shown below. Batteries may be replaced after completion of tests for each temperature range:

(1) 0 to +50 degrees Celsius for 24 hours continuous operation.

(2) −20 to 0 degrees Celsius for 12 hours continuous operation.

(c) The equipment must have a transmitter, an integral antenna and a power supply. The transmitter and power supply must be in separate compartments in a single watertight case.

(d) The equipment must be provided with a visible or audible indicator which clearly shows the device is operating. The indicator must be activated by the RF output power.

(e) The equipment must operate when hand held or when floating in water after storage for extended periods under marine environmental conditions.

(f) The switch used to activate the EPIRB must indicate the state of the equipment (on-off) by the physical position of the switch. A guard must be provided to prevent inadvertent operation.

(g) The equipment case must be waterproof and resealable without special tools or sealing compounds. EPIRB operation must not be degraded by submersion in sea water for a period of 24 hours.

(h) The EPIRB must float in fresh water with the antenna vertical and completely out of the water.

(i) Vacuum tubes are not permitted in EPIRB's. The EPIRB must meet the requirements after extended periods of inaction while carried in vessels and subjected to marine environmental conditions. Operation into any load from open to short must not result in continuous degradation of performance.

(j) The exterior of the equipment must have no sharp edges or projections. Means must be provided to secure the EPIRB to a survival craft or person.

(k) Operating instructions understandable by untrained personnel must be permanently displayed on the equipment. It must indicate that the device is ''to be used solely for distress purposes.''

(l) The equipment must have no exposed areas or terminals that could ignite flammable gases or materials.

(m) The omndirectional antenna must be securely attached to the case and capable of being stowed without being damaged.

(n) The equipment must meet the technical standards after being dropped into water from a height of 6 meters (20 feet).

(o) The EPIRB must meet the technical standards when plunged into sea water at +20 degrees Celsius after storage at a temperature of +50 degrees Celsius.

(p) If testing of an EPIRB with Coast Guard coordination is not possible, brief operational tests are authorized provided the tests are conducted within the first five minutes of any hour for not more than 10 seconds.

(q) The EPIRB must automatically turn off after 24 hours ±5 percent. It must be possible to restart the transmission sequence by placing the on-off switch momentarily in the off position and returning it to the on position.

(r) The EPIRB must be equipped with a visual indication of a low battery condition.

(s) The EPIRB must have a designation that indicates it is a ''Class C'' EPIRB.

[51 FR 31213, Sept. 2, 1986, as amended at 58 FR 33344, June 17, 1993]

### §80.1059 Special requirements for Class S EPIRB stations.

(a) A Class S EPIRB station must be able to float or be permanently secured to a survival craft.

(b) A Class S EPIRB able to float must meet the following:

(1) Be watertight and float in calm water with at least 5 cm (2 in.) of the EPIRB out of the water and the base of the antenna at least 5 cm (2 in.) above the water, with the antenna in a vertical position completely above the water surface;

(2) Be ballasted to right itself from a position 90 degrees from its upright position in one second or less;

(3) Meet the requirements in §80.1053 (a)(4) through (9) after free fall into water 3 times from a height of 20 meters (67 ft.).

(c) A Class S EPIRB intended to be permanently secured to a survival craft is not required to float in water.

(d) Additionally, all Class S EPIRB's must meet the following:

(1) Be capable only of manual activation by an on-off switch protected by a guard to prevent inadvertent operation;

(2) Be designed to be deployed, its controls actuated, or its antenna erected, each by a single action task which can be performed by either hand;

(3) Meet the requirements in §§ 80.1053 (a)(4) through (a)(8) and (b) through (i) of this part;

(4) Class S EPIRBs may provide either continuous or intermittent operation. If the EPIRB is designed for intermittent operation, the duty cycle must be from 50 to 60 per cent and the period two minutes plus or minus 12 seconds. In either event, the EPIRB must meet the power output characteristics described in § 80.1053(a)(8) of this part;

(5) If testing of an EPIRB with Coast Guard coordination is not possible, brief operational tests are authorized provided the tests are conducted within the first five minutes of any hour and are not longer than three audio sweeps or one second whichever is longer;

(6) Have a designation that indicates it is a ''Class S'' EPIRB.

(e) Applications for type acceptance must include a letter from the manufacturer stating that the EPIRB meets the requirements in paragraphs (b) and (d), or (c) and (d) of this section.

[51 FR 31213, Sept. 2, 1986, as amended at 56 FR 11517, Mar. 19, 1991]

### § 80.1061 Special requirements for 406.025 MHz EPIRBs.

(a) Notwithstanding the provisions in paragraph (b) of this section, 406.025 MHz EPIRBs must meet all the technical and performance standards contained in the Radio Technical Commission for Maritime Services document titled ''RTCM Recommended Standards for 406 MHz Satellite Emergency Position-Indicating Radiobeacons (EPIRBs)'' dated July 31, 1987, with editorial updates of December 31, 1987 (RTCM Recommended Standards). This RTCM document is incorporated by reference in accordance with 5 U.S.C. 552(a). The document is available for inspection at Commission headquarters in Washington, DC or may be obtained from the Radio Technical Commission for Maritime Services, Post Office Box 19087, Washington, DC 20036.

(b) The 406.025 MHz EPIRB must contain as an integral part a ''homing'' beacon operating only on 121.500 MHz that meets all the requirements described in the RTCM Recommended Standards document described in paragraph (a) of this section. The 121.500 MHz ''homing'' beacon must have a continuous duty cycle that may be interrupted during the transmission of the 406.025 MHz signal only. Additionally, at least 30 percent of the total power emitted during any transmission cycle must be contained within plus or minus 30 Hz of the carrier frequency.

(c) Prior to submitting a type acceptance application for a 406 MHz radiobeacon, the radiobeacon must be certified by a test facility recognized by one of the COSPAS/SARSAT Partners that the equipment satisfies the design characteristics associated with the measurement methods described in Appendix B of the RTCM Recommended Standards.

Additionally, the radiobeacon must be certified by a test facility recognized by the U.S. Coast Guard to certify that the equipment complies with the U.S. Coast Guard environmental and operational requirements associated with the test procedures described in Appendix A of the RTCM Recommended Standards. Information regarding the recognized test facilities may be obtained from Commandant (G–MVI), U.S. Coast Guard, 2100 2nd Street SW., Washington, DC 20593–0001.

(1) After a 406.025 MHz EPIRB has been certified by the recognized test facilities the following information must be submitted in duplicate to the Commandant (G–MVI), U.S. Coast Guard, 2100 2nd Street SW., Washington, DC 20593–0001:

(i) The name of the manufacturer or grantee and model number of the EPIRB;

(ii) Copies of the certificate and test data obtained from the test facility recognized by a COSPAS/SARSAT Partner showing that the radiobeacon complies with the COSPAS/SARSAT design characteristics associated with the measurement methods described in Appendix B of the RTCM Recommended Standards;

(iii) Copies of the test report and test data obtained from the test facility recognized by the U.S. Coast Guard showing that the radiobeacon complies

with the U.S. Coast Guard environmental and operational characteristics associated with the measurement methods described in Appendix A of the RTCM Recommended Standards; and

(iv) Instruction manuals associated with the radiobeacon, description of the test characteristics of the radiobeacon including assembly drawings, electrical schematics, description of parts list, specifications of materials and the manufacturer's quality assurance program.

(2) After reviewing the information described in paragraph (c)(1) of this section the U.S. Coast Guard will issue a letter stating whether the radiobeacon satisfies all RTCM Recommended Standards.

(d) A type acceptance application for a 406.025 MHz EPIRB submitted to the Commission must also contain a copy of the U.S. Coast Guard letter that states the radiobeacon satisfies all RTCM Recommended Standards, a copy of the technical test data, and the instruction manual(s).

(e) An identification code, issued by the National Oceanic and Atmospheric Administration (NOAA), the United States Program Manager for the 406.025 MHz COSPAS/SARSAT satellite system, must be programmed in each EPIRB unit to establish a unique identification for each EPIRB station. With each marketable EPIRB unit the manufacturer or grantee must include a postage pre-paid registration card printed with the EPIRB identification code addressed to: NOAA/NESDIS, SARSAT Operations Division, E/SP3, Federal Building 4, Washington, DC 20233. The registration card must request the owner's name, address, telephone number, type of ship, alternate emergency contact and include the following statement: ''WARNING—failure to register this EPIRB with NOAA before installation could result in a monetary forfeiture being issued to the owner.''

(f) To enhance protection of life and property it is mandatory that each 406.025 MHz EPIRB be registered with NOAA before installation and that information be kept up-to-date. Therefore, in addition to the identification plate or label requirements contained in §§2.925, 2.926 and 2.1003 of this chapter, each 406.025 MHz EPIRB must be provided on the outside with a clearly discernable permanent plate or label containing the following statement: ''The owner of this 406.025 MHz EPIRB must register the NOAA identification code contained on this label with the National Oceanic and Atmospheric Administration (NOAA) whose address is: NOAA, NOAA/SARSAT Operations Division, E/SP3, Federal Building 4, Washington, D.C. 20233.'' Vessel owners shall advise NOAA in writing upon change of vessel or EPIRB ownership, transfer of EPIRB to another vessel, or any other change in registration information. NOAA will provide registrants with proof of registration and change of registration postcards.

(g) For 406.025 MHz EPIRBs whose identification code can be changed after manufacture, the identification code shown on the plate or label must be easily replaceable using commonly available tools.

[53 FR 37308, Sept. 26, 1988, as amended at 56 FR 11517, Mar. 19, 1991; 59 FR 35269, July 11, 1994]

## Subpart W—Global Maritime Distress and Safety System (GMDSS)

SOURCE: 57 FR 9065, Mar. 16, 1992, unless otherwise noted.

This subpart contains the rules applicable to the Global Maritime Distress and Safety System (GMDSS). Every ship of the United States subject to part II of title III of the Communications Act or the Safety Convention must comply with the provisions of this subpart. The rules in this subpart are to be read in conjunction with the applicable requirements contained elsewhere in this part; however, in case of conflict, the provisions of this subpart shall govern with respect to the GMDSS. For the purposes of this subpart, distress and safety communications include distress, urgency, and safety calls and messages.

NOTE: No provision of this subpart is intended to eliminate, or in anyway modify, other requirements contained in this part with respect to part II of title III of the Communications Act.

GENERAL PROVISIONS

### § 80.1065 Applicability.

(a) The regulations contained in § 80.1119 apply to public coast stations and coast earth stations as of February 1, 1992.

(b) The regulations contained within this subpart apply to all passenger ships regardless of size and cargo ships of 300 tons gross tonnage and upwards as follows:

(1) Ships must comply with §§ 80.1085(a)(4) and 80.1085(a)(6) not later than August 1, 1993.

(2) Ships constructed on or after February 1, 1992, must comply with § 80.1095 as of that date. All other ships must comply with § 80.1095 as of February 1, 1995.

(3) Ships constructed on or after February 1, 1995, must comply with all requirements of this subpart.

(4) Ships constructed before February 1, 1995, must comply with all requirements of this subpart as of February 1, 1999.

(5) During the period between February 1, 1992, and February 1, 1999, all ships must comply with:

(i) The requirements of this subpart;

(ii) The requirements of chapter IV of the International Convention for the Safety of Life at Sea, 1974, in force prior to February 1, 1992 (see subparts Q and R of this part); or

(iii) The requirements of either § 80.836 or § 80.933.

(6) The expression ''ships constructed'' means ''ships the keels of which are laid, or construction identificable with a specific ship begins and assembly of that ship has commenced comprising at least 50 tons gross tonnage or 1% of the estimated mass of all structural material, whichever is less.

(c) The requirements of this subpart do not modify the requirements for ships navigated on the Great Lakes or small passenger boats. The requirements contained in the Agreement Between the United States of America and Canada for Promotion of Safety on the Great Lakes by Means of Radio, 1973, continue to apply (see subpart T of this part). The requirements contained in part III of title III of the Communications Act continue to apply (see subpart S of this part).

(d) No provision in this subpart is intended to prevent the use by any ship, survival craft, or person in distress, of any means at their disposal to attract attention, make known their position and obtain help.

[57 FR 9065, Mar. 16, 1992, as amended at 60 FR 58245, Nov. 27, 1995; 60 FR 62927, Dec. 7, 1995]

### § 80.1067 Inspection of station.

(a) Ships must have the required equipment inspected at least once every 12 months. If the ship is in compliance with the requirements of the Safety Convention, a Safety Certificate will be issued; if in compliance with the Communications Act, the license will be endorsed accordingly. The effective date of the ship safety certificate is the date the station is found to be in compliance or not later than one business day later.

(b) Certificates issued in accordance with the Safety Convention must be posted in a prominent and accessible place on the ship.

### § 80.1069 Maritime sea areas.

(a) For the purpose of this subpart, a ship's area of operation is defined as follows:

(1) *Sea area A1.* An area within the radiotelephone coverage of at least one VHF coast station in which continuous DSC alerting is available as defined by the International Maritime Organization.

(2) *Sea area A2.* An area, excluding sea area A1, within the radiotelephone coverage of at least one MF coast station in which continuous DSC alerting is available as defined by the International Maritime Organization.

(3) *Sea area A3.* An area, excluding sea areas A1 and A2, within the coverage of an INMARSAT geostationary satellite in which continuous alerting is available.

(4) *Sea area A4.* An area outside sea areas A1, A2 and A3.

(b) Maritime sea areas are delineated in the International Maritime Organization Publication GMDSS Master Plan of Shore-Based Facilities. The Master Plan can be purchased from the International Maritime Organization, 4

Albert Embankment, London SE1 7SR, United Kingdom.

**§80.1071 Exemptions.**

(a) In certain circumstances, partial or conditional exemptions may be granted to individual ships from the requirements of §§80.1085, 80.1087, 80.1089, 80.1091, and 80.1093 provided: such ships comply with the functional requirements of §80.1081 and a showing is made that such an exemption will not have a material effect upon the general efficiency of the service for the safety of all ships.

(b) An exemption may be granted under paragraph (a) of this section only:

(1) If the conditions affecting safety are such as to render the full application of §§80.1085, 80.1087, 80.1089, 80.1091, and 80.1093 unreasonable or unnecessary or otherwise not in the public interest;

(2) In exceptional circumstances, for a single voyage outside the sea area or sea areas for which the ship is equipped; or

(3) Prior to February 1, 1999, when the ship will be taken permanently out of service within two years of a requirement date specified in §80.1065.

**§80.1073 Radio operator requirements for ship stations.**

(a) Ships must carry at least two persons holding GMDSS Radio Operator's Licenses as specified in §13.2 of this chapter for distress and safety radiocommunications purposes. The GMDSS Radio Operator's License qualifies personnel as GMDSS radio operator for the purposes of operating GMDSS radio installation, including basic equipment adjustments as denoted in knowledge requirements specified in §13.21 of this chapter.

(1) One of the qualified GMDSS radio operators must be designated to have primary responsiblility for radiocommunications during distress incidents.

(2) A second qualified GMDSS radio operator must be designated as backup for distress and safety radiocommunications.

(b) A qualified GMDSS radio operator, and a qualified backup, as specified in paragraph (a) of this section must be:

(1) Available to act as the dedicated radio operator in cases of distress as described in §80.1109(a);

(2) Designated to perform as part of normal routine each of the applicable communications described in §80.1109(b);

(3) Responsible for selecting HF DSC guard channels and receiving scheduled maritime safety information broadcasts;

(4) Designated to perform communications described in §80.1109(c);

(5) Responsible for ensuring that the watches required by §80.1123 are properly maintained; and

(6) Responsible for ensuring that the ship's navigation position is entered, either manually or automatically through a navigation receiver, into all installed DSC equipment at least every four hours while the ship is underway.

**§80.1074 Radio maintenance personnel for at-sea maintenance.**

(a) Ships that elect the at-sea option for maintenance of GMDSS equipment (see §80.1105) must carry at least one person who qualifies as a GMDSS radio maintainer, as specified in paragraph (b) of this section, for the maintenance and repair of equipment specified in this subpart. This person may be, but need not be, the person designated as GMDSS radio operator as specified in §80.1073.

(b) The following licenses qualify personnel as GMDSS radio maintainers to perform at-sea maintenance of equipment specified in this subpart. For the purposes of this subpart, no order is intended by this listing or the alphanumeric designator.

(1) T–1: First Class Radiotelegraph Operator's Certificate;

(2) T–2: Second Class Radiotelegraph Operator's Certificate;

(3) G: General Radiotelephone Operator License.

(c) While at sea, all adjustments of radio installations, servicing, or maintenance of such installations that may affect the proper operation of the GMDSS station must be performed by, or under the immediate supervision and responsibility of, a qualified

GMDSS radio maintainer as specified in paragraph (b) of this section.

(d) The GMDSS radio maintainer must possess the knowledge covering the requirements set forth in IMO Assembly on Training for Radio Personnel (GMDSS), Annex 5 and IMO Assembly on Radio Maintenance Guidelines for the Global Maritime Distress and Safety System related to Sea Areas A3 and A4.

### § 80.1075 Radio records.

A record must be kept, as required by the Radio Regulations and § 80.409 (a), (b) and (e), of all incidents connected with the radiocommunication service which appear to be of importance to safety of life at sea.

### § 80.1077 Frequencies.

The following table describes the frequencies used in the Global Maritime Distress and Safety System:

| | |
|---|---|
| Alerting: | |
| 406 EPIRBs | 406–406.1 MHz (Earth-tospace). 1544–1545 MHz (space-to-Earth). |
| INMARSAT A or C SES. | 1626.5–1645.5 MHz (Earth-to-space). |
| VHF DSC Ch. 70. | 156.525 MHz [1]. |
| MF/HF DSC [2] | 2187.5 kHz [3], 4207.5 kHz, 6312 kHz, 8414.5 kHz, 12577 kHz, and 16804.5 kHz. |
| On-scene communications: | |
| VHF Ch. 16 | 156.8 MHz. |
| MF radiotelephony. | 2182 kHz. |
| NBDP | 2174.5 kHz. |
| Communications involving aircraft: | |
| On-scene, including search and rescue. | 156.8 MHz [4], 121.5 MHz [5], 123.1 MHz, 156.3 MHz, 2182 kHz, 3023 kHz, 4125 kHz, and 5680 kHz [6]. |
| Locating signals: | |
| 406 MHz EPIRB beacons. | 121.5 MHz. |
| 9 GHz radar transponders. | 9200–9500 MHz. |
| Maritime safety information (MSI): | |
| International NAVTEX. | 518 kHz [7]. |
| Warnings | 490 kHz [8], 4209.5 kHz [9]. |
| NBDP | 4210 kHz, 6314 kHz, 8416.5 kHz, 12579 kHz, 16806.5 kHz, 19680.5 kHz, 22376 kHz, 26100.5 kHz. |
| Satellite | 1530–1545 MHz (space-to-Earth) [10]. |
| General distress and safety communications and calling: | |
| Satellite | 1530–1544 MHz (space-to-Earth) and 1626.5–1645.5 (Earth-to-space) [10]. |
| Radiotelephony. | 2182 kHz, 4125 kHz, 6215 kHz, 8291 kHz, 12290 kHz, 16420 kHz, and 156.8 MHz. |
| NBDP | 2174.5 kHz, 4177.5 kHz, 6268 kHz, 8376.5 kHz, 12520 kHz, and 16695 kHz. |
| DSC | 2187.5 kHz, 4207.5 kHz, 6312 kHz, 8414.5 kHz, 12577 kHz, 16804.5 kHz, and 156.525 MHz. |
| Survival craft: | |
| VHF radiotelephony. | 156.8 MHz and one other 156–174 MHz frequency. |
| 9 GHz radar transponders. | 9200–9500 MHz. |

[1] Frequency 156.525 MHz can be used for ship-to-ship alerting and, if within sea area A1, for ship-to-shore alerting.

[2] For ships equipped with MF/HF equipment, there is a watch requirement on 2187.5 kHz, 8414.5 kHz, and one other frequency.

[3] Frequency 2187.5 kHz can be used for ship-to-ship alerting and, if within sea areas A2, for ship-to-shore alerting.

[4] Frequency 156.8 MHz may also be used by aircraft for safety purposes only.

[5] Frequency 121.5 MHz may be used by ships for aeronautical distress and urgency purposes.

[6] The priority of use for ship-aircraft communications in 4125 kHz, then 3023 kHz. Additionally, frequencies 123.1 MHz, 3023 kHz, and 5680 kHz can be used by land stations engaged in coordinated search and rescue operations.

[7] The international NAVTEX frequency 518 kHz is the primary frequency for receiving maritime safety information. The other frequencies are used only to augment the coverage or information provided on 518 kHz.

[8] Frequency 490 kHz cannot be used for MSI employing NBDP transmissions until February 2, 1999.

[9] Frequency 4209.5 kHz is not used in the United States (see 47 CFR 2.106 footnote 520A).

[10] In addition to EPIRBs, 1544–1545 MHz can be used for narrowband distress and safety operations and 1645.5–1646.5 MHz can be used for relay of distress alerts between satellites. Feeder links for satellite communications are assigned from the fixed satellite service, see 47 CFR 2.106.

## EQUIPMENT REQUIREMENTS FOR SHIP STATIONS

### § 80.1081 Functional requirements.

Ships, while at sea, must be capable:

(a) Except as provided in §§ 80.1087(a)(1) and 80.1091(a)(4)(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) Of transmitting and receiving general radiocommunications to and from shore-based radio sytsems or networks; and

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

**§80.1083 Ship radio installations.**

(a) Ships must be provided with radio installations capable of complying with the functional requirements prescribed by §80.1081 throughout its intended voyage and, unless exempted under §80.1071, complying with the requirements of §80.1085 and, as appropriate for the sea area of areas through which it will pass during its intended voyage, the requirements of either §§80.1087, 80.1089, 80.1091, or 80.1093.

(b) The radio installation must:

(1) 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;

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

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

(4) 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

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

(c) 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 should be available to permit radiocommunications from the wings of the navigating bridge. Portable VHF equipment may be used to meet the latter provision.

**§80.1085 Ship radio equipment—General.**

This section contains the general equipment requirements for all ships subject to this subpart.

(a) Ships must be provided with:

(1) A VHF radio installation capable of transmitting and receiving:

(i) DSC on the frequency 156.525 MHz (channel 70), and it must be able 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);

(2) A dedicated, non-scanning radio installation capable of maintaining a continuous DSC watch on VHF channel 70 which may be separate from, or combined with, that required by paragraph (a)(1)(i) of this section;

(3) A radar transponder capable of operating in the 9 GHz band, which must be stowed so that it is easily utilized (this transponder may be one of those required by §80.1095(b) for a survival craft);

(4) A receiver capable of receiving international NAVTEX service broadcasts;

(5) If the ship is engaged on voyages in any area of INMARSAT coverage in which an international NAVTEX service is not provided, a radio facility for reception of maritime safety information by the INMARSAT enhanced group calling system, *i.e.*, SafetyNet, (this requirement does not apply to ships engaged exclusively on voyages in areas where an HF direct-printing telegraphy maritime safety information service, as identified by the IMO

GMDSS Master Plan Publication, is provided and the ship is fitted with equipment capable of receiving such service); and

(6) A satellite emergency position-indicating radio beacon (satellite EPIRB) which must be:

(i) Capable of transmitting a distress alert through the polar orbiting satellite service operating in the 406 MHz band (406 MHz EPIRB); and

(ii) Installed in an easily accessible position, ready to be manually released and capable of being carried by one person into a survival craft, capable of floating free if the ship sinks and of being automatically activated when afloat, and capable of being activated manually.

(b) Until February 1, 1999, all ships must be equipped with a radio installation consisting of a radiotelephone distress frequency 2182 kHz watch receiver prescribed by § 80.807. This requirement does not apply to ships constructed on or after February 1, 1997.

(c) Until February 1, 1999, all ships, except ships engaged on voyages in sea area A1 only, must be equipped with a device for generating the 2182 kHz radiotelephone alarm signal as prescribed by § 80.807. This requirement does not apply to ships constructed on or after February 1, 1997.

(d) Ships must carry the most recent edition of the IMO publication entitled *GMDSS Master Plan of Shore-Based Facilities.* Notice of new editions will be published in the FEDERAL REGISTER and copies may be obtained from: International Maritime Organization, 4 Albert Embankment, London SE1 7SR, United Kingdom.

[51 FR 31213, Sept. 2, 1986, as amended at 60 FR 50122, Sept. 28, 1995]

### § 80.1087 Ship radio equipment—Sea area A1.

This section contains the additional equipment requirements for ships that remain within sea area A1 at all times.

(a) In addition to meeting the requirements of § 80.1085, ships engaged on voyages exclusively in sea area A1 must be provided with a radio installation capable of initiating the transmission of ship-to-shore distress alerts from the position from which the ship is normally navigated, operating either:

(1) On VHF using DSC; or

(2) Through the polar orbiting satellite service on 406 MHz (this requirement may be fulfilled by the 406 MHz EPIRB, required by § 80.1085(a)(6), either by installing the 406 MHz EPIRB close to, or by allowing remote activation from, the position from which the ship is normally navigated); or

(3) On MF using DSC if the ship is engaged on voyages within coverage of MF coast stations equipped with DSC; or

(4) On HF using DSC; or

(5) Through the INMARSAT geostationary satellite service if within INMARSAT coverage. This requirement may be fulfilled by an INMARSAT ship earth station capable of two way communication.

(b) The VHF radio installation, required by § 80.1085(a)(1), must also be capable of transmitting and receiving general radiocommunications using radiotelephony.

### § 80.1089 Ship radio equipment—Sea areas A1 and A2.

This section contains the additional equipment requirements for ships that remain within sea areas A1 or A2 at all times. Ships fitting in accordance with this section satisfy the sea area A1 requirements denoted in § 80.1087.

(a) In addition to meeting the requirements of § 80.1085, ships engaged on voyages beyond sea area A1, but remaining within sea area A2, must be provided with:

(1) An MF radio installation capable of transmitting and receiving, for distress and safety purposes, on the frequencies:

(i) 2187.5 kHz using DSC; and

(ii) 2182 kHz using radiotelephony;

(2) A radio installation capable of maintaining a continuous DSC watch on the frequency 2187.5 kHz which may be separate from or combined with, that required by paragraph (a)(1)(i) of this section; and

(3) 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 406 MHz EPIRB required by §80.1085(a)(6), either by installing the 406 MHz EPIRB close to, or by allowing 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 if within INMARSAT coverage; this requirement may be fulfilled by an INMARSAT ship earth station.

(b) It must be possible to initiate transmission of distress alerts by the radio installations specified in paragraphs (a)(1) and (a)(3) of this section from the position from which the ship is normally navigated.

(c) Ships subject to this section must be capable of transmitting and receiving general radiocommunications using radiotelephony or direct-printing telegraphy by either:

(1) A radio installation operating on working frequencies in the bands between 1605–4000 kHz or between 4000–27500 kHz (this requirement may be fulfilled by the addition of this capability to the equipment required by paragraph (a)(1) of this section); or

(2) An INMARSAT ship earth station.

### §80.1091 Ship radio equipment—Sea areas A1, A2, and A3.

This section contains the additional equipment requirements for ships that remain within sea areas A1, A2, or A3 at all times. Ships fitting in accordance with this section satisfy the requirements denoted in §§80.1087 or 80.1089 for sea-areas A1 and A2. Ships fitting in accordance to this section have the option to comply with either the requirements of paragraph (a) or (b) of this section.

(a) In addition to meeting the requirements of §80.1085, ships subject to this section must be provided with:

(1) 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 alert, including those directed to specifically defined geographical areas;

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

(2) An MF radio installation capable of transmitting and receiving, for distress and safety purposes, on the frequencies:

(i) 2187.5 kHz using DSC; and

(ii) 2182 kHz using radiotelephony; and

(3) A radio installation capable of maintaining a continuous DSC watch on the frequency 2187.5 kHz which may be separate from or combined with that required by paragraph (a)(2)(i) of this section; and

(4) 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 406 MHz EPIRB required by §80.1085(a)(6), either by installing the 406 MHz EPIRB close to, or by allowing 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, by an additional ship earth station.

(b) In addition to meeting the requirements of §80.1085, ships subject to this section must be provided with:

(1) An MF/HF radio installation capable of transmitting and receiving on all distress and safety frequencies in the bands between 1605–27500 kHz using DSC, radiotelephony, and narrow-band direct-printing telegraphy; and

(2) Equipment capable of maintaining DSC watch on 2187.5 kHz, 8414.5 kHz and on at least one of the distress and safety DSC frequencies 4207.5 kHz, 6312 kHz, 12577 kHz, or 16804.5 kHz although it must be possible to select any of these DSC distress and safety frequencies at any time (this equipment may be separate from, or combined with, the equipment required by paragraph (b)(1) of this section); and

(3) 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 406 MHz EPIRB required by § 80.1085(a)(6), either by installing the 406 MHz EPIRB close to, or by allowing 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 an INMARSAT ship earth station).

(4) In addition, ships must be 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 1605–4000 kHz and between 4000–27500 kHz (this requirement may be fulfilled by the addition of this capability to the equipment required by paragraph (b)(1) of this section).

(c) It must be possible to initiate transmission of distress alerts by the radio installations specified in paragraphs (a)(1), (a)(2), (a)(4), (b)(1), and (b)(3) of this section from the position from which the ship is normally navigated.

### § 80.1093 Ship radio equipment—Sea areas A1, A2, A3, and A4.

This section contains the additional equipment requirements for ships that sail in all sea areas, *i.e.*, sea areas A1, A2, A3, and A4. Ships fitting in accordance with this section satisfy the requirements denoted in §§ 80.1087, 80.1089, and 80.1091 for sea areas A1, A2, and A3.

(a) In addition to meeting the requirements of § 80.1085, ships engaged on voyages in all sea areas must be provided with the radio installations and equipment required by § 80.1091(b), except that the equipment required by § 80.1091(b)(3)(ii) cannot be accepted as an alternative to that required by regulation § 80.1091(b)(3)(i), which must always be provided.

(b) Ships engaged on voyages in all sea areas also must comply with the requirements of § 80.1091(c).

### § 80.1095 Survival craft equipment.

(a) At least three two-way VHF radiotelephone apparatus must be provided on every passenger ship and on every cargo ship of 500 tons gross tonnage and upwards. At least two two-way VHF radiotelephone apparatus must be provided on every cargo ship of between 300–500 tons gross tonnage. Portable two-way VHF radiotelephones must be stowed in such locations that they can be rapidly placed in any survival craft other than liferafts required by Regulation III/26.1.4 of the SOLAS Convention. Alternatively, survival craft may be fitted with a fixed two-way VHF radiotelephone installation. Two-way VHF radiotelephone apparatus, portable or fixed, must conform to performance standards as specified in § 80.1101. Two-way VHF radiotelephone apparatus provided on board ships prior to February 1, 1992, and not complying fully with the performance standards specified in § 80.1101, may be used until February 1, 1999, provided it is compatible with approved two-way VHF radiotelephone apparatus.

(b) At least one radar transponder must be carried on each side of every passenger ship and every cargo ship of 500 tons gross tonnage and upwards. At least one radar transponder must be carried on every cargo ship of 300 tons gross tonnage and upwards but less than 500 tons gross tonnage. Such radar transponders must conform to performance standards as specified in § 80.1101. The radar transponders must be stowed in such locations that they can be rapidly placed in any survival craft other than liferafts required on cargo ships in forward and aft areas (see Regulation III/26.1.4 of the SOLAS Convention). Alternatively, one radar transponder must be stowed in each survival craft other than those required by Regulation III/26.1.4 of the SOLAS Convention. One of these radar transponders may be radar transponder required by § 80.1085(a)(3).

(c) Survival craft equipment must be tested at intervals not to exceed twelve months. For batteries used for survival craft equipment, the month and year of its manufacture must be permanently marked on the battery. Also, the month and year upon which 50 percent of its useful life will expire must be permanently marked on both the battery and the outside of the transmitter. Batteries must be replaced if 50 percent of their useful life has expired

or if the transmitter has been used in an emergency situation.

**§ 80.1099 Ship sources of energy.**

(a) There must 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 of energy for the radio installations.

(b) A reserve source of energy to supply radio installations must be provided on every ship 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 sources of energy must be capable of simultaneously operating the VHF radio installation required by § 80.1085(a)(1) and, as appropriate for the sea area or sea areas for which the ship is equipped, either the MF radio installation required by § 80.1089(a)(1), the MF/HF radio installation required by §§ 80.1091(a)(2)(i) or 80.1093(a), or the INMARSAT ship earth station required by § 80.1091(a)(1) and any of the additional loads mentioned in paragraphs (d), (e) and (h) of this section for a period of at least:

(1) One hour, on ships constructed on or after February 1, 1995;

(2) One hour, on ships constructed before February 1, 1995, if the emergency source of electrical power complies fully with all relevant requirements of SOLAS, Chapter II–1, Regulation 42 or 43 (as amended); or

(3) Six hours, on ships constructed before February 1, 1995, and on cargo ships of less than 500 tons gross tonnage, if the emergency source of electrical power is not provided or does not comply fully with all relevant requirements of SOLAS, Chapter II–1, Regulation 42 or 43 (as amended).

(c) The reserve sources of energy need not supply independent HF and MF radio installations at the same time. The reserve sources of energy must be independent of the propelling power of the ship and the ship's electrical system.

(d) Where, in addition to the VHF radio installation, two or more of the other radio installations, referred to in paragraph (b) of this section, can be connected to the reserve sources of energy, they must be capable of simultaneously supplying, for one hour, as specified in paragraph (b) of this section, the VHF radio installation and;

(1) All other radio installations which can be connected to the reserve sources of energy at the same time; or

(2) Whichever of the other radio installations will consume the most power, if only one of the other radio installations can be connected to the reserve sources of energy at the same time as the VHF radio installation.

(e) The reserve sources of energy may be used to supply the electrical lighting required by § 80.1083(b)(4).

(f) Where a reserve source of energy consists of a rechargeable accumulator battery or batteries:

(1) A means of automatically charging such batteries must be provided which must be capable of recharging them to minimum capacity requirements within 10 hours; and

(2) The capacity of the battery or batteries must be checked, using an appropriate method, at intervals not exceeding 12 months. These checks must be performed when the vessel is not at sea.

(g) The accumulator batteries which provide a reserve source of energy must be installed to ensure: The highest degree of service, a reasonable lifetime, reasonable safety; that the battery temperatures remain within the manufacturer's specifications whether under charge or idle; and that when fully charged, the batteries will provide at least the minimum required hours of operation under all weather conditions.

(h) If an uninterrupted input of information from the ship's navigational or other equipment to a radio installation required by this subpart is needed to ensure its proper performance, means must 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.

(i) An uninterruptible power supply or other means of ensuring a continuous supply of electrical power, within equipment tolerances, shall be provided to all GMDSS equipment that could be affected by normal variations and interruptions of ship's power.

**§ 80.1101 Performance standards.**

(a) The abbreviations used in this section are as follows:

(1) International Maritime Organization (IMO).

(2) International Telegraph and Telephone Consultative Committee (CCITT).

(3) International Electrotechnical Commission (IEC).

(4) International Organization for Standardization (ISO).

(5) International Radio Consultative Committee (CCIR).

(b) All equipment specified in this subpart must meet the general requirements for shipboard equipment listed in this paragraph, which are incorporated by reference.

(1) IMO Resolution A.694(17), ''General Requirements for Shipborne Radio Equipment Forming Part of the Global Maritime Distress and Safety System (GMDSS) and for Electronic Navigational Aids,'' adopted 6 November 1991.

(2) CCITT Recommendation E.161, ''Arrangement of Figures, Letters and Symbols on Telephones and Other Devices that Can Be Used for Gaining Access to a Telephone Network,'' 1989.

(3) CCITT Recommendation Q.11, ''Numbering Plan for the International Telephone Service,'' 1989.

(4) IEC Publication 92–101, ''Electrical Installations in Ships,'' Third Edition 1980 with amendments through 1984.

(5) IEC Publication 533, ''Electromagnetic Compatibility of Electrical and Electronic Installations in Ships,'' First Edition 1977.

(6) IEC Publication 945, ''Marine Navigational Equipment,'' First Edition 1988.

(7) ISO Standard 3791, ''Office Machines and Data Processing Equipment—Keyboard Layouts for Numeric Applications,'' First Edition 1976(E).

(c) The equipment specified in this subpart must also conform to the appropriate performance standards listed below which are incorporated by reference.

(1) *NAVTEX receivers*: (i) IMO Resolution A.525(13), ''Performance Standards for Narrow-band Direct Printing Telegraph Equipment for the Reception of Navigational and Meteorological Warnings and Urgent Information to Ships,'' adopted 17 November 1983.

(ii) CCIR Recommendation 540–2, ''Operational and Technical Characteristics for an Automated Direct-printing Telegraph System for Promulgation of Navigational and Meteorological Warnings and Urgent Information to Ships,'' 1990.

(2) *VHF radio equipment*: (i) IMO Resolution A.609(15), ''Performance Standards for Shipborne VHF Radio Installations Capable of Voice Communication and Digital Selective Calling,'' adopted 19 November 1987.

(ii) CCIR Recommendation 493–4, ''Digital Selective-calling System for use in the Maritime Mobile Service,'' 1990.

(3) *MF radio equipment*: (i) IMO Resolution A. 610(15), ''Performance Standards for Shipborne MF Radio Installations Capable of Voice Communication and Digital Selective Calling,'' adopted 19 November 1987.

(ii) CCIR Recommendation 493–4, ''Digital Selective-calling System for use in the Maritime Mobile Service,'' 1990.

(4) *MF/HF radio equipment:* (i) IMO Resolution A.613(15), ''Performance Standards for Shipborne MF/HF Radio Installations capable of Voice Communication, Narrow-band Direct Printing and digital Selective Calling,'' adopted 19 November 1987.

(ii) CCIR Recommendations 493–4, ''Digital Selective-calling System for use in the Maritime Mobile Service,'' 1990.

(iii) CCIR Recommendation 625–1, ''Direct-printing Telegraph Equipment Employing Automatic Identification in the Maritime Mobile Service,'' 1990. Equipment may conform to CCIR Recommendation 476–4, ''Direct-Printing Telegraph Equipment in the Maritime Mobile Service,'' 1986, in lieu of CCIR Recommendation 625–1, where such equipment was installed on ships prior to February 1, 1993.

(iv) IMO Resolution A.700(17), ''Performance Standards for Narrow-band Direct-printing Telegraph Equipment for the Reception of Navigational and Meteorological Warnings and Urgent Information to Ships (MSI) by HF,'' adopted 6 November 1991.

(5) *406 MHz EPIRBs:* (i) IMO Resolution A.611(15), ''Performance Standards for Float-free Satellite Emergency Position-indicating Radio Beacons Operating on 406 MHz,'' adopted 19 November 1987.

(ii) IMO Resolution A.662(16), ''Performance Standards for Float-free Release and Activation Arrangements for Emergency Radio Equipment,'' adopted 19 October 1989.

(iii) OCIR Recommendation 633–1, ''Transmission Characteristics of a Satellite Emergency Position-indicating Radiobeacon (Satellite EPIRB) System Operating Through a Low Polar-orbiting Satellite System in the 406 MHz Band,'' 1990.

(iv) The 406 MHz EPIRBs must also comply with § 80.1061.

(6) *9 GHz radar transponders:* (i) IMO Resolution A.604(15), ''Performance Standards for Survival Craft Radar Transponders for Use in Search and Rescue Operations,'' adopted 19 November 1987.

(ii) CCIR Recommendation 628–1, Technical Characteristics for Search and Rescue Radar Transponders,'' 1990.

(7) *Two-way VHF radiotelephone:* IMO Resolution A.605(15), ''Performance Standards for Survival Craft Two-way VHF Radiotelephone Apparatus,'' adopted 19 November 1987.

(8) *INMARSAT–A SES:* IMO Resolution A.698(17), ''Performance Standards for Ship Earth Stations Capable of Two-way Communications,'' adopted 6 November 1991.

(9) INMARSAT–C SES: IMO Resolution A.663(16), ''Performance Standards for INMARSAT Standard–C Ship Earth Stations Capable of Transmitting and Receiving Direct-printing Communications,'' adopted 19 October 1989.

(10) *INMARSAT EGC:* IMO Resolution A.664(16), ''Performance Standards for Enhanced Group Call Equipment,'' adopted 19 October 1989.

(d) The above-referenced documents have been approved for incorporation by reference by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Identification data and place to purchase for each of the above-reference documents are listed as follows:

(1) Copies of IMO Resolutions, the 1974 SOLAS Convention, and the 1983 and 1988 amendments to the 1974 SOLAS Convention can be purchased from Publications, International Maritime Organization, 4 Albert Embankment, London SE1 7SR, United Kingdom.

(i) IMO resolution A.525(13) is contained in the Resolutions and Other Decisions of the Assembly of the International Maritime Organization, 13th Session, 1983, (IMO, London, 1984), Sales Number 073 84.07.E.

(ii) IMO Resolutions A.604(15), A.605(15), A.610(15), A.611(15) and A.613(15) are contained in the Resolutions and Other Decisions of the Assembly of the International Maritime Organization, 15th Session, 1987, (IMO, London, 1988), Sales Number 130 88.03.E.

(iii) IMO Resolutions A.662(16), A.663(16) and A.664(16) are contained in the Resolutions and Other Decisions of the Assembly of the International Maritime Organization, 16th Session, 1989, (IMO, London, 1990), Sales Number 136 90.04.E

(iv) IMO Resolutions A.694(17), A.698(17), and A.700(17) can be ordered from IMO by requesting ''A.694, A.698, or A.700(17) from the seventeenth session.'' IMO Resolutions A.694(17), A.698(17), and A.700(17) will be published in the Resolutions and Other Decisions of the Assembly of the International Maritime Organization, 17th Session, 1991.

(2) CCIR Recommendations, ITU Radio Regulations, and CCITT publications can be purchased from the International Telecommunications Union (ITU), Place des Nations, CH–1211 Geneva 20, Switzerland.

(i) All CCIR Recommendations referenced in this section are contained in Recommendations of the CCIR, 1990, Volume VIII, (ITU, Geneva, 1990), 92–61–0424104.

(ii) CCITT Recommendation E.161 is contained in CCITT Volume II—Telephone and Network ISDN—Operation, Numbering, Routing and Mobile Service, (ITU, Geneva, 1989), ISBN 92–61–03261–3.

(iii) CCITT Recommendation Q.11 is contained in CCITT Blue Book Volume VI, General Recommendation on Telephone Switching and Signalling, (ITU, Geneva, 1989), ISBN 92–61–03451–9.

(3) IEC Publications can be purchased from the International Electrotechnical Commission, 3 Rue de Varembe, CH–1211 Geneva 20, Switzerland, or from the American National Standards Institute (ANSI), 11 West 42nd Street, New York, NY 10036, telephone (212) 642–4900.

(4) ISO Standards can be purchased from the International Organization for Standardization, 1 Rue de Varembe, CH–1211 Geneva 20, Switzerland, or from the American National Standards Institute (ANSI), 11 West 42nd Street, New York, NY 10036, telephone (212) 642–4900.

(5) Copies of the publications listed in this section that are incorporated by reference may be inspected at the Federal Communications Commission, 1919 M Street, NW., Dockets Branch (room 239), Washington, DC or at the Office of the Federal Register, 800 North Capital Street, NW., suite 700, Washington, DC.

[57 FR 44701, Sept. 29, 1992]

### § 80.1103 Equipment authorization.

(a) All equipment specified § 80.1101 must be type accepted in accordance with 47 CFR part 2 specifically for GMDSS use, except for equipment used in the INMARSAT space segment which must be type-approved by INMARSAT and notified in accordance with 47 CFR part 2 specifically for GMDSS use. The technical parameters of the equipment must conform to the performance standards as specified in § 80.1101. For emergency position-indicating radiobeacons operating on 406 MHz (406 MHz EPIRBs) that were authorized prior to April 15, 1992, and meet the requirements of § 80.1101, the manufacturer may attest by letter that the equipment (indicate FCC ID#) meets the requirements of § 80.1101 and request that it be denoted as approved for GMDSS use.

(b) Applicants for type acceptance must submit with their applications measurement data sufficiently complete to ensure compliance with the technical parameters. The application must include the items listed in 47 CFR 2.983. Additional measurement data or information may be requested depending upon the equipment. For items not listed in § 2.983 of this chapter, the applicant must attest that the equipment complies with performance standards as specified in § 80.1101 and, where applicable, that measurements have been made that demonstrate the necessary compliance. Submission of representative data demonstrating compliance is not required unless requested by the Commission.

(c) Applicants for notification must attest that the equipment complies with performance standards as specified in § 80.1101 and, where applicable, that measurements have been made that demonstrate the necessary compliance. Submission of representative data demonstrating compliance is not required unless requested by the Commission. An application must include the items listed in § 2.975 of this chapter and a copy of the INMARSAT type approval certificate indicating that equipment meets GMDSS standards and includes all peripheral equipment associated with the specific unit under review.

(d) Submission of a sample unit is not required unless specifically requested by the Commission.

(e) In addition to the requirements in part 2 of this chapter, equipment specified in § 80.1101 shall be labelled as follows: ''This device complies with the GMDSS provisions of part 80 of the FCC Rules.'' Such a label is not required for emergency position-indicating radiobeacons operating on 406 MHz (406 MHz EPIRBs) that were authorized prior to April 15, 1992.

[57 FR 9065, Mar. 16, 1992, as amended at 57 FR 44702, Sept. 29, 1992]

### § 80.1105 Maintenance requirements.

(a) Equipment must be so designed that the main units can be replaced readily, without elaborate recalibration or readjustment. Where applicable, equipment must be constructed and installed so that it is readily accessible for inspection and on-board maintenance purposes. Adequate information must be provided to enable the equipment to be properly operated and maintained (see IMO Resolution A.569(14)).

(b) Radio equipment required by this subpart must be maintained to provide the availability of the functional requirements specified in § 80.1081 and to

meet the performance standards specified in § 80.1101.

(c) On ships engaged on voyages in sea areas A1 and A2, the availability must be ensured by duplication of equipment, shore-based maintenance, or at-sea electronic maintenance capability, or a combination of these.

(d) On ships engaged on voyages in sea areas A3 and A4, the availability must be ensured by using a combination of at least two of the following methods: duplication of equipment, shore-based maintenance, or at-sea electronic maintenance capability.

(e) Irrespective of the maintenance methods used, a ship must not depart from any port unless and until the ship is capable of performing all distress and safety functions as specified in § 80.1081.

(f) Irrespective of the maintenance methods used, all manufacturers' instruction manuals and maintenance manuals for each piece of equipment required and installed must be available on-board ship. Adequate tools, spare parts, and test equipment appropriate to the methods used by the ship as recommended by the manufacturer should be provided. The manuals, tools, spare parts, and test equipment, as applicable, should be readily accessible.

(g) If the duplication of equipment maintenance method is used, the following radio installations, in addition to other equipment requirements specified in this subpart, must be available on-board ships for their sea areas as applicable. Equipment carried in accordance with this paragraph must comply with §§ 80.1101 and 80.1103. Additionally, each radio installation must be connected to a separate antenna and be installed and be ready for immediate operation.

(1) Ships, equipped in accordance with § 80.1087 for sea area A1, must carry a VHF radio installation complying with the requirements of § 80.1085(a)(1).

(2) Ships, equipped in accordance with § 80.1089 for sea areas A1 and A2, must carry a VHF radio installation complying with the requirements of § 80.1085(a)(1) and an MF radio installation complying with the requirements of § 80.1089(a)(1) and being able to fully comply with watch requirements as specified in § 80.1123(a)(2). The MF radio installation installed for duplication must also comply with the requirements § 80.1089(c).

(3) Ships, equipped in accordance with § 80.1091 for sea areas A1, A2, and A3, must carry a VHF radio installation complying with the requirements of § 80.1085(a)(1) and either an MF/HF radio installation complying with the requirements of § 80.1091(b)(1) and being able to fully comply with watch requirements as specified in § 80.1123(a)(2) or an INMARSAT ship earth station complying with the requirements of § 80.1091(a)(1). The MF/HF radio installation or the INMARSAT ship earth station installed for duplication must also comply with the requirements § 80.1091(c).

(4) Ships, equipped in accordance with § 80.1093 for sea areas A1, A2, A3, and A4, must carry a VHF radio installation complying with the requirement of § 80.1085(a)(1) and an MF/HF radio installation complying with the requirements of § 80.1091(b)(1) and being able to fully comply with watch requirements as specified in § 80.1123(a)(2). The MF/HF radio installation installed for duplication must also comply with the requirements § 80.1091(c).

(h) The radio installations specified in paragraph (g) of this section (referred as ''duplicated equipment''), in addition to the appropriate radio equipment specified in § 80.1099 (referred as ''basic equipment''), must be connected to the reserve sources of energy required by § 80.1099. The capacity of the reserve sources of energy should be sufficient to operate the particular installation (*i.e.*, the basic equipment or the duplicated equipment) with the highest power consumption, for the appropriate period specified in § 80.1099. However, the arrangement for the reserve sources of energy must be such that a single fault in this arrangement cannot affect both the basic and the duplicated equipment.

(i) If the shore-based maintenance method is used, the following requirements apply.

(1) Maintenance services must be completed and performance verified and noted in the ship's record before departure from the first port of call entered after any failure occurs.

(2) Each GMDSS equipment must be tested and performance verified and the results noted in the ship's record before departure from every port. To accomplish this, each ship shall carry a performance checkoff sheet listing each GMDSS equipment carried on a mandatory basis.

(j) If the at-sea maintenance method is used, the following requirements apply.

(1) Adequate additional technical documentation, tools, test equipment, and spare parts must be carried onboard ship to enable a qualified maintainer as specified in § 80.1074 to perform tests and localize and repair faults in the radio equipment.

(2) Only persons that comply with the requirements of § 80.1074 may perform at-sea maintenance on radio installations required by this subpart.

OPERATING PROCEDURES FOR DISTRESS AND SAFETY COMMUNICATIONS

**§ 80.1109 Distress, urgency, and safety communications.**

(a) Distress traffic consists of all messages relating to the immediate assistance required by the ship in distress, including search and rescue communications and on-scene communications. Distress traffic must as far as possible be on the frequencies contained in § 80.1077.

(b) Urgency and safety communications include: navigational and meteorological warnings and urgent information; ship-to-ship safety navigation communications; ship reporting communications; support communications for search and rescue operations; other urgency and safety messages and communications relating to the navigation, movements and needs of ships and weather observation messages destined for an official meteorological service.

(c) Intership navigation safety communications are those VHF radiotelephone communications conducted between ships for the purpose of contributing to the safe movement of ships. The frequency 156.650 MHz is used for intership navigation safety communications (see § 80.1077).

**§ 80.1111 Distress alerting.**

(a) The transmission of a distress alert indicates that a mobile unit or person is in distress and requires immediate assistance. The distress alert is a digital selective call using a distress call format in bands used for terrestrial radiocommunication or a distress message format, which is relayed through space stations.

(b) The distress alert must be sent through a satellite either with absolute priority in general communication channels or on exclusive distress and safety frequencies or, alternatively, on the distress and safety frequencies in the MF, HF, and VHF bands using digital selective calling.

(c) The distress alert must be sent only on the authority of the person responsible for the ship, aircraft or other vehicle carrying the mobile station or the mobile earth station.

(d) All stations which receive a distress alert transmitted by digital selective calling must immediately cease any transmission capable of interfering with distress traffic and must continue watch until the call has been acknowledged.

**§ 80.1113 Transmission of a distress alert.**

(a) The distress alert must identify the station in distress and its position. The distress alert may also contain information regarding the nature of the distress, the type of assistance required, the course and speed of the mobile unit, the time that this information was recorded and any other information which might facilitate rescue.

(b) The format of distress calls and distress messages must be in accordance with CCIR Recommendation 493 as specified in § 80.1101.

(c) Ship-to-shore distress alerts are used to alert Rescue Coordination Centers via coast stations or coast earth stations that a ship is in distress. These alerts are based on the use of transmissions via satellites (from a ship earth station or a satellite EPIRB) and terrestrial services (from ship stations and EPIRBs).

(d) Ship-to-ship distress alerts are used to alert other ships in the vicinity of the ship in distress and are based on

the use of digital selective calling in the VHF, MF, and HF bands.

(e) Shore-to-ship distress alert relays are used by a station or Rescue Coordination Center to relay information about a ship in distress to, as appropriate, all ships, a selected group of ships, or a specific ship by satellite and/or terrestrial means. The distress alert relay must contain the identification of the mobile unit in distress, its position and all other information which might facilitate rescue.

**§80.1115 Transmission of a distress alert by a station not itself in distress.**

(a) A station in the mobile or mobile-satellite service which learns that a mobile unit is in distress must initiate and transmit a distress alert relay in any of the following cases:

(1) When the mobile unit in distress is not itself in a position to transmit the distress alert; or

(2) When the master or person responsible for the mobile unit not in distress or the person responsible for the land station determines that further help is necessary.

(b) A station transmitting a distress alert relay in accordance with paragraph (a) of this section or §80.1121(c) must indicate that it is not itself in distress.

**§80.1117 Procedure for receipt and acknowledgement of distress alerts.**

(a) Acknowledgement by digital selective calling of receipt of a distress alert in the terrestrial services must comply with CCIR Recommendation 541, which is incorporated by reference.

(b) Acknowledgement through a satellite of receipt of a distress alert from a ship earth station must be sent immediately (see §80.1119).

(c) Acknowledgement by radiotelephony of receipt of a distress alert from a ship station or a ship earth station must be given in the following form:

(1) The distress signal MAYDAY;

(2) The call sign or other identification of the station sending the distress message, spoken three times;

(3) The words THIS IS (or DE spoken as DELTA ECHO in case of language difficulties);

(4) The call sign or other identification of the station acknowledging receipt, spoken three times;

(5) The word RECEIVED (or RRR spoken as ROMEO ROMEO ROMEO in case of language difficulties);

(6) The distress signal MAYDAY.

(d) The acknowledgement by direct-printing telegraphy of receipt of a distress alert from a ship station must be given in the following form:

(1) The distress signal MAYDAY;

(2) The call sign or other identification of the station sending the distress alert;

(3) The word DE;

(4) The call sign or other identification of the station acknowledging receipt of the distress alert;

(5) The signal RRR;

(6) The distress signal MAYDAY.

(e) The acknowledgement by direct-printing telegraphy of receipt of a distress alert from a ship earth station must be given by the coast earth station receiving the distress alert by retransmitting the ship station identity of the ship transmitting the distress alert.

**§80.1119 Receipt and acknowledgement of distress alerts by coast stations and coast earth stations.**

(a) Coast stations that receive a distress alert should defer acknowledgement for a short interval so that receipt may be acknowledged by a Rescue Coordination Center. Where an acknowledgement is not forthcoming within 3 minutes, the coast station in receipt of distress alerts must ensure that they are routed to a Rescue Coordination Center as soon as possible. Coast stations must provide assistance for distress communications when requested to do so by the U.S. Coast Guard. (This subpart does not specify any radio watches for coast stations.)

(b) Coast earth stations in receipt of distress alerts must ensure that they are routed as soon as possible to a Rescue Coordination Center. Coast earth stations must relay, as soon as possible, an acknowledgement of a distress alert from a Rescue Coordination Center.

(c) Certain messages must be carried without charge, regardless of the means by which they are transmitted:

(1) Distress alert messages;

(2) Search and rescue coordination messages;

(3) Medical assistance messages where an imminent danger to life is present, or

(4) Urgent meteorological or navigational danger messages passed in the ship-to-shore direction.

**§ 80.1121 Receipt and acknowledgement of distress alerts by ship stations and ship earth stations.**

(a) Ship or ship earth stations that receive a distress alert must, as soon as possible, inform the master or person responsible for the ship of the contents of the distress alert.

(b) In areas where reliable communications with one or more coast stations are practicable, ship stations in receipt of a distress alert should defer acknowledgement for a short interval so that receipt may be acknowledged by a coast station.

(c) Ship stations operating in areas where reliable communications with a coast station are not practicable that receive a distress alert from a ship station which is, beyond doubt, in their vicinity, must, as soon as possible and if appropriately equipped, acknowledge receipt and inform a Rescue Coordination Center through a coast station or coast earth station (see § 80.1115(a)(2)). However, a ship station receiving an HF distress alert must not acknowledge it but must observe the requirements of § 80.1123, and must, if the alert is not acknowledged by a coast station within 3 minutes, relay the distress alert.

(d) A ship station acknowledging receipt of a distress alert in accordance with paragraphs (b) or (c) of this section should:

(1) Acknowledge receipt of the alert by using radiotelephony on the distress and safety traffic frequency in the band used for the alert;

(2) If acknowledgement by radiotelephony of the distress alert received on the MF or VHF distress alerting frequency is unsuccessful, acknowledge receipt of the distress alert by responding with a digital selective call on the appropriate frequency.

(e) A ship station in receipt of a shore-to-ship distress alert relay (see § 80.1113(e)) should establish communication as directed and render such assistance as required and appropriate.

**§ 80.1123 Watch requirements for ship stations.**

(a) While at sea, all ships must maintain a continuous watch:

(1) On VHF DSC channel 70, if the ship is fitted with a VHF radio installation in accordance with § 80.1085(a)(2);

(2) On the distress and safety DSC frequency 2187.5 kHz, if the ship is fitted with an MF radio installation in accordance with §§ 80.1089(a)(2) or 80.1091(a)(3);

(3) On the distress and safety DSC frequencies 2187.5 kHz and 8414.5 kHz also on at least one of the distress and safety DSC frequencies 4207.5 kHz, 6312 kHz, 12577 kHz, or 16804.5 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 §§ 80.1091(a)(2)(ii) or 80.1093(a) of this part (this watch may be kept by means of a scanning receiver limited to six distress and safety DSC frequencies); and

(4) For satellite shore-to-ship distress alert, if the ship is fitted with an INMARSAT ship earth station in accordance with § 80.1091(a)(1).

(b) While at sea, all ships must maintain radio watches 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.

(c) Until February 1, 1999, every ship while at sea must maintain, when practicable, a continuous listening watch on VHF Channel 16. This watch must be kept at the position from which the ship is normally navigated or at a position which is continuously manned.

(d) Until February 1, 1999, every ship required to carry a radiotelephone watch receiver must maintain, while at sea, a continuous watch on the radiotelephone distress frequency 2182 kHz. This watch must be kept at the position from which the ship is normally navigated or at a position which is continuously manned.

(e) On receipt of a distress alert transmitted by use of digital selective

calling techniques, ship stations must set watch on the radiotelephone distress and safety traffic frequency associated with the distress and safety calling frequency on which the distress alert was received.

(f) Ship stations with narrow-band direct printing equipment must set watch on the narrow-band direct-printing frequency associated with the distress alert signal if it indicates that narrow-band direct-printing is to be used for subsequent distress communications. If practicable, they should additionally set watch on the radiotelephone frequency associated with the distress alert frequency.

**§ 80.1125 Search and rescue coordinating communications.**

(a) The distress signal consists of the word MAYDAY, pronounced in radiotelephony as the French expression ''M'aider''. For distress traffic by radiotelephony, when establishing communications, calls must be prefixed by the distress signal MAYDAY.

(b) Error correction techniques, in accordance with CCIR Recommendation 625 as specified in § 80.1101, must be used for distress traffic by direct-printing telegraphy. All messages must be preceded by at least one carriage return, a line feed signal, a letter shift signal and the distress signal MAYDAY.

(c) Distress communications by direct-printing telegraphy should be in the ARQ mode when ships are communicating directly to the Coast Guard or other coast stations on channels which they normally guard. Other distress communications, including those on simplex channels provided for that purpose, should be in the broadcast forward error correction mode. The ARQ mode may subsequently be used when it is advantageous to do so.

(d) The Rescue Coordination Center responsible for controlling a search and rescue operation will also coordinate the distress traffic relating to the incident or may appoint another station to do so.

(e) The Rescue Coordination Center coordinating distress traffic, the unit coordinating search and rescue operations, or the coast station involved may impose silence on stations which interfere with that traffic. This instruction may be addressed to all stations or to one station only, according to circumstances. In either case, the following will be used:

(1) In radiotelephony, the signal SEELONCE MAYDAY, pronounced as the French expression ''silence, m'aider'';

(2) In narrow-band direct-printing telegraphy normally using forward-error correcting mode, the signal SILENCE MAYDAY. However, the ARQ mode may be used when it is advantageous to do so.

(f) Until they receive the message indicating that normal working may be resumed (see paragraph (h) of this section), all stations which are aware of the distress traffic, and which are not taking part in it, and which are not in distress, are forbidden to transmit on the frequencies in which the distress traffic is taking place.

(g) Stations following distress traffic that are able to continue normal service may do so when the distress traffic is well established and on condition that it observes the provisions of paragraph (f) of this section and that it does not interfere with distress traffic.

(h) When distress traffic has ceased on frequencies which have been used for distress traffic, the Rescue Coordination Center controlling a search and rescue operation must initiate a message for transmission on these frequencies indicating that distress traffic has finished.

(i) In radiotelephony, the message referred to in paragraph (h) of this section consists of:

(1) The distress signal MAYDAY;

(2) The call ''Hello all stations'' or CQ (spoken as CHARLIE QUEBEC) spoken three times;

(3) The words THIS IS (or DE spoken as DELTA ECHO in the case of language difficulties);

(4) The call sign or other identification of the station sending the message;

(5) The time when the distress situation has ceased;

(6) The name and call sign of the mobile station which was in distress;

(7) The words SEELONCE FEENEE pronounced as the French words ''silence fini''

(j) In direct-printing telegraphy, the message referred to in paragraph (h) of this section consists of:

(1) The distress signal MAYDAY;

(2) The call CQ;

(3) The word DE;

(4) The call sign or other identification of the station sending the message;

(5) The time when distress situation has ceased;

(6) The name and call sign of the mobil station which was in distress; and

(7) The words SILENCE FINI.

**§ 80.1127 On-scene communications.**

(a) On-scene communications are those between mobile unit in distress and assisting mobile units, and between the mobile units and unit coordinating search and rescue operations.

(b) Control of on-scene communications is the responsibility of the unit coordinating search and rescue operations. Simplex communications must be used so that all on-scene mobile stations may share relevant information concerning the distress incident. If direct-printing telegraphy is used, it must be in the forward error-correcting mode in accordance with CCIR Recommendation 625 as specified in § 80.1101.

(c) The preferred frequencies in radiotelephony for on-scene communications are 156.8 MHz and 2182 kHz. The frequency 2174.5 kHz may also be used for ship-to-ship on-scene communications using narrow-band direct-printing telegraphy in the forward error correcting mode in accordance with CCIR Recommendation 625 as specified in § 80.1101.

(d) In addition to 156.8 MHz and 2182 kHz, the frequencies 3023 kHz, 4125 kHz, 5680 kHz, 123.1 MHz and 156.3 MHz may be used for ship-to-aircraft on-scene communications.

(e) The selection or designation of on-scene frequencies is the responsibility of the unit coordinating search and rescue operations. Normally, once an on-scene frequency is established, a continuous aural or teleprinter watch is maintained by all participating on-scene mobile units on the selected frequency.

**§ 80.1129 Locating and homing signals.**

(a) Locating signals are radio transmissions intended to facilitate the finding of a mobile unit in distress or the location of survivors. These signals include those transmitted by searching units and those transmitted by the mobile unit in distress, by survival craft, by float-free EPIRBS, by satellite EPRIBs, and by search and rescue radar transponders to assist the searching units.

(b) Homing singnals are those locating signals which are transmitted by mobile units in distress, or by survival craft, for the purpose of providing searching units with a signal that can be used to determine the bearing to the transmitting stations.

(c) Locating signals may be transmitted in the following frequency bands: 117.975–136 MHz, 121.5 MHz, 156–174 MHz, 406–406.1 MHz, and 9200–9500 MHz.

(d) The 9 GHz locating signals must be in accordance with CCIR Recommendation 628 as specified in § 80.1101.

**§ 80.1131 Transmissions of urgency communications.**

(a) In a terrestrial system the announcement of the urgency message must be made on one or more of the distress and safety calling frequencies specified in § 80.1077 using digital selective calling and the urgency call format. A separate announcement need not be made if the urgency message is to be transmitted through the maritime mobile-satellite service.

(b) The urgency signal and message must be transmitted on one or more of the distress and safety traffic frequencies specified in § 80.1077, or via the maritime mobile-satellite service or on other frequencies used for this purpose.

(c) The urgency signal consists of the words PAN PAN. In radiotelephony each word of the group must be pronounced as the French word ''panne''.

(d) The urgency call format and the urgency signal indicate that the calling station has a very urgent message to transmit concerning the safety of a mobile unit or a person.

(e) In radiotelephony, the urgency message must be preceded by the urgency signal, repeated three times, and the identification of the transmitting station.

(f) In narrow-band direct-printing, the urgency message must be preceded by the urgency signal and the identification of the transmitting station.

(g) The urgency call format or urgency signal must be sent only on the authority of the master or the person responsible for the mobile unit carrying the mobile station or mobile earth station.

(h) The urgency call format or the urgency signal may be transmitted by a land station or a coast earth station with the approval of the responsible authority.

(i) When an urgency message which calls for action by the stations receiving the message has been transmitted, the station responsible for its transmission must cancel it as soon as it knows that action is no longer necessary.

(j) Error correction techniques, in accordance with CCIR Recommendation 625 as specified in §80.1101, must be used for urgency messages by direct-printing telegraphy. All messages must be preceded by at least one carriage return, a line feed signal, a letter shift signal and the urgency signal PAN PAN.

(k) Urgency communications by direct-printing telegraphy should be in the ARQ mode when communicating directly to the Coast Guard or other coast stations on channels which they normally guard. Other distress communications, including those on simplex channels provided for that purpose, should be in the broadcast forward error correction mode. The ARQ mode may subsequently be used when it is advantageous to do so.

### §80.1133 Transmission of safety communications.

(a) In a terrestrial system the announcement of the safety message must be made on one or more of the distress and safety calling frequencies specified in §80.1077 using digital selective calling techniques. A separate announcement need not be made if the message is to be transmitted through the maritime mobile-satellite service.

(b) The safety signal and message must normally be transmitted on one or more of the distress and safety traffic frequencies specified in §80.1077, or via the maritime mobile satellite service or on other frequencies used for this purpose.

(c) The safety signal consists of the word SECURITE. In radiotelephony, it is pronounced as in French.

(d) The safety call format or the safety signal indicates that the calling station has an important navigational or meteorological warning to transmit.

(e) In radiotelephony, the safety message must be preceded by the safety signal, repeated three times, and the identification of the transmitting station.

(f) In narrow-band direct-printing, the safety message must be preceded by the safety signal and the identification of the transmitting station.

(g) Error correction techniques, in accordance with CCIR Recommendation 625 as specified in §80.1101, must be used for safety messages by direct-printing telegraphy. All messages must be preceded by at least one carriage return, a line feed signal, a letter shift signal and the safetysignal SECURITE.

(h) Safety communications by direct-printing telegraphy should be in the ARQ mode when communicating directly to the Coast Guard or other coast stations on channels which they normally guard. Other distress communications, including those on simplex channels provided for that purpose, should be in the broadcast forward error correction mode. The ARQ mode may subsequently be used when it is advantageous to do so.

### §80.1135 Transmission of maritime safety information.

(a) The operational details of the stations transmitting maritime safety information in accordance with this section are indicated in the ITU List of Radiodetermination and Special Service Stations and the IMO Master Plan of Shore-Based Facilities.

(b) The mode and format of the transmissions mentioned in this section is

in accordance with the CCIR Recommendation 540 as specified in § 80.1101.

(c) Maritime safety information is transmitted by means of narrow-band direct-printing telegraphy with forward error correction using the frequency 518 kHz in accordance with the international NAVTEX system (see § 80.1077).

(d) The frequency 490 kHz may be used, after full implementation of the GMDSS, for the transmission of maritime safety information by means of narrow-band direct-printing telegraphy with forward error correction (see § 80.1077).

(e) Internationally, the frequency 4209.5 kHz is used for NAVTEX-type transmissions by means of narrow-band direct-printing telegraphy with forward error correction (see § 80.1077).

(f) Maritime safety information is transmitted by means of narrow-band direct-printing telegraphy with forward error correction using the frequencies 4210 kHz, 6314 kHz, 8416.5 kHz, 12579 kHz, 16806.5 kHz, 19680.5, 22376 kHz, and 26100.5 kHz (see § 80.1077).

(g) Maritime safety information is transmitted via satellite in the maritime mobile-satellite service using the band 1530–1545 MHz (see § 80.1077).

## Subpart X—Voluntary Radio Installations

GENERAL

### § 80.1151 Voluntary radio operations.

Voluntary ships must meet the rules applicable to the particular mode of operation as contained in the following subparts of this part and as modified by § 80.1153:

Operating Requirements and Procedures—Subpart C
Equipment Technical Requirements—Subpart E
Frequencies—Subpart H

### § 80.1153 Station log and radio watches.

(a) Licensees of voluntary ships are not required to operate the ship radio station or to maintain radio station logs.

(b) When a ship radio station of a voluntary ship is being operated, appropriate general purpose watches must be maintained in accordance with §§ 80.146, 80.147 and 80.148.

VOLUNTARY TELEGRAPHY

### § 80.1155 Radioprinter.

Radioprinter operations provide record communications between authorized maritime mobile stations.

(a) *Supplementary eligibility requirements.* Ships must be less than 1600 gross tons.

(b) *Scope of communication.* (1) Ship radioprinter communications may be conducted with an associated private coast station.

(2) Ships authorized to communicate by radioprinter with a common private coast station may also conduct intership radioprinter operations.

(3) Only those communications which are associated with the business and operational needs of the ship are authorized.

(c) *Assignment and use of frequencies.* (1) Frequencies for radioprinter operations are shared by several radio services including the maritime mobile service.

(2) Ship stations must conduct radioprinter operations only on frequencies assigned to their associated private coast station for that purpose.

(d) *Authorization procedure.* The authorization procedure for ship station radioprinter operations is as follows:

(1) The associated private coast station must submit an application for specific radioprinter frequencies and provide the names of ships to be served.

(2) When the private coast station receives a radioprinter license, it must provide copies of their license to all ships with which they are authorized to conduct radioprinter operations. The private coast station license copy must be kept as part of the ship station license.

(3) Any addition or deletion of ships must be notified to the Commission by letter.

### § 80.1157 Facsimile.

Facsimile is a form of telegraphy for the transmission and receipt of fixed images. Ships must use facsimile techniques only with authorized public coast stations.

**§80.1159 Narrow-band direct-printing (NB–DP).**

NB–DP is a form of telegraphy for the transmission and receipt of direct printing public correspondence. Ships must use NB–DP techniques only with authorized public coast stations.

**§80.1161 Emergency position indicating radiobeacon (EPIRB).**

EPIRB transmissions must be used only under emergency conditions. The various classes of EPIRB's are described in subpart V of this part.

VOLUNTARY TELEPHONY

**§80.1165 Assignment and use of frequencies.**

Frequencies for general radiotelephone purposes are available to ships in three radio frequency bands. Use of specific frequencies must meet the Commission's rules concerning the scope of service and the class of station with which communications are intended. The three frequency bands are:

(a) *156–158 MHz (VHF/FM Radiotelephone).* Certain frequencies within this band are public correspondence frequencies and they must be used as working channels when communicating with public coast stations. Other working frequencies within the band are categorized by type of communications for which use is authorized when communicating with a private coast station or between ships. Subpart H of this part lists the frequencies and types of communications for which they are available.

(b) *1600–4000 kHz (SSB Radiotelephone).* Specific frequencies within this band are authorized for single sideband (SSB) communications with public and private coast stations or between ships. The specific frequencies are listed in subpart H of this part.

(c) *4000–23000 kHz (SSB Radiotelephone).* Specific frequencies within this band are authorized for SSB communications with public and private coast stations. The specific frequencies are listed in subpart H of this part.

**§80.1169 [Reserved]**

**§80.1171 Assignment and use of frequencies.**

(a) The frequencies assignable to AMTS stations are listed in §80.385(a). These frequencies are assignable to ship and coast stations for voice, facsimile and radioteletypewriter communications.

(b) [Reserved]

ON-BOARD COMMUNICATIONS

**§80.1175 Scope of communications of on-board stations.**

(a) On-board stations communicate:

(1) With other units of the same station for operational communications on the ship.

(2) With on-board stations of another ship or shore facility to aid in oil pollution prevention during the transfer of 250 or more barrels of oil.

(3) With other units of the same station in the immediate vicinity of the ship for operational communications related to docking, life boat and emergency drills or in the maneuvering of cargo barges and lighters.

(b) An on-board station may communicate with a station in the Business Radio Service operating on the same frequency when the vessel on which the on-board station is installed is alongside the dock or cargo handling facility.

**§80.1177 Assignment and use of frequencies.**

On-board frequencies are assignable only to ship stations. When an on-board repeater is used, paired frequencies must be used. On-board repeater frequencies must be used for single frequency simplex operations. On-board frequencies are listed in subpart H.

**§80.1179 On-board repeater limitations.**

When an on-board repeater is used, the following limitations must be met:

(a) The on-board repeater antenna must be located no higher than 3 meters (10 feet) above the vessel's highest working deck.

(b) Each on-board repeater must have a timer that deactivates the transmitter if the carrier remains on for more than 3 minutes.

[51 FR 31213, Sept. 2, 1986, as amended at 58 FR 44954, Aug. 25, 1993]

### § 80.1181 Station identification.

(a) On-board stations must identify when:

(1) The vessel is within 32 km (20 miles) of any coastline; or

(2) The communications are likely to be received aboard another vessel.

(b) Identification, when required, must be:

(1) Transmitted at the beginning and the end of a series of communications. Whenever communications are sustained for a period exceeding 15 minutes, station identification must be transmitted at intervals not exceeding 15 minutes.

(2) In English and must include the name of the vessel, followed by a number or name designating the respective mobile unit, for example: ''S.S. United States Mobile One, this is Mobile Two.''

[51 FR 31213, Sept. 2, 1986, as amended at 58 FR 44954, Aug. 25, 1993]

### § 80.1183 Remote control for maneuvering or navigation.

(a) An on-board station may be used for remote control of maneuvering or navigation control systems aboard the same ship or, where that ship is towing a second ship, aboard the towed ship.

(b) The remote control system transmissions must contain a synchronization signal and a message signal composed of a documentation number group, a company control group, an actuation instruction group, and a termination of transmission group.

(1) The synchronization signal must be the control character ''SYN'', transmitted twice.

(2) The message signal is composed of the following groups:

(i) The documentation number group must be transmitted once and be the ship's U.S. Coast Guard documentation number or, if the ship is not documented, the call sign of the on-board station.

(ii) The company control group, composed of three letters taken from AAA through ZZZ, which must be transmitted one time.

(iii) The actuation instruction group, composed of two letters taken from AA through ZZ, which must be transmitted one time.

(iv) The termination of transmission group, composed of the control character ''EM'', which must be transmitted twice.

(c) The receiving system must:

(1) Reject any actuation instruction until it recognizes and accepts the company control group.

(2) Reject any company control group until it recognizes and accepts the documentation number group.

(d) The emission employed must be G2D. The provisions applicable to G3E emission are also applicable to G2D emission.

(e) The binary information must be applied to the carrier as frequency-shift keying (FSK) of the standard tones 1070 and 1270 Hz. ''0'' (low) must correspond to 1070 Hz and ''1'' (high) must correspond to 1270 Hz. The signalling rate must be 300 bits per second.

(f) The alphabet employed must be the United States of America Standard Code for Information Interchange (USASCII), contained in the United States of America Standards Institute publication USAS X3.4–1968.

(1) The bit sequence must be least significant bit first to most significant bit (bit 1 through 7), consecutively.

(2) The character structure must consist of 8 bits (seven bits plus one character parity bit) having equal time intervals.

(3) ''Odd'' parity is required.

## MOBILE-SATELLITE STATIONS

### § 80.1185 Supplemental eligibility for mobile-satellite stations.

Stations in the maritime mobile-satellite service must meet the eligibility requirements contained in this section.

(a) A station license for a ship earth station may be issued to:

(1) The owner or operator of a ship.

(2) A corporation proposing to furnish a nonprofit radio communication service to its parent corporation, to another subsidiary of the same parent, or to its own subsidiary, where the party to be served is the owner or operator of

the ship aboard which the ship earth station is to be installed and operated.

(b) A station license for a portable ship earth station may be issued to the owner or operator of portable earth station equipment proposing to furnish satellite communication services on board more than one ship or fixed offshore platform located in the marine environment.

[52 FR 27003, July 17, 1987, as amended at 54 FR 49995, Dec. 4, 1989]

### § 80.1187 Scope of communication.

Ship earth stations must be used for telecommunications related to the business or operation of ships and for public correspondence of persons on board. Portable ship earth stations are authorized to meet the business, operational and public correspondence telecommunication needs of fixed offshore platforms located in the marine environment as well as ships. The types of emission are determined by the INMARSAT organization.

[52 FR 27003, July 17, 1987]

### § 80.1189 Portable ship earth stations.

(a) Portable ship earth stations are authorized to operate on board more than one ship. Portable ship earth stations are also authorized to be operated on board fixed offshore platforms located in international or United States domestic waters.

(b) Portable ship earth stations must meet the rule requirements of ship earth stations with the exeception of eligibility.

(c) Where the license of the portable ship earth station is not the owner of the ship or fixed platform on which the station is located, the station must be operated with the permission of the owner or operator of the ship or fixed platform.

[52 FR 27003, July 17, 1987]

RADIODETERMINATION

### § 80.1201 Special provisions for cable-repair ship stations.

(a) A ship station may be authorized to use radio channels in the 285–315 kHz band in Region 1 and 285–325 kHz in any other region for cable repair radiodetermination purposes under the following conditions:

(1) The radio transmitting equipment attached to the cable-marker buoy associated with the ship station must be described in the station application;

(2) The call sign used for the transmitter operating under the provisions of this section is the call sign of the ship station followed by the letters ''BT'' and the identifying number of the buoy.

(3) The buoy transmitter must be continuously monitored by a licensed radiotelegraph operator on board the cable repair ship station; and

(4) The transmitter must operate under the provisions in § 80.375(b).

## PART 87—AVIATION SERVICES

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OPERATING REQUIREMENTS

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