

**§ 81.552 Reports of infringements of the International Radio Regulations.**

In the event that infringement of the International Radio Regulations by a foreign station is detected, report thereof may be made by the submission to the Commission of a form similar to that set forth in the International Radio Regulations.

**PART 83—STATIONS ON SHIPBOARD IN THE MARITIME SERVICES**

**NOTE 1:** See Commission Order (FCC 61-952 adopted July 26, 1961, effective Sept. 1, 1961, in Docket 13953), 26 F.R. 6849, Aug. 1, 1961, providing for frequency pairing in the 952-960 Mc/s band and making certain other channels in the 952-960 Mc/s band available for omnidirectional operations.

**NOTE 2:** See Commission Order (FCC 61-1324) of Nov. 8, 1961, 26 F.R. 10925, Nov. 22, 1961, providing for the modification of licenses of (1) passenger ship stations using telegraph (2-27.5 Mc/s); and (2) ship stations using telephone (4-27.5 Mc/s). The general authorization shall be for a period which will extend from March 22, 1962, until termination of the present license authority, of ship stations affected, by the issuance of a modified or renewal license in response to an application therefor. All provisions in Part 83 which are inconsistent with the above authorization are hereby waived for the period specified.

**NOTE 3:** See Commission Order (FCC 61-1492) of Dec. 20, 1961, 26 F.R. 12519, Dec. 27, 1961, providing for the modification of licenses of coast and ship stations in Alaska and on the Mississippi River by the addition of certain frequencies. The general authorization shall be for a period which shall extend from December 22, 1961, until termination of the present license authority, of coast and ship stations affected, by the issuance of a modified or renewal license in response to an application therefor. All provisions in Part 83 which are inconsistent with the above authorization are hereby waived for the period specified.

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**AUTHORITY:** §§ 83.1 to 83.803 issued under 48 Stat 1066, 1082, as amended; 47 U.S.C. 154, 303. Interpret or apply 48 Stat. 1064-1068, 1081-1105, as amended; 47 U.S.C. Subchap. 1, III-VI; 3 UST 3450, 3 UST 4726, 12 UST 2377.

**SOURCE:** §§ 83.1 to 83.803 appear at 28 F.R. 14006, Dec. 21, 1963.

**§ 83.1 Basis and purpose.**

(a) The basis for the rules following in this part is the Communications Act of 1934, as amended, and applicable treaties and agreements to which the United States is a party.

(b) The purpose of the rules and regulations in this part is to prescribe the manner in which portions of the radio spectrum may be made available for radiocommunication and radiodetermination for maritime operations and for public correspondence which require radio transmitting facilities on board ship and, for certain maritime communications, including public correspondence, on board aircraft; and to prescribe, in so far as is necessary to carry out the pro-

visions of statute and applicable treaties and agreements relative to radio operators and radio installations on board ships for safety purposes, the details as to location, manner of installation, use, and availability of the required equipment, apparatus, spare parts, and such supplementary equipment as may be necessary for the proper functioning of the required shipboard radio installations for the proper conduct of radio communication in time of emergency or distress.

### Subpart A—Definition of Terms

#### § 83.2 General.

(a) *Safety Convention.* The International Convention for the Safety of Life at Sea, London, 1948, including the regulations annexed thereto.

(b) *International Radio Regulations.* The Radio Regulations in force annexed to the International Telecommunication Convention, Geneva, 1959, as between the Government of the United States and other Contracting Governments; and such preceding international radio regulations as remain in force between the Government of the United States and other Contracting Governments.

(c) *Region 1, Region 2, and Region 3.* Those geographic areas defined as "Region 1", "Region 2", and "Region 3" in Article 5 of the International Radio Regulations, Geneva, 1959.

(d) *Great Lakes Agreement.* The Agreement for the Promotion of Safety on the Great Lakes by Means of Radio and the regulations referred to therein, made by and between the Governments of the United States and Canada, which came into force on November 13, 1954.

(e) *Telecommunication.* Any transmission, emission, or reception of signs, signals, writing, images, and sounds or intelligence of any nature by wire, radio, optical, or other electromagnetic systems.

(f) *Radiocommunication.* Telecommunication by means of radio waves.

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

(h) *Station.* One or more transmitters or receivers or a combination of transmitters and receivers, including the accessory equipment, necessary at one location for carrying on a radiocommunication service. Each station shall

be classified by the service in which it operates permanently or temporarily.

(i) *Ship station license.* A license authorizing the operation of a ship station, a survival craft station associated with a ship, or a ship radionavigation station.

(j) *Person.* Includes an individual, partnership, association, joint stock company, trust, or corporation.

(k) *Hours of service.* The period of time during each calendar day when a station is used, in conformity with the terms of the station authorization, for the rendition of its normal service.

(1) *Day.* (1) Where the word "day" is applied to the use of a specific frequency assignment or to a specific authorized transmitter-power, such use of the word "day" shall be construed to mean transmission on such frequency assignment or with such 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 the provisions of § 83.449, such use of the word "day" shall be construed to mean the calendar day, from midnight to midnight, local ship's time.

(m) *Radio district.* The territory within each radio district, and the address of the Engineer in Charge of each radio district, is set out in § 0.121 of this chapter.

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

(o) *Categories of ships.* (1) Where use of the term "passenger ship" or "cargo ship" occurs in reference to the provisions of Part II of Title III of the Communications Act, such use of the term shall be construed as follows: 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) Where use of the term "passenger ship" or "cargo ship" occurs in reference to the radio provisions of the Safety Convention or in reference to frequency assignment, such use of the term shall be construed as follows: A ship is a passenger ship if it carries more than twelve passengers. A cargo ship is any ship not a passenger ship.

(3) A "commercial transport vessel" is any ship or vessel 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.

(4) The term "passenger carrying vessel", as used in this part solely in reference to requirements of the Great Lakes Agreement, means any vessel transporting persons for hire.

(p) *Safety Convention Certificates—*

(1) *Exemption Certificate.* A certificate issued to a ship which is granted exemption from applicable provisions of the Safety Convention.

(2) *Safety Certificate.* A certificate issued upon application, after inspection and survey by proper authorities, to a passenger ship which complies in an efficient manner with the requirements of the Safety Convention.

(3) *Safety Radiotelegraphy Certificate.* A certificate issued upon application, after inspection by proper authorities, to a cargo ship which complies in an efficient manner with the Safety Convention radio requirements applicable to cargo ships carrying radiotelegraph installations for the purpose of meeting such requirements.

(4) *Safety radiotelephony certificate.* A certificate issued upon application, after inspection by proper authorities, to a cargo ship which complies in an efficient manner with the Safety Convention radio requirements applicable to cargo ships carrying radiotelephone installations for the purpose of meeting such requirements.

(q) *Installed.* As used in this part with respect to the requirements of radio apparatus authorized under the provisions of this part for use on board ship or in stations subject to this part, the term "installed" means installed on board the particular ship or in the particular station to which the pertinent rule or regulation, involving the use of this term, is applied.

(r) *Great Lakes.* This term, as used in this part solely in reference to the Great Lakes Agreement, means all of the Great Lakes, their connecting and tributary waters, and the St. Lawrence River as far east as the lower exit of the Lachine Canal and the Victoria

Bridge at Montreal, but shall not include tributary rivers which are not also connecting rivers, and shall not include the Niagara River (including the Black Rock Canal).

(s) *Destination.* In reference to the Great Lakes Agreement this term means a port which a vessel enters for the purpose of initiating or completing the specific activity which characterizes the vessel. For example, with respect to vessels carrying passengers or goods, a port at which a vessel, either partially or completely, loads or unloads passengers or goods, would constitute its destination.

### § 83.3 Maritime mobile service.

(a) *Mobile service.* A service of radio-communication between mobile and land stations, or between mobile stations.

(b) *Maritime mobile service.* A mobile service between coast stations and ship stations, or between ship stations, in which survival craft stations may also participate. (Aircraft stations, when transmitting on frequencies allocated to the maritime mobile service, may communicate in this service with ship stations and coast stations.)

(c) *Mobile station.* A station in the mobile service intended to be used while in motion or during halts at unspecified points.

(d) *Ship station.* A mobile station in the maritime mobile service located on board a vessel, other than a survival craft, which is not permanently moored.

(e) *Public ship station.* (1) A ship station open to public correspondence.

(2) Public ship stations authorized to employ telegraphy for public correspondence are further classified according to their hours of service for telegraphy as designated in this section:

*First Category.* These stations carry on a continuous service of public correspondence.

*Second Category.* These stations carry on a designated service of public correspondence of prescribed but limited duration at least during the period designated for ship stations of the second category by the International Radio Regulations or, in the case of voyages of short duration, as otherwise designated by the Commission in accordance with those Regulations.

*Third Category.* These stations carry on a service of public correspondence, the duration of which is prescribed but

is less than that of stations of the "Second Category," or is not prescribed but is determined by the master of vessel pursuant to his authority under section 360 of the Communications Act.

(f) *Limited ship station.* A ship station not open to public correspondence.

(g) *Marine-utility ship station.* A ship station, readily portable for use as a limited ship station on mobile vessels within a designated local area.

(h) *Marine-utility coast station.* A coast station, readily portable for use as a limited coast station at unspecified points ashore within a designated local area.

(i) *Marine-utility station.* A coast or ship station in the maritime mobile service having a frequency assignment which is available for both marine-utility coast stations and marine-utility ship stations, and licensed under one station authorization to operate as either a marine-utility coast station or a marine-utility ship station according to its location, pursuant to the provisions of paragraphs (g) and (h) of this section, at the time it is being operated.

(j) *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.

#### § 83.4 Maritime radiodetermination service.

(a) *Radiodetermination.* The determination of position, or the obtaining of information relating to position, by means of the propagation properties of radio waves.

(b) *Radiodetermination service.* A service involving the use of radiodetermination.

(c) *Maritime radiodetermination service.* A radiodetermination service intended for the benefit of ships.

(d) *Radionavigation.* Radiodetermination used for the purposes of navigation, including obstruction warning.

(e) *Radionavigation service.* A radiodetermination service involving the use of radionavigation.

(f) *Maritime radionavigation service.* A radionavigation service intended for the benefit of ships.

(g) *Radionavigation mobile station.* A station in the radionavigation service intended to be used while in motion or during halts at unspecified points.

(h) *Ship radionavigation station.* A radionavigation mobile station located

on board a ship and used solely for maritime radionavigation service.

(i) *Radar.* A radiodetermination system based on the comparison of reference signals with radio signals reflected, or retransmitted, from the position to be determined.

(j) *Ship radar station.* A ship radionavigation station utilizing radar.

(k) *Radiolocation.* Radiodetermination used for purposes other than those of radionavigation.

(l) *Radiolocation service.* A radiodetermination service involving the use of radiolocation.

(m) *Maritime radiolocation service.* A radiolocation service intended for the benefit of ships.

(n) *Radiolocation mobile station.* A station in the radiolocation service intended to be used while in motion or during halts at unspecified points.

(o) *Ship radiolocation station.* A radiolocation mobile station located on board a ship and used solely for maritime radiolocation service.

(p) *Ship radiolocation test station.* A ship radiolocation station used solely for testing maritime radionavigation apparatus incident to its manufacture, installation, repair, servicing, and/or maintenance.

(q) *Radio direction finding.* Radiodetermination using the reception of radio waves for the purpose of determining the direction of a station or object.

(r) *Direction finder (radio compass).* Apparatus capable of receiving clearly perceptible radio signals and capable of taking bearings on these signals from which the true bearing and direction of the point of origin of such signals with respect to the point of reception may be determined.

#### § 83.5 Developmental Maritime stations on board ship.

(a) *Developmental mobile station.* A mobile station operated for the express purpose of developing equipment or a technique solely for use only in that portion of the non-Government mobile service which has been specifically allocated the authorized frequency (or frequencies) of the developmental mobile station.

(b) *Developmental radiodetermination station.* A radiodetermination station operated for the express purpose of developing equipment or a technique solely for use only in that portion of the non-Government radiodetermination

service (including the non-Government radionavigation service) which has been specifically allocated the authorized frequency (or frequencies) of the developmental radiodetermination station.

(c) *Specific classification.* The specific classes of developmental stations on board ships in the maritime mobile service and in the maritime radiodetermination service (including maritime radionavigation service) are the same as the classes defined in preceding sections of this part; however, for purposes of identification, the particular class of station is followed by the parenthetical indicator “(developmental)”; for example: “limited ship station (developmental)”.

### § 83.6 Operational.

(a) *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.

(b) *Superfluous radiocommunication.* Any transmission that is not necessary in properly carrying on the service for which the station is licensed.

(c) *Harmful interference.* Any emission, radiation, or induction which endangers the functioning of a radionavigation service or of other safety services, or seriously degrades, obstructs, or repeatedly interrupts a radiocommunication service operating in accordance with regulations in this chapter.

(d) *500 kilocycles silence period.* The three-minute period twice an hour beginning at x h. 15 and x h. 45, Greenwich mean time, during which the International Radio Regulations require that all transmission (except for certain emissions designated in those Regulations) must cease on all frequencies within a designated frequency band centered on 500 kc/s.

(e) *Watch.* The act of listening on a designated frequency.

(f) *Calling.* Transmission from a station solely to secure the attention of another station, or other stations, for a particular purpose.

(g) *Working.* Radiocommunication carried on, for a purpose other than calling, by any station or stations using telegraphy, telephony, or facsimile.

(h) *Operational communication.* Radiocommunication concerning the

navigation, movement, or management of a ship or ships.

(1) *Navigation.* This includes the piloting of a vessel.

(2) *Movement.* This includes information and necessary communication relative to when and where the boat or ship will move or be moved as, for example, rendezvous at a port, basin, or marina, or for maneuvers during a cruise.

(3) *Management.* This includes the obtaining of necessary supplies for the ship, limited to immediate needs, and the scheduling of repairs or modifications to the ship, limited to communications with those directly involved in the repairs or modifications or concerned with changes in the movement of the ship because of those repairs or modifications.

(i) *Business communication.* Radio communication pertaining to economic, commercial, or governmental matters related directly to the purposes for which the ship is being used.

(j) *Port operations.* Communications in or near a port, or in locks or waterways, between coast stations and ship stations, or between ship stations, in which messages are restricted to those relating to the movement and safety of ships and, in emergency, to the safety of persons.

### § 83.7 Technical.

(a) *Spurious emission.* Emission on a frequency or frequencies which are outside the necessary band, and the level of which may be reduced without affecting the corresponding transmission of information. Spurious emissions include harmonic emissions, parasitic emissions, and intermodulation products, but exclude emissions in the immediate vicinity of the necessary band, which are a result of the modulation process for the transmission of information.

(b) *Authorized carrier frequency.* A specific carrier frequency authorized for use by a station from which the actual carrier frequency is permitted to deviate, solely because of frequency instability, by an amount not to exceed the frequency tolerance.

(c) *Frequency tolerance.* The maximum permissible departure by the center frequency of the frequency band occupied by an emission from the assigned frequency or, by the characteristic frequency of an emission from the reference frequency. The frequency toler-

ance is expressed in parts in  $10^6$  or in cycles per second.

(d) *Frequency band*. A continuous range of frequencies extending between two designated limiting frequencies.

(e) *Bandwidth*. The number of cycles or kilocycles per second expressing the difference between the limiting frequencies of a frequency band.

(f) *Radio channel*. A frequency band, sufficient in width to permit its use for radiocommunication, comprised of the emission bandwidth, the interference guard bands, and the frequency tolerance.

(g) *Emission bandwidth*. The frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission. In some cases, for example multichannel frequency-division systems, the percentage of 0.5 percent may lead to certain difficulties in the practical application of the definitions of occupied and necessary bandwidth; in such cases a different percentage may prove useful. (This definition coincides with the definition of "Occupied Bandwidth" which appears as paragraph 90 of the International Radio Regulations, Geneva, 1959.)

(h) *Interference guard bands*. The two frequency bands additional to and on either side of the authorized frequency band, which may be provided to minimize the possibility of interference between different radio channels.

(i) *Assigned frequency*. The center of the frequency band assigned to a station.

(j) *Frequency assignment*. The specific frequency or frequencies authorized for the emission(s) of a particular station, expressed for each radio channel by:

(1) The authorized carrier frequency, the frequency tolerance, and the authorized emission bandwidth in relation to the authorized carrier frequency;

(2) The authorized emission bandwidth in reference to a specific assigned frequency (when a carrier does not exist); or

(3) The authorized frequency band (when a carrier does not exist).

(k) *Modulation*. The process of producing a wave some characteristic of which varies as a function of the instantaneous value of another wave, called the modulating wave.

(l) *Modulation factor*. (1) In an amplitude modulated wave, the ratio of half the difference between the maximum and minimum amplitudes to the average amplitude;

(2) In a frequency modulated wave, the ratio of the actual frequency swing to the frequency swing defined as 100-percent modulation.

(m) *Percentage modulation*. The modulation factor expressed in percent.

(n) *Amplitude modulation (AM)*. Modulation in which the amplitude of a wave is the characteristic subject to variation.

(o) *Frequency modulation (FM)*. Modulation in which the instantaneous frequency of a sine wave carrier is caused to depart from the carrier frequency by an amount proportional to the instantaneous value of the modulating wave.

(p) *Frequency deviation*. In frequency modulation, the peak difference between the instantaneous frequency of the modulated wave and the carrier frequency.

(q) *Frequency swing*. In frequency modulation, the peak difference between the maximum and the minimum values of the instantaneous frequency.

(r) *Deviation ratio*. In frequency modulation, for a sinusoidal modulating wave, the ratio of the maximum frequency deviation to the maximum frequency of the modulating wave.

(s) *Last radio stage*. In an electron tube radio transmitter, the radiofrequency oscillator or power amplifier stage which supplies all radiofrequency power to the antenna, either directly or through the medium of a transmission line.

(t) *Plate (anode) input power*. The electrical power delivered to the plate (anode) of an electron tube by the source of supply; this power being the product of the indicated anode voltage and the indicated anode current.

(u) *Antenna power*. The power supplied by a particular radio transmitter to the antenna used in connection with that transmitter, at a radio frequency or frequencies within an authorized frequency band.

(v) *Authorized transmitter power*. The power of a particular transmitter as designated in the respective station license. Unless specifically expressed otherwise, this power is the total plate input power to all electron tubes in the last radio stage of the transmitter which

are used to supply radiofrequency power to the antenna, without modulation present in the case of a transmitter used for telephony by means of class A3 emission.

(w) *Frequency band of emission.* A frequency band of emission is a frequency band of which the two designated limiting frequencies are established by an emission bandwidth referred to a particular carrier frequency. For the purpose of this definition, when a carrier is not present, a frequency normally coinciding with the center of the frequency band occupied by the emission is substituted therefor.

### § 83.8 Installation for safety communication.

(a) *Existing installation.* The term "existing installation", as used in this part solely in reference to requirements of part II of title III of the Communications Act or of the Safety Convention, means an installation installed on a ship prior to November 19, 1952, in the case of a United States ship subject to the radio provisions of the Safety Convention, or one installed on a ship prior to August 13, 1955, in the case of other ships subject to part II of title III of said Act.

(b) *New installation.* The term "new installation", as used in this part solely in reference to requirements of part II of title III of the Communications Act or of the Safety Convention, means an installation which replaces an existing installation or, in the case of a United States ship subject to the radio provisions of the Safety Convention, one installed on a ship subsequent to November 19, 1952, and in the case of other ships subject to part II of title III of said Act, one which is installed subsequent to August 13, 1955.

## Subpart B—Applications

### § 83.21 Authorization required for operation of a radio station.

Any radio station required by the Communications Act to be licensed shall not be operated in any service regulated by this part except under and in accordance with a valid station authorization granted by the Commission. Further, the operation of such apparatus shall be conducted in conformity with the provisions of statute, international treaty or agreement, and the rules of the Commission relative to the licensing of operators.

**NOTE:** The Commission has exempted certain low power radio devices from its general licensing requirements; the extent of this exemption and related matters are set forth in Part 15, "Radio Frequency Devices", of this chapter. Licensing procedures and exemptions applicable to radio apparatus used for medical purposes, industrial heating, and other miscellaneous purposes not involving radiocommunication are set forth in Part 18, "Industrial, Scientific, and Medical Equipment", of this chapter.

### § 83.22 Administrative classification of stations.

(a) Stations in the maritime mobile service subject to this part are licensed according to the class of station normally as designated below:

(1) Public ship stations authorized to employ telegraphy for public correspondence:

- (i) First category;
- (ii) Second category;
- (iii) Third category.

(2) Public ship stations not authorized to employ telegraphy for public correspondence;

- (3) Limited ship stations;
- (4) Marine utility stations;
- (5) Survival craft stations.

(b) Public ship stations not authorized to employ telegraphy for public correspondence are licensed as public ship stations (one class) without distinction relative to hours of service for public correspondence.

(c) Limited ship stations are licensed (one class) without distinction relative to hours of service.

(d) One ship station license is issued in behalf of one station licensee to authorize the operation of a station which is within more than one class as enumerated in paragraph (a) of this section. In all such cases, if the station by reason of any portion of its use or operation comes within the definition of a public ship station (as defined by § 83.3 (e)), it is licensed as a public ship station. If the station is authorized to employ telegraphy for public correspondence, it is further classified in accordance with paragraph (a) (1) of this section.

(e) Survival craft stations are normally authorized by listing the transmitting equipment on the ship station license.

(f) Stations in the maritime radiolocation service subject to this part are licensed according to the class of station, normally as designated below:

- (1) Ship radiolocation stations;
- (2) Ship radiolocation test stations.

(g) Stations in the maritime radio-navigation service subject to this part, including ship radar stations, are normally licensed as ship radionavigation stations.

**§ 83.23 Statutory eligibility for station license.**

Section 310 of the Communications Act places the following express limitations on the granting and holding of station licenses:

(a) A station license shall not be granted to or held by:

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

(2) Any foreign government or the representative thereof;

(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 representative thereof, or by any 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 representatives thereof, 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.

(8) Nothing in subparagraphs (1) through (7) of this paragraph shall prevent the licensing of radio apparatus on board any vessel, aircraft, or other mobile station of the United States when the installation and use of such apparatus is required by Act of Congress or any treaty to which the United States is a party.

**§ 83.24 Application precedent to authorization.**

(a) Except as otherwise provided by §§ 83.26, 83.41, and 83.42, no authorization will be granted for use or operation

of any radio station on board ship in any service governed by this part unless formal written application therefor in proper form first is filed with the Commission at its offices in Washington, D.C., 20554, or pursuant to § 83.35 at a Field Engineering Office of the Commission.

(b) Except as otherwise provided by §§ 83.35, 83.41, and 83.42, an application in writing should be filed at least sixty days prior to the earliest date on which it is desired that the requested authorization be granted by the Commission, in order that action thereon may be taken by that date.

(c) Each application shall be specific and complete with regard to the information requested in the application form, or otherwise specifically requested by the Commission. Unless otherwise specified in a particular case or for a particular form, each application shall be filed in original only.

NOTE: Standard forms are prescribed herein for use in connection with the majority of applications submitted for Commission consideration. These forms may be obtained without cost from the Commission at Washington, D. C., or from any of its field offices.

**§ 83.25 Who may sign applications.**

(a) Except as provided in paragraph (b) of this section, applications, amendments thereto, and related statements of fact required by the Commission shall be personally signed by the applicant, if the applicant is an individual; by one of the partners, if the applicant is a partnership; by an officer, if the applicant is a corporation; or by a member who is an officer, if the applicant is an unincorporated association. Applications, amendments, and related statements of fact filed on behalf of eligible government entities, such as states and territories of the United States and political subdivisions thereof, the District of Columbia, and units of local government, including incorporated municipalities, shall be signed by such duly elected or appointed officials as may be competent to do so under the laws of the applicable jurisdiction.

(b) Applications, amendments thereto, and related statements of fact required by the Commission may be signed by the applicant's attorney in case of the applicant's physical disability or of his absence from the United States. The attorney shall in that event separately

set forth the reason why the application is not signed by the applicant. In addition, if any matter is stated on the basis of the attorney's belief only (rather than his knowledge), he shall separately set forth his reasons for believing that such statements are true.

(c) Only the original of applications, amendments, or related statements of fact need be signed; copies may be conformed.

(d) Applications, amendments, and related statements of fact need not be signed under oath. Willful false statements made therein, however, are punishable by fine and imprisonment, U.S. Code, Title 18, section 1001, and by appropriate administrative sanctions, including revocation of station license pursuant to section 312(a)(1) of the Communications Act of 1934, as amended.

#### § 83.26 Informal applications.

An application not submitted on a standard form prescribed by the Commission is an informal application. Each informal application shall be submitted in duplicate, normally in letter form, and with the original properly signed. Each application shall be clear and complete within itself as to the facts presented and the action desired.

#### § 83.27 Defective applications.

(a) An application which is not made in accordance with the Commission's rules or other requirements will be considered defective unless accompanied by a request to waive or petition to amend the rule or other requirement with which the application is in conflict. The reasons which are believed to support such a request or petition shall be set forth in detail.

(b) If an applicant is requested by the Commission to file any documents or information not included in the prescribed application form, a failure to comply with such request will constitute a defect in the application.

(c) When an application in written form is considered to be incomplete or defective, the Secretary of the Commission or, in the case of an application for regular ship station license or modification of license filed at a Field Engineering Office of the Commission accompanied by a request for interim ship station license, either the Secretary of the Commission or the Engineer-in-Charge of the particular Engineering Field Office, will return it to the appli-

cant unless the Commission should otherwise direct. The reason for return of the application will be indicated, and, if appropriate, necessary additions or corrections may be suggested.

#### § 83.28 Amendment or dismissal of application.

Any application may be amended or dismissed without prejudice upon request of the applicant prior to the time the application is granted or designated for hearing. Each amendment of, or request for dismissal of, an application shall be signed and submitted in the same manner and with the same number of copies as required for the original application. All related correspondence or other material which is to be considered as a part of an application already filed shall be submitted in the form of an amendment to the application concerned.

#### § 83.29 Partial grant of application.

Whenever the Commission, without a hearing grants an application (other than a grant of an interim ship station license) in part, or with any privileges, terms, or conditions other than those requested, the action of the Commission shall be considered as a grant of such application unless the applicant shall, within 30 days from the date on which public announcement of such grant is made, or from its effective date if a later date is specified, file with the Commission a written protest, rejecting the grant as made. Upon receipt of such protest, the Commission will vacate its original action upon the application, if necessary, and set the application for hearing in the same manner as other applications are set for hearing.

#### § 83.30 Request for amendment or waiver of rules.

(a) Any provisions of this part (except these provisions which set forth specific requirements, not subject to waiver or change, of any applicable statute, or any applicable international agreement to which the United States is a signatory party) may be repealed, amended or supplemented, subject to the provisions of the Administrative Procedures Act. Any interested person may petition for issuance, amendment, or repeal of any rule or regulation governing stations in the maritime mobile or maritime radio-location service. Such petition may be filed in relation to specific applications for station authorization, or independently

thereof, and shall show the text of the proposed rule(s), and shall set forth the reason(s) in support of the petition.

(b) Any provision of this part (except these provisions which set forth specific requirements, not subject to waiver or change, of any applicable statute, or any applicable international agreement to which the United States is a signatory party) may be waived by the Commission, if the Commission finds that important or exceptional circumstances require such waiver and that the public interest will be served thereby. A request for such waiver may be filed in relation to specific applications for station authorization, or independently thereof, and shall set forth in detail the reason(s) said waiver is considered to be necessary, and how the public interest would be served thereby.

#### § 83.31 Applications concerning marine-utility stations.

Whenever a marine-utility station is to be used and operated at any location on land (whether or not it is to be used and operated additionally on board mobile vessels), such station is subject to the applicable provisions of Part 81 of this chapter and an application for construction permit to establish such station shall be filed with the Commission, pursuant to the requirements therefor contained in that part.

#### § 83.32 Application for station license.

(a) In accordance with § 83.24 application for station license to authorize the use and operation of radio transmitting apparatus on board ship shall be submitted on the appropriate Federal Communications Commission form as prescribed in § 83.36.

(b) Each application for a public ship station license which requests authority to employ telegraphy for public correspondence shall designate the class of station desired to be authorized, in accordance with the terms of § 83.3(e).

#### § 83.33 Changes during license term.

When, during the term of a station license (other than an interim ship station license) any change is to be made in respect to the station, or with respect to its use and operation, which would result in a deviation from the terms of the license and/or any supplemental instrument of authorization, application for modification of license on the appropriate FCC form as prescribed in § 83.36

shall, except as otherwise provided by §§ 83.35, 83.41, and 83.42, be submitted in accordance with § 83.24 not less than 60 days prior to the date contemplated for such modification of license in order that action thereon may be taken by that date.

#### § 83.34 Renewal of license.

Except as otherwise provided by § 83.42, application for renewal of station license shall be submitted on FCC Form 501. Unless otherwise directed by the Commission, each application for renewal of license shall be filed during the last 60 days of the license term. In any case in which the licensee has, in accordance with the provisions of this chapter, made timely and sufficient application for renewal of license, no license with reference to any activity of a continuing nature shall expire until such application shall have been finally determined.

#### § 83.35 Request for interim ship station license.

(a) A formal application for ship station license, or for modification of existing license including modification to cover replacement of radiotelephone transmitting apparatus and/or radar (but not including renewal of station license), to authorize the use of telephony and/or radar on board a vessel when accompanied by a request for an interim ship station license, shall be filed in accordance with § 83.36 and presented in person by the applicant or his agent at the nearest Field Engineering Office of the Commission or at the Commission's main office in Washington, D.C.: *Provided*, That, as an alternative procedure, an applicant, in Alaska, for such a ship station license may submit an application by mail to the Commission's Field Engineering Office at Anchorage, Alaska, when accompanied by a written request for an interim ship station license.

(b) Such application as prescribed in paragraph (a) of this section may be filed, without regard to the filing time specified in §§ 83.24(b) and 83.33 whenever need arises for necessary authority to use a ship station for telephony and/or radar under the limitations of an interim ship station license on board any vessel pending action by the Commission at Washington, D.C., on the related formal application for regular license or modification of license.

(c) In the event the use of a ship station under the limitations of an interim

license would not meet the requirements of an applicant or when an application for renewal of station license is involved, the applicant may, subject to and in accordance with the conditions set forth in § 83.41 or 83.42, whichever is applicable, apply to the Commission at Washington, D.C., for special temporary station authorization or for license or modification or renewal of license in an emergency.

**§ 83.36 Application forms for station authorizations.**

(a) FCC Form 501 shall be used for filing formal application for new, modified, or renewal ship station license.

(b) FCC Form 401 shall be used for filing formal application for new or modified station license in the maritime radiolocation service.

(c) FCC Form 405-A shall be used for filing application for renewal of station license in the maritime radiolocation service.

**§ 83.37 Application for consent to voluntary transfer of control; non-assignment of license.**

(a) Application for consent to voluntary transfer of control of a corporation holding a license (other than an interim license) covering any class of station governed by this part shall be filed with the Commission on FCC Form 703 "Application for Consent to Transfer of Control of Corporation Holding Construction Permit or Station License" at least 60 days prior to the contemplated effective date of the transfer of control in order that action thereon may be taken by that date.

(b) In the case of stations on board ships licensed to operate in any service governed by this part, voluntary assignment of licenses will not be made. Whenever there is a change of ownership of a ship radio station, the new owner must apply for a new license. Upon receipt of the new license, the former license must be surrendered for cancellation.

(c) In the case of ship stations licensed to operate in any service governed by this part, involuntary assignment of licenses will not be made. Upon the death or legal disability of the licensee, such licenses shall be surrendered for cancellation.

**§ 83.38 Applications filed concurrently.**

Applications of different category but in respect to the same station and radio service may be filed concurrently by the same applicant as prescribed in this section:

(a) Applications for modification of station license and for renewal of station license;

(b) Applications for modification of station license and for consent to voluntary transfer of control of a corporation holding a station license;

(c) Applications for renewal of station license and for consent to voluntary transfer of control of a corporation holding a station license.

**§ 83.39 One application for plurality of stations.**

(a) One application may be filed for several station authorizations to cover similar stations on board different ships: *Provided*, The following elements are the same for all stations covered by such application:

(1) Nature of application (license, modification of license, or special temporary authority);

(2) Applicant;

(3) Licensee (when request is for modification or renewal);

(4) Nature of service and class of station as set forth in § 83.22;

(b) Paragraph (a) of this section shall apply only when the individual stations covered by such application are clearly identified therein and properly related to the information supplied which is applicable to the respective authorization requested for each station.

**§ 83.40 Application for station of portable nature (other than marine-utility station).**

(a) Upon application as appropriate under §§ 83.26, 83.36, 83.41 or 83.42 including a supplemental statement as prescribed in subparagraphs (1) and (2) of this paragraph, the Commission may grant a license, modification of license, renewal of license, or special temporary authorization, permitting operation of a station of an established class in the maritime mobile or maritime radiolocation service which is readily portable for use as the occasion requires on board a ship or ships of the United States: *Provided*, The applicant makes a satisfactory showing that:

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

in conformity with all applicable rules of the Commission, and

(2) Unusual circumstances exist whereby a station license to cover such operation is necessary to eliminate the necessity of frequently filing applications for special temporary authority, licenses, or modifications of license in order to permit on short notice the temporary operation of specified apparatus on board a designated ship or ships of the United States.

**§ 83.41 Application for special temporary station authorization.**

(a) Application for special temporary authority in lieu of or supplemental to normal form of station license for use and operation of radio transmitting apparatus on board ship in the maritime mobile service or the maritime radiolocation service, not involving an emergency found by the Commission, shall be limited to circumstances in which need exists for temporary use, for a limited period of time, of:

(1) Radio transmitting apparatus not currently authorized for the desired operation, or

(2) An authorized station in a manner or at times not permitted by the current station authorization.

(b) In accordance with paragraph (a) of this section written application for special temporary authority for the use and operation of radio transmitting apparatus on board ship may be filed informally as prescribed by § 83.26, except that such application shall be filed not less than 10 days prior to the earliest date of proposed operation unless an acceptable reason for failure to meet this time limitation is included in the application or is otherwise evident to the Commission.

(c) (1) Each application for special temporary authority submitted under the provisions of this section shall contain, as a minimum requirement, the following information:

(i) Name of applicant;

(ii) Name of agent, if application is made by an agent, in cases under § 1.913 of this chapter;

(iii) Official call letters of any valid station authorization or construction permit already held by applicant, and the related station location;

(iv) Name and type of ship;

(v) Official registry number of ship, if available;

(vi) Official call letters or radio call sign, if any, assigned to ship;

(vii) Explanation of need for special temporary authority in lieu of normal form of station license;

(viii) Class of station and nature of service desired;

(ix) Complete particulars concerning purpose and nature of proposed operation;

(x) Specific station(s) or class of station(s), whichever is appropriate, with which communication is intended;

(xi) Frequency assignment, authorized transmitter power, and authorized class or classes of emission desired;

(xii) Equipment to be used, specifying the manufacturer, model number, rated power, and frequency stability to be maintained;

(xiii) The date(s) and time(s) of the proposed operation.

(2) Each application for special temporary authority submitted under the provisions of this section shall, in addition to the information specified in subparagraph (1) of this paragraph, contain such of the following information as is not already on file with the Commission:

(i) Address of applicant;

(ii) Address of agent, if application is made by an agent, in cases under § 1.913 of this chapter;

(iii) Relation of applicant to owner of vessel;

(iv) Factual statements to the extent necessary for the Commission to determine whether or not the granting of the desired authorization will be in accordance with the citizenship requirements of section 310 of the Communications Act.

**§ 83.42 Application for license or modification or renewal of license in an emergency.**

(a) In cases of emergency involving danger to life or property or due to damage to equipment wherein the grant of an interim ship station license as provided by § 83.35 is not possible or such grant would not satisfy the requirements of the emergency, applications for a station license, or for modification or for renewal of a station license, to authorize certain use and operation of radio transmitting apparatus on board ship in the maritime mobile or maritime radiolocation service in accordance with applicable provisions of treaty, statute, and rules of the Commission, may be filed at any time by telegram or letter. In the

event that the Commission finds that such an emergency exists, temporary authorization may be granted to operate a station in accordance with the request for the duration of such emergency: *Provided*, That in such cases as may be considered necessary by the Commission, the applicant may be required to supplement such request by filing, as soon as practicable thereafter, a written application for the same authorization as normally prescribed by applicable provisions of this part.

**NOTE:** For example, an emergency is found by the Commission when the desired authorization is urgently needed for the use of shipboard radio apparatus for purposes of safety at sea, and circumstances beyond control of the applicant have prevented the filing of a written application, as normally prescribed by applicable provisions of this part, on a date which would assure its receipt by the Commission in time sufficient for the Commission to take appropriate action thereon.

(b) (1) Each application submitted under the provisions of paragraph (a) of this section shall contain, as a minimum requirement, the following information:

- (i) Name of applicant;
- (ii) Name of agent, if application is made by an agent, in cases under § 1.913 of this chapter.
- (iii) Name and type of ship;
- (iv) Official registry number of ship, if available;
- (v) Official call letters or radio call sign, if any, assigned to ship;
- (vi) Class of station desired (not required for renewal, nor for modification unless class of station is to be modified);
- (vii) Frequency assignment, authorized transmitter power(s), and authorized class or classes of emission desired (not required for renewal; required for modification only to the extent such information may be involved);
- (viii) Equipment to be used, specifying the manufacturer and model number (not required for renewal; required for modification only to the extent such information may be involved);
- (ix) Specific station(s) with which communication is desired (not required for renewal; otherwise required only when applicable under the Commission's rules);
- (x) Statement of facts which, in the opinion of the applicant, constitute an emergency to be found by the Commission for the purpose of this section, in-

cluding estimated duration of emergency.

(2) Each application for a station license submitted under the provisions of paragraph (a) of this section shall, in addition to the information specified in subparagraph (1) of this paragraph, contain such of the following information as is not already on file with the Commission:

- (i) Address of applicant;
- (ii) Address of agent, if application is made by an agent, in cases under § 1.913 of this chapter;
- (iii) Relation of applicant to owner of vessel;
- (iv) Factual statements to the extent necessary for the Commission to determine whether or not the granting of the desired authorization will be in accordance with the citizenship eligibility requirements of section 310 of the Communications Act.

(c) As provided by and in accordance with the provisions of paragraphs (a) and (b) of this section in respect to applications for a station license or modification or renewal of a station license, applications also may be filed, in cases of emergency involving danger to life or property or due to damage to equipment, for a permit to be issued by cable, telegraph, or radio for the operation of a station on board a ship at sea, and in the event the Commission finds such an emergency exists such permit may be granted to be effective in lieu of a station license until such ship shall return to a port of the continental United States.

#### § 83.43 Application precedent to hearing.

Whenever the Commission regards an application for renewal of license as essential to the proper conduct of a hearing or investigation and specifically directs that the licensee file such application by a certain date, the application shall be filed within the time thus specified. If the licensee fails to file such application within the prescribed time, the hearing or investigation shall proceed as if such renewal application had been received.

#### § 83.44 Failure to prosecute applications.

An applicant not desiring to prosecute his application may request that it be dismissed without prejudice. Where an applicant fails to respond

within a reasonable time to official correspondence or request for additional material, the application will be dismissed without prejudice.

**§ 83.45 Inconsistent or conflicting applications.**

When an applicant has an application pending or undecided, no other inconsistent or conflicting application filed by the same applicant, his successor or assignee, or on behalf of or for the benefit of said applicant, will be considered by the Commission.

NOTE: §§ 83.46 to 83.49, inclusive, relate only to ship radio installations required by law for safety purposes.

**§ 83.46 Application for inspection and certification.**

(a) Application for inspection and certification shall be submitted on the appropriate form as prescribed in this section to the Engineer in Charge of the radio district office nearest the desired place of inspection, at least 3 days in advance of the day on which inspection is desired. Such application shall be filed by the vessel owner, the vessel's operating agency, the ship station licensee, or the master of the vessel.

(b) FCC Form 801 shall be used to apply for annual inspection of radio stations on board ships subject to the provisions of part II of title III of the Communications Act or to the radio provisions of the Safety Convention. In the case of passenger ships, such inspection should coincide with the annual inspection of the ship by the United States Coast Guard. A service representative of the ship station licensee and (unless otherwise notified by the Commission's representative) sufficient personnel to lower and raise antennas and to launch any required radio equipped survival craft shall be available on the ship at the time inspection is to be performed. In the case of radiotelegraph stations, the service representative shall hold a radiotelegraph first- or second-class operator license; in the case of radiotelephone stations, the service representative shall hold a first- or second-class operator license, either radiotelegraph or radiotelephone.

(c) FCC Form 809 shall be used to apply for annual survey of radio stations on board ships subject to the provisions of the Great Lakes Radio Agreement.

(d) FCC Form 812 shall be used to apply for biennial inspection of radio

stations on board vessels subject to the provisions of part III of title III of the Communications Act.

**§ 83.47 Application for temporary waiver of annual inspection.**

(a) Informal application for temporary waiver of the annual inspection required under section 362(b) of the Communications Act, as provided in that section, shall be filed by the vessel owner, the vessel's operating agency, the ship station licensee, or the master of the vessel not earlier than 3 days in advance of the vessel's arrival at a United States port. The application shall be filed with the Commission's Engineer in Charge of the radio district office nearest the port of arrival, and shall include:

- (1) The ship's name and radio call sign;
- (2) The name of the first United States port of arrival directly from a foreign port;
- (3) The date of such arrival;
- (4) The date and port at which annual inspection will be formally requested to be conducted;
- (5) Reason for requesting waiver; and
- (6) An affirmation that the ship's required radio equipment is in effective operating condition.

(b) Temporary waiver of annual inspection may be granted in response to a properly filed application therefor, or may be issued by the Engineer in Charge on his own motion upon receipt of an application for annual inspection, for a period not to exceed 30 days from the time of first arrival of the ship at a United States port directly from a foreign port in cases where:

- (1) The duration of the vessel's scheduled stay in port is too short to permit completion of annual inspection during normal working hours;
- (2) The distance to the vessel would not permit completion of annual inspection, including travel time, during normal working hours;
- (3) Commission inspection personnel are not available to conduct the annual inspection during normal working hours;
- (4) Annual inspection in the port could probably not be completed inasmuch as, during normal working hours, the vessel is scheduled to load or discharge inflammable or unstable cargo or the exigencies of cargo handling renders required antennas unavailable; or
- (5) Replacement of the required radio equipment or a major component thereof

is scheduled to be made at the alternate port proposed for the annual inspection.

**§ 83.48 Extra compensation for overtime services by engineers in charge and radio engineers.**

(a) Pursuant to section 4(f)(3) of the Communications Act, Engineers in Charge and Radio Engineers of the Field Engineering 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 purposes of Part II of Title III of the act or the Great Lakes Agreement at night or on Sundays and holidays, shall 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 case 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" shall mean 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 shall not include any such time within the 24 hours of a Sunday or holiday. Each Sunday and each holiday shall 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 said Sunday or holiday will be considered as a single night. The term "holiday" shall include only national holidays, viz. January 1, February 22, May 30, July 4, the first Monday in September, November 11, Thanksgiving Day (when designated by the President), December 25, and such other days as

may be designated national holidays by the President or by 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 said 8 hours provided that the overtime is not less than 1 hour. The maximum amount which may be paid for such authorized overtime services on any one day other than on a Sunday or holiday shall 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 shall 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 such 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 shall 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 shall 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, total-

ling not more than 8 hours, extra compensation is payable equivalent to two days' 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 day's 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 shall apply the same as at official station. However, compensation for such overtime shall not include travel time.

(11) Assessments and collection of fees against steamship companies for overtime services shall 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 a form prescribed by the Commission shall be filed with the office being requested to furnish overtime services before such assignment can be made.

(13) Overtime services shall be billed to the steamship companies as soon as possible after the services have been performed and on collection voucher provided for that purpose. 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 exaction of extra compensation shall be forwarded to the Commission at Washington, D. C., and a copy thereof sent to the office which furnished the overtime services.

#### § 83.49 Application for exemption.

(a) Application for exemption from radio equipment and operator requirements, or for modification or renewal of exemption previously granted, shall be submitted by the vessel owner, the vessel's operating agency, or the master of the vessel to the Secretary, Federal Communications Commission, Washington, D. C., 20554, on the appropriate form

as prescribed in this section. In cases of emergency found by the Commission, the Commission may consider an informal application which should include the full information normally furnished on the formal application.

(1) FCC Form 820 shall be used for filing formal application for exemption from requirements of parts II or III of title III of the Communications Act, and/or the Safety Convention;

(2) FCC Form 820-A shall be used for filing formal application for exemption from requirements of the Great Lakes Radio Agreement.

(b) When an exemption under and in accordance with the provisions of the Safety Convention is granted by the Commission on behalf of a cargo ship, the Commission issues an Exemption Certificate to the vessel.

(c) When an exemption under and in accordance with the provisions of the Safety Convention is granted by the Commission on behalf of a passenger ship, the Commission certifies the necessary particulars to the United States Coast Guard, requesting that agency to issue an Exemption Certificate to the vessel.

NOTE: A list of general exemptions is contained in § 83.803.

#### § 83.50 Application for exceptional authority to communicate with amateur stations.

Upon proper application, including a supplemental statement as herein prescribed, the Commission may grant a license, modification of license, renewal of license, or special temporary authorization, permitting a ship telegraph station on board a vessel not engaged in commerce or a vessel used, or intended to be used, for scientific research or expedition, to transmit by means of class A1 or A2 emission on authorized ship telegraph frequencies within the band 2000 kc/s to 25,000 kc/s, for the purpose of exchanging radiotelegraph communications directly with licensed amateur stations on land in accordance with the provisions of § 83.70: *Provided*, The applicant includes a supplemental statement satisfactorily showing that:

(a) Unusual circumstances during the contemplated voyage(s) are anticipated which will make direct communication with amateur stations extremely bene-

ficial to persons on board the vessel or to the person(s) responsible for the scientific research or expedition for which the vessel is used or is intended to be used;

(b) The messages to be exchanged with amateur stations will contain no material relating directly or indirectly to a commercial transaction; and

(c) Transmission for this purpose will be conducted on a secondary basis so as to avoid interference to commercial message traffic and other authorized emissions of stations operating in the maritime radiolocation service.

FEEES

§ 83.53 Payment of fees.

(a) Each formal application for which a fee is prescribed in § 83.54 must be accompanied by a remittance in the full amount of the fee. In no case will an application for which a fee is prescribed be accepted for filing or processed prior to payment of the full amount specified. Applications for which no remittance is received, or for which an insufficient amount is received, may be returned to the applicant.

(b) Fee payments accompanying applications submitted to the Commission should be in the form of a check or money order payable to the Federal Communications Commission. The Commission will not be responsible for cash sent through the mails. All fees collected will be paid into the United States Treasury as miscellaneous receipts in accordance with the provisions of Title V of the Independent Offices Appropriation Act of 1952 (5 U.S.C. 140).

(c) Receipts will be furnished upon request in the case of payments made in person, but no receipts will be issued for payments sent through the mails.

(d) All fees will be charged irrespective of the Commission's disposition of the application. Applications returned to applicants for additional information or corrections will not require an additional fee when resubmitted. Refunds will be made only in the case of payments in excess of the fee prescribed in this subpart.

§ 83.54 Schedule of fees.

(a) Except as provided in paragraph (b) of this section, applications filed on or after January 1, 1964, under this part

shall be accompanied by the fees prescribed below:

All applications for radio station authorizations governed by this part.....	\$10
Applications for exemption from the radio equipment and operator requirements of Part II or Part III of Title III of the Communications Act of 1934, as amended, and/or the Safety of Life at Sea Convention, or application for modification or renewal of exemption previously granted thereunder.....	10
Application for exemption from the requirements of the Great Lakes Agreement, or modification or renewal thereof .....	10

(b) Fees are not required in the following instances:

- Applications filed pursuant to §§ 83.41 and 83.42 (informal applications for special temporary authority and applications in an emergency).
- Informal exemption applications filed pursuant to § 83.49 in cases of emergency.
- Applications for ship inspections pursuant to the Great Lakes Agreement, the Safety of Life at Sea Convention and Parts II and III, Title III, of the Communications Act of 1934, as amended.
- Applications filed by governmental entities.

Subpart C—Station Authorizations

§ 83.62 Changes in equipment of licensed stations.

A licensed transmitter on board ship may be modified without making application to the Commission and without specific authorization from the Commission: *Provided*, (a) the change does not result in operation inconsistent with the rules of the Commission nor with the terms of the outstanding authorization for the station involved; (b) the change does not result in any impairment of the ability of the station licensee or the owner, operating agency, or shipmaster, to comply with any duty or obligation imposed by statute or international treaty or agreement for purposes of safety; (c) a description of the change is incorporated in the next application for renewal or modification of license; and (d) changes in type accepted and type approved equipment are made in accordance with the applicable provisions in Part 2 of this chapter.

§ 83.63 License term.

(a) Licenses for stations in the maritime service are normally issued to ex-

pire at 3:00 a.m., e.s.t., five years from date of grant. Licenses, issued in response to applications filed prior to and including June 1, 1963, for ship stations subject to § 83.139(a) (2), will normally be issued to expire at 3:00 a.m., e.s.t., four years from date of grant.

(b) Unless otherwise directed by the Commission, each license, modification of license or renewal of license issued solely on the basis of an application filed in accordance with § 83.42 shall become effective at the time when granted by the Commission and shall expire at a time not beyond the period of the emergency found by the Commission as provided by that section; *Provided*, That each renewal license granted under the provisions of that section prior to expiration of the license which it will renew, shall become effective only upon expiration of the latter license.

(c) A permit for the operation of a station on board a ship at sea, issued by cable, telegraph, or radio, as the result of an application therefor filed under the provisions of § 83.42 shall become effective at the time when granted by the Commission and shall be effective, in lieu of a station license until such ship first arrives at a port of the continental United States subsequent to the time of issuance of such permit.

(d) A license for a developmental station on board ship shall be issued specifically upon a temporary basis for a period beginning at 3:00 a. m. e. s. t. and not exceeding one year from the date on which it becomes effective.

(e) Each special temporary authorization granted on the basis of an application filed under the provisions of § 83.41 shall be issued specifically upon a temporary basis for a specified period of time designated in such authorization and not extending beyond expiration of the outstanding license of the particular station to which it applies or otherwise not exceeding the normal license term of stations of the particular class and in the particular service designated in such special temporary authorization.

(f) An interim ship station license granted under the provisions of § 83.64 shall become effective when issued and shall expire at 3:00 a.m., e.s.t., on a date six months from the date of grant, unless terminated earlier by the Commission pursuant to the provisions of § 83.64.

#### § 83.64 Interim ship station license.

Upon request made in accordance with § 83.35, an interim ship station license may be granted by the Commission at its main office in Washington, D.C., or at any of its Engineering Field Offices to authorize the use of a ship station for telephony and/or radar in conformity with the conditions and limitations of §§ 83.369 and 83.405(a) for an interim period of six months pending action by the Commission at Washington, D.C., on the related formal application for regular ship station license or modification of license filed as prescribed by §§ 83.35 and 83.36. Unless otherwise directed by the Commission in exceptional circumstances, an interim ship station license shall not be renewed and the authority conferred by such license may be terminated, without hearing, at any time prior to its normal expiration date if, in the discretion of the Commission, the need for such action arises.

#### § 83.65 Issuance of modified and renewed license simultaneously.

When an application is granted by the Commission which necessitates the issuance of a modified station license to become effective less than 60 days prior to the expiration date of the license sought to be modified, and when an application for renewal of said license is granted subsequent or prior thereto, but within 30 days of the date of expiration of the outstanding license, the modified license as well as the renewed license shall be issued as one document in accordance with the combined action of the Commission.

#### § 83.66 One license for plurality of stations.

(a) Unless otherwise determined by the Commission in exceptional circumstances, one station license may be granted to authorize the use and operation of a designated maximum number of stations in the maritime mobile service—normally in multiples of ten stations—on board two or more ships of the United States which do not engage on voyages to any foreign country whenever telephony is the sole type of transmission authorized and the following license elements are the same for each station and the requirements speci-

fied in paragraph (b) of this section are fulfilled:

- (1) The station licensee;
- (2) The conditions which establish and maintain control of the station by the station licensee;
- (3) The class of station and nature of service;
- (4) The type(s) of transmitting equipment to be authorized (different types of transmitting equipment, which are recognized by the Commission as being equivalent on an engineering basis, shall, for the purpose of this section, be considered as the same type);
- (5) The authorized transmitter-power of identical types of transmitting equipment to be authorized;
- (6) The frequency assignment and the authorized transmitter-power and class or classes of emission authorized on each radio-channel.

(b) The issuance of one station license as provided in paragraph (a) of this section shall be contingent upon compliance by the applicant and station licensee with the following requirements:

- (1) The licensee shall, at the time the application(s) for license is(are) filed and during the entire period in which the station license is valid, keep the Commission at Washington, D. C. and the Commission's Engineer in Charge of each radio district in which the stations are operated currently informed in writing of the names, registration number and respective classes of ships which are provided with stations authorized in accordance with the terms of the station license;
- (2) The transmitting equipment is not installed on board ship for the purpose of complying with the provisions of any statute or international agreement requiring the installation or use of such equipment for safety purposes;
- (3) The transmitting equipment shall not be authorized in any other instrument of authorization issued by the Commission.

**§ 83.67 Transfer or assignment of station authorization (see also § 83.37).**

Section 310(b) of the Communications Act expressly provides that a station license granted by the Commission, the frequencies authorized to be used by the licensee, and the rights therein granted shall not be transferred, assigned, or in any manner either voluntarily or invol-

untarily disposed of, or indirectly by transfer of control of any corporation holding such license, to any person, unless the Commission shall, after securing full information, decide that said transfer is in the public interest, and shall give its consent in writing.

**§ 83.68 Authority for survival craft stations.**

Authority to operate a survival craft station will be granted only when the parent vessel is equipped with and authorized to operate a ship station.

**§ 83.69 Authority for transmission from cable buoy.**

Provided the transmitting equipment to be used on a cable marker buoy is adequately described and the necessary technical data is supplied in an application for station license for a ship station on board a cable repair ship with which the buoy is associated, the use of such transmitting equipment for radiolocation in accordance with § 83.403 will be specifically authorized by the related ship station license.

**§ 83.70 Authority to communicate with amateur stations.**

(a) A ship station shall not communicate with or transmit to any amateur station unless it is specifically authorized by the Commission to do so. When authorized to communicate with duly licensed amateur stations, a ship station shall conduct all operation for this purpose in conformity with the relevant terms of its station license and, except as otherwise permitted by the station license, shall for this purpose,

- (1) Transmit by means of A1 or A2 emission only on a frequency between 2000 kc/s and 25,000 kc/s authorized for such emission;
- (2) Not cause harmful interference to stations in the maritime mobile service nor to stations in the radiolocation service;
- (3) Not engage in any communications relating directly or indirectly to a commercial transaction.

(b) Communication with amateur stations of foreign countries shall be limited to communications with such amateur stations as are authorized to communicate with the ship station concerned; in addition, the nature of the communications exchanged with foreign amateur stations shall, in addition to the

requirements of paragraph (a) of this section, be in accordance with the International Radio Regulations and in conformity with the regulations of the foreign administration(s) having jurisdiction over the amateur station(s) involved.

**§ 83.71 Limitations concerning stations of portable nature (other than marine-utility stations).**

Advance notice in writing or by telegram shall be given to the Commission and to the Engineer in Charge of the radio district where the operation is to take place by the licensee of a station of a portable nature (other than a marine-utility station) authorized for use on board ship prior to any operation contemplated on board a particular ship. Such notice shall state the call sign of such station, name of licensee, approximate date(s) of intended operation on board the designated ship, and the geographic area in which the ship is to be navigated. A station of a portable nature, (other than a marine-utility station) authorized to be operated on board a ship or ships, shall not be retained on board any one ship during any continuous period exceeding three months without giving further notice to the Commission and to the Engineer in Charge of the radio district where the operation is to take place: *Provided*, That the foregoing requirements shall not apply to operation of a station of a portable nature on board small boats (tenders, dories, lifeboats, etc.), which are regularly associated with a parent ship, when such station is specifically identified in the license of such parent ship.

**§ 83.72 Authority for ship-radar station.**

Any license issued for a ship-radar station shall be subject to the condition that the station licensee in relation to the proper operation of the station in accordance with the radio law and rules and regulations of the Commission, will be represented on board the radar-equipped vessel by the person who at any given time occupies the position of master.

**§ 83.73 Permanent discontinuance of station operation.**

In case of permanent discontinuance of operation of a station on board ship in the maritime mobile service or the maritime radiolocation service, the li-

censee of that station shall, as soon as possible, return the station license to the Secretary, Federal Communications Commission, Washington, D.C., 20554, and shall as soon as possible, request by telegram or letter addressed to the Secretary that such license be cancelled. In the event, however, that such license is not available for this purpose, the licensee shall, by telegram or letter, inform the Secretary of that fact stating the reason why the license is not available, and shall request that the license be cancelled. If the station is within the United States, a copy of each telegram or letter sent to the Secretary pursuant to this section shall be forwarded at the same time to the Commission's Engineer in Charge of the radio district in which the station then is located.

**§ 83.74 Assignment of call signs.**

(a) Ship stations in the maritime mobile service other than those designated in paragraphs (b), (c), (d) and (e) of this section shall be assigned call signs consisting of four-letter combinations commencing with the letter "K" or the letter "W". (Examples: KBBCD or WBDC.)

(b) Ship stations authorized to use telephony (except those specified in paragraph (c) of this section), but not authorized to use telegraphy except secondarily for purposes incidental to the use of telephony, located on board ships whose survival craft being carried, if any, are not authorized to operate radio transmitting equipment, shall be assigned call signs consisting of two-letter, four-digit combinations (the digits 0 and 1 may not immediately follow a letter) beginning with WA2000 and progressing numerically through WA9999 and beginning again with WB2000 and progressing thus through the "W" series of prefixes. In cases of vessels having or eligible for signal letters assignable by the United States Treasury Department, the Commission may, if it deems such action necessary or desirable, make exceptions to the foregoing provisions and assign call signs of such character as is legally permissible and as it may deem appropriate in each particular case.

(c) Normally, an individual call sign shall be assigned to each ship (other than survival craft attached to a parent ship) carrying a station licensed in the maritime mobile service, provided that a single call sign shall be assigned to a plu-

ality of stations authorized by one station license in accordance with § 83.66 whenever such stations are easily identified by means other than call signs and their signal of identification or characteristics of emission are published, when required by international agreement, in appropriate international documents.

(d) Stations of lifeboats, liferafts and other survival craft carried aboard ships shall be assigned call signs consisting of the call sign that has been assigned, or that would be assigned, to the ship station located on board that particular parent ship, followed by two digits (the digits 0 and 1 may not immediately follow a letter). (Example: If the call sign that has been assigned, or would be assigned, to a ship station on board a parent ship is KBCD, the survival craft station shall be KBCD followed by two digits, such as KBCD 45.)

(e) Ship-radar stations shall be assigned call signs for administrative purposes only. Such stations located on board ships having a ship station licensed in the maritime mobile service shall be assigned the same call sign as that ship station. If in a particular case the ship has no ship station licensed in the maritime mobile service, the ship-radar station shall be assigned a call sign consisting of a two-letter, four-digit combination (the digits 0 and 1 may not immediately follow a letter) beginning with the letter "W". (Examples: If a ship station licensed in the maritime mobile service with call sign WA2000, or KBCD, or WBCD, the ship-radar station call sign shall be respectively, WA2000, or KBCD, or WBCD. If the ship has no station licensed in the maritime mobile service, the ship-radar station call sign shall be of the type WA2000.) In case of a ship having, or eligible for, signal letters assignable by the United States Treasury Department, the Commission may if it deems such action necessary or desirable, make exceptions to the foregoing provisions and assign a call sign of such character as is legally permissible and as it may deem appropriate in each particular case.

(f) Each station license issued to authorize the use and operation of one or more marine-utility stations shall designate a single call sign consisting of two letters (taken from the group KA through KZ) followed by four digits (the digits 0 and 1 may not immediately follow a letter).

### § 83.75 Operation during emergency.

(a) The licensee of any ship station or developmental station in the maritime mobile service on board ship, may, during a period of emergency in which the normal communication facilities are disrupted as a result of hurricane, flood, earthquake, or similar disaster, utilize such station for emergency communication service in communicating in a manner other than that specified in the instrument of authorization or in the rules and regulations governing the maritime mobile service: *Provided*, (1) That as soon as possible after the beginning of such emergency use, notice shall be sent to the Commission at Washington, D.C., and to the Commission's Engineer in Charge of the district in which the station is located, stating the nature of the emergency and the emergency use being made of the station; (2) that such emergency use of the station shall be discontinued as soon as substantially normal communication facilities are again available; and (3) the Commission and the Engineer in Charge be notified immediately when such special use of the station is terminated: *And provided further*, That in no event shall any ship station or developmental station on board ship engage in emergency transmission on frequencies other than, or with power in excess of, that specified in the instrument of authorization or as otherwise expressly provided for by the Commission, or by law: *And provided further*, That the Commission may, at any time, order the discontinuance of any such emergency communication undertaken under this section.

(b) The Commission may authorize the licensee of any radio station governed by this part during a period of national emergency to operate its facilities upon such frequencies, with such power and points of communication, and in such a manner beyond that specified in the station license as may be requested by the Army, Navy, or Air Force.

### Subpart D—General Station Requirements

#### § 83.101 Inspection of station.

(a) Pursuant to section 303(n) of the Communications Act, the radio installation on board any ship of United States registry shall be available for inspection by duly authorized representatives of the Commission at any reasonable time and

at such frequent intervals as within the discretion of the Commission will insure compliance with applicable regulations, laws, and treaties.

(b) The governments or appropriate administrations of countries, where a ship equipped with a radio station calls, may require the production of the station license for examination. The operator of the station, or the person responsible for the station, must facilitate this examination. The station license must be available so that it can be produced without delay. When the license cannot be produced or when manifest irregularities are observed, governments or administrations may inspect the radio installation in order to satisfy themselves that the installation conforms to the conditions imposed by the International Radio Regulations.

#### § 83.102 Posting station licenses and transmitter identification cards or plates.

(a) Except for certain stations to which paragraphs (b) or (c) of this section are applicable, the original license for each station on board ship subject to this part shall be conspicuously posted at the principal location on board at which each such station is operated: *Provided*, That when a ship is fitted with two or more stations authorized by a single license document:

(1) The original license shall be conspicuously posted at the principal operating location of the compulsorily-provided station;

(2) If no station is compulsorily-provided, the original license shall be conspicuously posted at the principal operating location of any station authorized for telephony.

(b) With respect to stations of a portable nature, including marine-utility stations but excluding stations authorized in accordance with § 83.66, where posting of the station license is impracticable, the requirement of paragraph (a) of this section shall not apply: *Provided*, That in lieu thereof the original station license or a photocopy thereof is retained on board the vessel (other than survival craft carried on board a parent ship) during the entire time the station is located thereon.

(c) A current license authorizing a plurality of stations, pursuant to § 83.66, shall be retained by the licensee at any location where it is readily accessible for inspection. In addition, an executed

Transmitter Identification Card (FCC Form 452-C) or a plate of metal or other durable substance, legibly indicating the call sign and the licensee's name and address, shall be affixed, readily visible for inspection to each transmitter: *Provided*, That if the transmitter is not in view of the operating position or is not readily accessible for inspection, then such card or plate shall be affixed to the control equipment at the principal transmitter operating position or posted adjacent thereto.

(d) Notwithstanding the provisions of paragraphs (a), (b), and (c) of this section, notification by telegram or by letter, in each case by the Secretary of the Commission, stating that the Commission has granted an appropriate station authorization, may be posted in lieu of such authorization if the latter has not yet been received by the station licensee or permittee: *Provided*, That as the result of an official inspection of the station by an authorized representative of the Commission the posting of such notification may not be accepted in lieu of the formal station authorization until additional information pertaining thereto, as may be deemed necessary by that representative for purposes of official inspection, has been obtained from the Commission at Washington, D. C.

#### § 83.103 Location of station.

All components of a station on board ship subject to this part, including the antenna(s), antenna supporting structures, and source(s) of power used to energize the station equipment, shall be located on board the vessel identified in the station license, even though the vessel be temporarily moored. For purposes of communication, no component of a ship station shall be connected by wire line directly or indirectly to any equipment, apparatus, or facilities which are not located entirely on board the vessel identified in the station license: *Provided*, That the limitations of this section shall not apply (a) when the station is being operated in an emergency under the provisions of § 83.75, or (b) when it is necessary, while the ship is temporarily moored, to energize one or more components of a main installation or an emergency installation by means of a source of power not located on board the ship, for the purpose of assuring compliance with any applicable safety radio requirement of law.

### § 83.104 Operating controls.

(a) In each ship station, operating controls shall be readily available at the principal operating location of the station for instant use by the authorized operator in accordance with the provisions of § 83.154, whenever the station is being used for transmission, capable of being used to:

(1) Commence and discontinue normal operation of the station;

(2) Change normally from each operating radio-channel to any other associated operating radio-channel in the same characteristic portion of the spectrum; and

(3) Change normally from transmission to reception and vice-versa.

(b) Every ship station using telegraphy for normal traffic shall be provided with a device permitting change-over from telegraph transmission to telegraph reception and vice versa without manual switching. In addition, these stations should be able to listen on the reception frequency during the course of periods of transmission.

(c) Every ship station using telephony shall, when an authorized operator is present at the principal operating location, be capable of change-over from telephone transmission to telephone reception and vice-versa within a total period of two seconds under circumstances which do not require a change in operating radio-channel at the same time.

(d) Every ship station shall, during its hours of service and when the authorized operator is present at the principal operating location, 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 required or after the necessity arises for emission to cease.

(e) Each ship station using a multi-channel installation for telegraphy (except equipment intended for use only in emergencies on frequencies below 515 kc/s) shall, when the authorized operator is present at the principal operating location, be capable of changing, after the need to do so occurs, from each operating radio channel to any other operating radio channel for transmission or reception by means of telegraphy within:

(1) A period of five seconds if the particular radio channels are within the

same characteristic portion of the spectrum; or

(2) A period of fifteen seconds if the particular radio channels are not within the same characteristic portion of the spectrum.

(f) Every ship station and marine-utility station using a multi-channel installation for telephony shall, when the authorized operator is present at the principal operating location, be capable of changing, after the need to do so occurs, from one operating radio-channel to another operating radio-channel for transmission or reception by means of telephony within:

(1) A period of five seconds, when changing from the calling frequency to a working frequency and vice versa within the band 1600–4000 kc/s; or

(2) A period of three seconds, when changing from the calling frequency to a working frequency and vice versa within the band 156–174 Mc/s.

(g) Whenever the same radio-channel is used for radiotelephone transmission and reception, means shall be provided so that transmission of the carrier wave may be either automatically "voice-controlled" or controlled manually by the person whose speech is being transmitted.

(h) (1) Subject to the provisions of subparagraph (2) of this paragraph, each ship station using telegraphy on frequencies within the band 405 kc/s to 535 kc/s must, with respect to the use of any transmitter capable of a plate input power in excess of 450 watts and completed in construction subsequent to January 1, 1952, be provided with an arrangement readily permitting the use of a plate input power for telegraphy which is not in excess of 200 watts. Each such transmitter shall be furnished with a durable nameplate with the month and year of its completion permanently inscribed thereon.

(2) The requirement of subparagraph (1) of this paragraph shall not apply when there is available in the same station a duly authorized radiotelegraph transmitter capable of operation on the international calling frequency 500 kc/s and at least one working frequency within the band 405 kc/s to 485 kc/s, capable of being energized by a source of power other than an emergency power supply installed for compliance with applicable provisions of treaty or statute, and not capable of a plate input power in excess

of 450 watts when operated on such frequencies.

**§ 83.105 Required radio channels for telegraphy.**

(a) Each ship station using telegraphy on frequencies within the band 405–535 kc/s shall be capable of transmitting and receiving classes A1 and A2 emission on the frequency 500 kc/s, and on at least two working frequencies within this band. When a radiotelegraph installation is compulsorily fitted for safety purposes, a fourth frequency within this band which is authorized specifically for direction finding must be provided also.

(b) Each ship station using telegraphy on frequencies within the band 90–160 kc/s shall be capable of transmitting and receiving class A1 emission on the frequency 143 kc/s, and on at least two additional frequencies within this band (except within the band 140–146 kc/s) which are authorized for working.

(c) Each ship station using telegraphy on the specific frequencies in the bands between 4000 and 27,500 kc/s authorized by the International Radio Regulations, Geneva, 1959, exclusively for the maritime mobile service shall, in each of the bands for which facilities are provided to carry on its service, be capable of transmitting and receiving class A1 emission on at least one frequency authorized for calling and at least two frequencies authorized for working.

(d) Each ship station using, when in Region 2, telegraphy on frequencies within the band 2065–2107 kc/s shall be capable of transmitting and receiving class A1 emission on at least one frequency in this band authorized for working in addition to a frequency in this band authorized for calling.

**§ 83.106 Required radio channels for telephony.**

(a) Each ship radiotelephone station licensed to operate in the band 1605–3500 kc/s shall be able to transmit and receive on the frequency 2182 kc/s, and if used for other than safety communication shall be capable also of transmitting and receiving on at least two working frequencies within this band.

(b) Each ship radiotelephone station which operates in the band 156–174 Mc/s shall be able to transmit and receive on the frequencies 156.3 Mc/s and 156.8 Mc/s.

(c) The requirement contained in paragraph (b) of this section shall not

be applicable when such station is equipped to operate on only one of the frequencies 156.35, 156.9, or 156.95 Mc/s.

(d) Upon the express condition that harmful interference shall not be caused to the service of any maritime mobile station which is operated in accordance with the provisions of paragraph (b) of this section, the requirement contained in paragraph (b) of this section shall not be applicable when a ship station is equipped to operate:

(1) On only one of the frequencies 157.2, 157.25, 157.3, 157.35, or 157.4 Mc/s; or

(2) On 156.65 Mc/s only, and the station is also capable of operation on the frequency 500 kc/s and two working frequencies in the band 415–515 kc/s, or the frequency 2182 kc/s and two working frequencies for telephony in the band 1605–3500 kc/s.

(e) The exception provided in subparagraph (2) of paragraph (d) of this section does not apply in the Great Lakes area.

**§ 83.107 Antenna requirements.**

(a) The antenna(s) of each public ship station and of each ship station compulsorily provided on board a vessel for safety purposes pursuant to statute or international agreement shall, insofar as is practicable in each case, have electrical characteristics that will, in conjunction with the particular transmitting apparatus employed, assure good efficiency in the conversion of antenna power to radiated power.

(b) All emission of a ship station, or a marine-utility station on board ship, using telephony on any frequency assignment within the frequency-band 30 Mc to 200 Mc normally shall be polarized vertically at the source when the vessel carrying the station is in a normal vertical plane: *Provided*, The Commission may authorize the use of any other form of polarization in addition to or in lieu of vertical polarization if the applicant or station licensee makes a satisfactory showing that such authorization is necessary for effective communication or reduction of interference and would be beneficial to reception of the emission by other stations in the maritime mobile service.

(c) When a ship station is operating on any carrier frequency below 25 Mc/s authorized for radiotelephony and the effective operation of the antenna employed is not independent of a ground

connection on the frequency in use, the radio station ground system of each such ship station for operation on such frequency shall consist of:

(1) An effective radio ground to the hull for a vessel having a metallic hull, or

(2) In the case of a vessel not having a metallic hull, the most effective radio ground practicable under the circumstances. Preferably the ground shall be to a bare plate or strips, or a combination thereof, of corrosion-resistant metal of at least 12 square feet in aggregate area affixed to the hull below the waterline.

#### § 83.108 Adjustment of equipment.

The transmitting equipment of each station subject to this part shall be operated, tuned, and adjusted so that there will be no radiation of emissions outside the authorized frequency-band that causes harmful interference or is capable of causing harmful interference to the service of any other station. Any spurious emissions, including radio frequency harmonics and audio frequency harmonics, shall be maintained at the lowest practicable level.

#### § 83.109 Modulation requirements.

(a) Transmitters using A3 emission shall be capable of proper technical operation with modulations of 75 percent on peaks but not more than 100 percent on negative peaks.

(b) Transmitters using F1, F2, or F3 emission shall be capable of proper technical operation with a frequency deviation of 15 kc/s, which is defined as 100 percent modulation.

#### § 83.110 Maintenance of transmitter power.

(a) The actual power of each radio transmitter in a ship station shall be maintained within the following tolerance of the specific power authorized by the Commission for that transmitter:

(1) When the maximum authorized transmitter power only is indicated, the actual power shall, insofar as is practicable, not be more than that necessary to carry on the service for which the station is licensed and in no event more than 20 percent above the maximum power authorized;

(2) When the exact authorized transmitter power is indicated the actual power shall, whenever the transmitter is being operated, be within the limits

of 120 percent and 80 percent of the authorized power.

(b) For the purpose of assuring adherence to the requirement of paragraph (a) of this section, each radio transmitter in a ship station which is rated by the manufacturer as being capable of a plate input power in excess of 200 watts or an antenna power in excess of 100 watts shall be fitted with the instruments necessary to determine the actual plate power to the transmitter whenever the latter is in use.

#### § 83.111 Transmitter measurements.

(a) The carrier frequencies of each transmitter shall be determined to be within the prescribed tolerance as follows:

(1) When the transmitter is initially installed;

(2) When any change is made in the transmitter which may affect the carrier frequencies or stability thereof;

(3) Upon receipt of an official notice of off-frequency operation.

(b) When the manufacturer's rated power of a ship transmitter is more than 120 percent of the maximum authorized power the actual power shall be determined as follows:

(1) When the transmitter is initially installed;

(2) When any change is made in the transmitter which may increase its power.

(c) A determination shall be made that each radiotelephone transmitter produces peak modulation between 75 and 100 percent insofar as practicable as follows:

(1) When the transmitter is initially installed;

(2) When any change is made in the transmitter which may affect its modulation characteristics.

(d) The determinations required by paragraphs (a) and (c) of this section may be made at a test or service bench, provided the load conditions are equivalent to those of actual operation.

(e) The results of the determinations of paragraphs (a), (b), and (c) of this section shall be entered in or made a part of the station log.

#### § 83.112 General requirements for receiving apparatus.

The radio equipment of each ship station, or marine-utility station, using telegraphy or telephony, must be capable of permitting the reception of the class

or classes of emission on the frequency or frequencies, normally received for the service carried on. The technical arrangement of the station apparatus shall be such that the necessary reception of emissions, including in particular that necessary for compliance with the provisions of §§ 83.181 and 83.240, can be readily effected prior to the transmission of any signals or communications by the ship station on the associated transmitting frequency.

#### § 83.113 Installation of power source.

The exact location and physical arrangement on board a vessel of any storage battery, or engine-driven generator and fuel tank, used as a source of power for any component of a licensed radio station subject to this part and located on board such vessel, and the method of ventilating the battery or engine compartment, shall be in accordance with applicable rules or regulations promulgated by the United States Coast Guard. If the Commission finds that such rules or regulations are not complied with by a particular station of this category, an application for license or modification or renewal of license thereafter filed in behalf of that station may be designated by the Commission for hearing to determine whether or not the granting of such application would meet the public interest, convenience or necessity.

**NOTE:** Inquiries concerning applicable regulations of the Coast Guard may be addressed to The Commandant, United States Coast Guard, Washington, D.C., 20226, or to the nearest District Headquarters Office of the Coast Guard.

#### § 83.114 Clock required.

(a) Each ship station not required by law to be installed, which is licensed to operate on frequencies below 515 kc/s, shall be provided with a reliable clock equipped with a seconds hand, preferably a sweep seconds hand. This clock shall be securely mounted in such a position that the entire dial can be easily and accurately observed by the operator from his normal operating position, from the operating position at which he would ordinarily transmit the international radiotelegraph alarm signal by hand, and from the position used for testing the radiotelegraph auto alarm (if installed) for response to signals from the testing device.

(b) Each ship station not required by law to be installed, which is licensed to operate only on frequencies above 1500 kc/s, shall, as may be necessary during operation, have available to the operator a reliable clock or timepiece, preferably equipped with a seconds hand.

#### § 83.115 Retention of radio station logs.

(a) All station logs which are required under those provisions of this part pertaining to the particular classes of stations subject to this part shall be retained by the licensee for a period of one year from date of entry and for such additional periods as required by the following subparagraphs:

(1) Station logs involving communications incident to a distress or disaster shall be retained by the station licensee for a period of 3 years from date of entry;

(2) Station logs which include entries of communications incident to or involved in an investigation by the Commission and concerning which the station licensee has been notified shall be retained by the station licensee until such licensee is specifically authorized in writing by the Commission to destroy them;

(3) Station logs incident to or involved in any claim or complaint of which the station licensee has notice shall be retained by such licensee until such claim or complaint has been fully satisfied or until the same has been barred by statute limiting the time for the filing of suits upon such claims.

**NOTE:** See Part 42 of this chapter concerning preservation of records of common carriers.

(b) Station logs shall be made available to an authorized representative of the Commission upon request.

(c) Ship station logs shall be fully completed at the end of each voyage and before the operator(s) (or other person(s) responsible under the applicable provisions of this part) leave the ship. The radio log currently in use shall be kept by the licensed operator(s) of the station or as otherwise authorized by the applicable provisions of this part, and during use shall be located in the principal radio operating room of the vessel. At the conclusion of each ocean voyage terminating at a port of the United States (includes Puerto Rico, and Virgin Islands), the original radio log (or a duplicate thereof) dating from the

last departure of the vessel from a United States port shall be retained under proper custody on board the vessel for a sufficient period of time (not more than 24 hours) to be available for inspection by duly authorized representatives of the Commission. After retention on board the vessel as herein stipulated, the original log (and the duplicate log if provided) may be filed at an established shore office of the station licensee, and shall be retained as stipulated by paragraph (a) of this section.

NOTE: Duplicate logs are not required by the provisions of this paragraph, unless the original log is removed prior to opportunity for official inspection.

(d) Logs of ships of the United States containing entries required to be made by reason of the Great Lakes Agreement or § 83.368(c) of this part shall be kept at the principal radiotelephone operating location while the vessel is being navigated. All entries in their original form required by said agreement or § 83.368(c) shall be retained on board the vessel for a period of not less than one month from the date of entry. After retention on board the vessel as herein stipulated, the entries shall be filed at a place where they will be readily available to an authorized representative of the Commission upon request, and shall be retained as stipulated by paragraph (a) of this section.

**Subpart E—Standard Technical Requirements**

**§ 83.131 Authorized frequency tolerance.**

(a) Unless the particular instrument of authorization specifically provides otherwise, the frequency tolerances authorized for stations on board ships subject to this part shall be as prescribed in paragraphs (b) through (e) of this section.

(b) Authorized frequency tolerances for ship and survival craft stations operating on frequencies below 515 kc/s or within the frequency band 1600–27,500 kc/s:

<i>Frequency ranges</i>	<i>Tolerance Parts in 10<sup>6</sup></i>
(1) From 100 to 515 kc/s (except for transmitters of the classes specified in (2) and (3) below)-----	1000

<i>Frequency ranges</i>	<i>Tolerance Parts in 10<sup>6</sup></i>
(2) From 100 to 515 kc/s; emergency transmitters only, the use of which is confined solely to safety communication as defined in § 83.6(a)-----	3000
(3) Survival craft stations on 500 kc/s-----	5000
(4) Ship stations from 1600 to 2070 kc/s and 2080 to 3500 kc/s-----	200
(5) Ship stations from 2070 to 2080 kc/s-----	50
(6) Survival craft stations on 2182 kc/s-----	200
(7) Stations when using frequencies within the band 4000 to 27,500 kc/s: Ship stations using class A1 emission-----	200
Ship stations using other than A1 emission-----	50
Survival craft stations on 8364 kc/s-----	200

(c) Authorized frequency tolerances for ship and survival craft stations operating on frequencies above 30 Mc/s:

<i>Frequency ranges</i>	<i>Tolerance Parts in 10<sup>6</sup></i>
(1) From 30 to 50 Mc/s: For stations licensed to operate with a plate input power not in excess of 3 watts-----	200
For all other stations-----	100
(2) From 100 to 200 Mc/s except for 121.5 Mc/s: <sup>1</sup> Until Jan. 1, 1964 for ship stations-----	50
On and after Jan. 1, 1964 for ship stations-----	20
(3) Survival craft stations on 121.5 Mc/s-----	50

<sup>1</sup> Transmitters with a plate power input not in excess of 3 watts are permitted a tolerance of 100 parts in 10<sup>6</sup> until Jan. 1, 1966. After that date a tolerance of 20 parts in 10<sup>6</sup> is applicable.

(d) For stations in the maritime radiodetermination service (other than ship radar stations) the authorized frequency tolerance shall be specified in the instrument of authorization.

(e) The frequency tolerance authorized for ship radar stations is prescribed as follows: The frequency at which maximum emission occurs shall be within the authorized frequency band and shall not be closer than 1.5/T megacycles per second to the upper and lower limits of the authorized frequency band, where "T" is the pulse duration in microseconds.

§ 83.132 Authorized classes of emission.

(a) When the class of emission is specifically designated in the instrument of authorization, stations on board ship

subject to this part shall use emission in conformity with the terms of that document. Otherwise, such stations are authorized to employ classes of emission as follows:

<i>Frequency band</i>	<i>Classes of emission</i> <sup>1</sup>
(1) Stations using telegraphy:	
100 to 160 kc/s-----	A1; and for brief testing A0.
160 to 515 kc/s-----	A1, A2, <sup>2</sup> A2a, <sup>2</sup> A2b; <sup>2</sup> and for brief testing A0.
2085 to 2070 kc/s and 2080 to 25,000 kc/s.	A1; and for brief testing A0. Survival craft stations may, in addition, use class A2 emission.
2070 to 2080 kc/s-----	Wide band telegraphy, facsimile and special transmission systems. Manual International Morse code and telephony; are excluded.
(2) Stations using telephony:	
1600 kc/s to 30 Mc/s <sup>3</sup> --	A3, A3a, A3b; for brief operating signals A1, A2, A2a, A2b; and for brief testing A0.
30 to 50 Mc/s-----	A3, A3a, A3b, F3; for brief operating signals A1, A2, A2a, A2b, F1, F2; and for brief testing A0, F0.
121.5 Mc/s-----	A2 for survival craft stations.
156 to 174 Mc/s-----	F3; for brief operating signals F1 and F2; and for brief testing F0.
For other frequencies or frequency bands.	As designated in the station authorization.
(3) Ship-radar stations:	
Above 3000 Mc/s-----	P0.
(4) Stations of any category not designated in subparagraphs (1), (2), and (3) of this paragraph shall use the class or classes of emission specified in the particular station authorization.	

<sup>1</sup> The letter "a" following class A2 or A3 emission means the emission of a single sideband, with reduced carrier. The letter "b" following class A2 or A3 emission means the emission of two independent sidebands, with reduced carrier.

<sup>2</sup> Permissible by keying the modulated emission. Keying the modulating audio frequency only, without interruption of the carrier wave, is not permissible. The use of any audio-frequency pulse device such as a so-called "chopper" is prohibited except for stations of survival craft.

<sup>3</sup> See § 83.366 (a) (3).

(b) Classes of emission not authorized in paragraph (a) of this section may be authorized by the Commission in special circumstances, subsequent to a satisfactory showing by the applicant of a need therefor and provided harmful interference will not result from the use thereof. Each application requesting such special authorization shall fully describe the emission desired to be used, shall indicate the emission-bandwidth required for effective operation, and shall state the purpose for which such emission is required.

NOTE: For information regarding the classification of emissions and the calculation of the bandwidth, reference should be made to Part 2 of this chapter.

§ 83.133 Authorized emission-bandwidths.

(a) When the authorized emission-bandwidth is specifically designated in the instrument of authorization, a station on board ship subject to this part shall use emission-bandwidth(s) in conformity with the terms of that document. Otherwise, such stations shall use emission-bandwidths not exceeding those set forth in this section for the respective classes of emission authorized in § 83.132.

(b) The authorized emission-bandwidths hereinafter designated are established in relation to the operational factors set forth in the following subparagraphs:

(1) Class A0 emission means the incidental radiation of an unmodulated

carrier wave from a station which is authorized to use normally an amplitude-modulated wave;

(2) Class A1 emission means a carrier wave (without the use of modulating audio frequency) keyed normally for telegraphy so as to transmit intelligence in the International Morse Code at a speed not exceeding 40 words per minute, with the average word composed of 5 letters;

(3) Class A2 emission means a carrier wave amplitude-modulated at audio frequency not exceeding 1250 cycles per second, the modulated carrier wave being keyed normally for telegraphy so as to transmit intelligence in the International Morse Code at a speed not exceeding 40 words per minute, with the average word composed of 5 letters. (The authorized emission-bandwidths for classes A2, A2a, and A2b emission are designated hereinafter on this basis);

(4) Class A3 emission means a carrier wave amplitude-modulated at audio frequencies corresponding to those necessary for intelligible speech transmitted at conversational speed. (The authorized emission-bandwidths for classes A3, A3a, and A3b emission are designated hereinafter on this basis);

(5) Class F0 emission means the incidental radiation of an unmodulated carrier wave from a station which is authorized to use normally a frequency-modulated wave;

(6) Class F1 emission means a continuous wave (without the use of modulating audio frequency), the frequency of which is alternately shifted between the normal value and another specific value, by keying normally for telegraphy, so as to transmit intelligence in the International Morse Code. The authorized bandwidth for class F1 emission is designated hereinafter on the basis of the bandwidth authorized for class F2 emission;

(7) Class F2 emission means a continuous wave frequency-modulated at such audio frequency and with such deviation ratio as to not exceed the

authorized emission-bandwidth, the modulating frequency being keyed normally for telegraphy so as to transmit intelligence in the International Morse Code at a speed not exceeding 40 words per minute, with the average word composed of 5 letters;

(8) Class F3 emission means a continuous wave frequency-modulated at audio frequencies corresponding to those necessary for intelligible speech transmitted at conversational speed, with a deviation ratio of any value necessary for effective communication, provided the resulting emission shall not exceed the authorized emission-bandwidth;

(9) The keying of a carrier wave or the amplitude modulation of a carrier wave by means of audio or sub-audible frequency or frequencies, so as to transmit in each instance a selective-signalling code intended to actuate a selective-calling device, shall be construed as class A1 emission or class A2, A2a, or A2b emission, respectively, within the limits of the respective authorized emission-bandwidths hereinafter set forth: *Provided*, That for class A2, A2a, or A2b emission, the frequency of modulation does not exceed 1300 cycles per second on radio-channels authorized for telegraphy, nor 3000 cycles per second on radio-channels authorized for telephony;

(10) The frequency-shift keying of a carrier wave or the frequency-modulation of a carrier wave at audio or sub-audible frequency or frequencies, so as to transmit in each instance a selective signalling code intended to actuate a selective-calling device, shall be construed as class F1 emission or class F2 emission, respectively, within the limits of the respective authorized emission-bandwidths hereinafter set forth: *Provided*, The frequency deviation used, and in the case of class F2 emission the modulating frequency or frequencies used, is (are) such that the emission in fact does not exceed the respective authorized emission-bandwidth;

(11) Class F0 emission means pulse transmission with the absence of any

modulation intended to carry information, as used by ship-radar stations licensed by the Commission.

(c) (1) The authorized emission-bandwidths for the classes of emissions authorized in § 83.132 shall be as follows:

Class of emission	Emission designator	Emission-bandwidth authorized for transmission of intelligence
A0.....	None.....	None.
A1.....	0. 16A1.....	224 cycles per second.
A2.....	2. 66A2.....	2724 cycles per second.
A2a.....	1. 33A2a.....	1362 cycles per second.
A2b.....	2. 66A2b.....	2724 cycles per second.
A3.....	6A3.....	8000 cycles per second.
A3a.....	3A3a.....	4000 cycles per second.
A3b.....	6A3b.....	8000 cycles per second.
F0.....	None.....	None.
F1: For 30 to 50 Mc/s.....	Variable <sup>1</sup> .....	40000 cycles per second.
For 156 to 174 Mc/s.....	do <sup>1</sup> .....	Do.
F2: For 30 to 50 Mc/s.....	36F2.....	Do.
For 156 to 174 Mc/s.....	36F2.....	Do.
F3: For 30 to 50 Mc/s.....	36F3.....	Do.
For 156 to 174 Mc/s.....	36F3.....	Do.
P0.....	Variable <sup>2</sup> .....	Variable. <sup>3</sup>
Widband telegraphy, facsimile and special transmission systems: For 2070 to 2080 ke/s.....	do.....	Variable but not to exceed 5000 cycles per second.

<sup>1</sup> In the case of Class F1 emission, the emission designator will vary according to the frequency deviation, the number of words per minute, and other factors involved.

<sup>2</sup> In the case of Class P0 emission, the emission designator and the authorized emission-bandwidth will vary according to the specific values of the controlling technical factors. Reference may be made to individual station authorizations which specify therein the respective emission designator and the respective authorized emission-bandwidth. Note also the provisions of § 83.131(e) concerning authorized frequency tolerance for radar transmitters.

(2) When a specific "emission designator", as expressed in subparagraph (1) of this paragraph appears in a station authorization applicable to any station subject to this part, such designator specifies, for that station and for the particular radio-channel(s) involved, the corresponding authorized emission-bandwidth as set forth in subparagraph (1) of this paragraph.

(3) In the actual operation of a ship station, unless otherwise provided by the station authorization:

(i) When a carrier is present, the frequency coinciding with the center of the frequency-band occupied by the emission-bandwidth shall, when class A2, A2b, A3, F2, or F3 emission is being used, be the same as the carrier frequency;

(ii) When a carrier is not present, the frequency-band occupied by the emission-bandwidth shall be within the authorized frequency-band.

(d) Bandwidths in excess of those set forth in paragraph (c) of this section or emission-bandwidths for other classes of emission may be authorized and set forth in the instrument of authorization if approved by the Commission subsequent to

a satisfactory showing by the applicant of need therefor. Each application requesting such special authorization shall fully describe the emission desired to be used, shall indicate the emission-bandwidth required for effective operation, and shall state the purpose for which such emission-bandwidth is required.

§ 83.134 Authorized transmitter power.

(a) Stations on board ship subject to this part may use such antenna power as is necessary to carry on the service for which the station is licensed, on condition that the maximum authorized transmitter power shall, subject to the provisions of § 83.110(a), not be exceeded; and on condition that the minimum authorized transmitter power shall not be less than that designated in paragraph (c) of this section. Unless the station authorization specifically provides otherwise, the maximum authorized transmitter power (as defined in § 83.7(v)) shall not exceed the particular power set forth in paragraphs (b) through (h) of this section which is applicable under the controlling factors

designated therein in direct relation to that power. Unless the station license specifically provides otherwise, the minimum authorized transmitter power shall not be less than the particular power set forth in paragraph (c) of this section.

(b) For ship stations on board passenger vessels of 5000 gross tons and over, the maximum authorized transmitter-power is set forth as follows:

For telegraphy below 25000 kc/s: 8000 watts (with or without modulation).

For telephony below 25000 kc/s:

Class of radiofrequency amplifier used in last radio stage of transmitter	Maximum authorized transmitter-power in watts (when no modulation is present)			
	2000 to 4000 kc/s band, except on U. S. inland waters <sup>1</sup>		4000 to 25000 kc/s band, except on U. S. inland waters <sup>1</sup>	2000 to 25000 kc/s band, on U. S. inland waters <sup>1</sup>
	Ship to shore	Ship to ship		
Class C—plate or plate and screen-grid modulated.....	1,000	150	3,000	150
Class C—control, screen, or suppressor-grid modulated.....	2,000	300	6,000	300
Class C—cathode modulated.....	1,600	240	4,800	240
Class B—linear.....	2,000	300	6,000	300
Class BC—high efficiency.....	1,200	180	3,600	180
Other classes.....	As specified in the station authorization			

<sup>1</sup> Means for this purpose the Great Lakes area and the Mississippi River (north of Baton Rouge, La.) and connecting inland waters.

(c) (1) For ship stations on board any category of vessel, other than the class of passenger ship prescribed in paragraph (b) of this section, the maximum authorized transmitter power is set forth as follows:

For telegraphy below 25,000 kc/s: 2,000 watts (with or without modulation).

For telephony below 25,000 kc/s:

Class of radiofrequency amplifier used in last radio stage of transmitter	Maximum authorized transmitter-power in watts (when no modulation is present)			
	2000 to 4000 kc/s band, except on U. S. inland waters <sup>1</sup>		4000 to 25000 kc/s band, except on U. S. inland waters <sup>1</sup>	2000 to 25000 kc/s band, on U. S. inland waters <sup>1</sup>
	Ship to shore	Ship to ship		
Class C—plate or plate and screen-grid modulated.....	400	150	1,000	150
Class C—control, screen, or suppressor-grid modulated.....	800	300	2,000	300
Class C—cathode modulated.....	640	240	1,600	240
Class B—linear.....	800	300	2,000	300
Class BC—high efficiency.....	480	180	1,200	180
Other classes.....	As specified in the station authorization.			

<sup>1</sup> Means for this purpose the Great Lakes area and the Mississippi River (north of Baton Rouge, La.) and connecting inland waters.

(2) For ship stations on board any category of vessel, the authorized transmitter power on frequencies between 2000 and 27,500 kc/s assigned for communication by telephony shall not be less than the power designated in the following table: *Provided, however,* That the Commission may specifically license the use of authorized transmitter power less than that specified in the following table for telephone communication on frequencies within the band 2000-4000 kc/s on condition that the applicant

or station licensee shall make a satisfactory showing to the Commission that, with the plate (anode) input power to be used (see § 83.7(t)), a minimum radio frequency field intensity of 7.4 millivolts per meter will be obtained on each such frequency at a distance over seawater of one statute mile (over fresh water, the minimum radio frequency field intensity is reduced to 4.8 millivolts per meter at one statute mile) from the ship station independent of the direction in which the ship is headed.

<i>Class of radio frequency amplifier used in last radio stage of transmitter</i>	<i>Minimum authorized transmitter power in watts (when no modulation is present)</i>
Class C—Plate, or plate and screen-grid modulated.	15.
Class C—Control, screen, or suppressor grid modulated.	30.
Class C—Cathode modulated.....	24.
Other classes.....	Equivalent values as specified in the station authorization.

(d) For ship stations and marine-utility stations using telephony on any frequency assignment within the frequency-band 35 Mc/s to 44 Mc/s and employing amplitude modulation (AM) :

Class of radio-frequency amplifier used in last radio stage of transmitter	Maximum authorized transmitter-power (when no modulation is present)	
	Ship stations	Marine-utility stations
Class C—plate, or plate and screen-grid modulated.....	100 watts.....	10 watts.
Class C—control, screen, or suppressor-grid modulated.....	200 watts.....	20 watts.
Class C—cathode modulated.....	160 watts.....	16 watts.
Class B—linear.....	200 watts.....	20 watts.
Class BC—high efficiency.....	120 watts.....	12 watts.
Other classes.....	As specified in the station authorization	

(e) For ship stations (except marine utility ship stations) using class F3 emission in the band 35–44 Mc/s, the maximum authorized transmitter power is 100 watts. For marine utility ship stations the maximum authorized transmitter power in this band is 10 watts.

(f) For ship stations (except marine utility ship stations) using class F3 emission on any authorized frequency except 156.65 Mc/s in the band 156–174 Mc/s, the maximum authorized transmitter power is 100 watts in Regions 2 and 3, and 40 watts in Region 1. The maximum authorized transmitter power for use on 156.65 Mc/s is 100 watts in the Great Lakes area, and 15 watts in other areas. The maximum authorized transmitter power for marine utility ship stations in the band 156–174 Mc/s is 10 watts.

(g) For stations on board ship which are licensed to transmit on frequencies above 174 Mc/s, the authorized transmitter power shall be specified in the respective station license.

(h) (1) For the purpose of assuring adherence to the requirements of this section or the applicable terms of the station authorization, the authorized transmitter power, with reference to paragraphs (t) and (v) of § 83.7, may be computed for electron tube transmitters by the method set forth in the following

subparagraphs: *Provided*, That when the particular transmitter is used for telephony by means of amplitude modulation (class A3 emission and secondarily class A2 or special emission for operating signals) the authorized transmitter power may be measured when modulation is not present.

(2) The authorized transmitter-power shall be the sum of the product(s) obtained by multiplying the indicated anode (plate) voltage, applied to each electron tube of the last radio stage supplying radio-frequency power to the antenna, by the indicated anode (plate) current flowing through each such tube, or shall be the sum of the indicated powers supplied to each such tube.

(3) Indication of the anode (plate) voltage may be accomplished by means of a direct-current type voltmeter (as applicable) or an alternating current type voltmeter of proper frequency range (as applicable), each such instrument having an accuracy and reliability acceptable to the Commission. Where the same voltage is applied to more than one electron tube, indication of this voltage shall be regarded as indication of the voltage applied to each individual electron tube of that particular group.

(4) Indication of the anode (plate) current may be accomplished by means of a direct-current (d'Arsonval galva-

nometer movement) type ammeter having an accuracy and reliability acceptable to the Commission. Where the anode (plate) current through more than one electron tube flows through a common point in the electrical circuit, indication of the current at this point shall be regarded as indication of the total anode (plate) current flowing through all electron tubes of that particular group.

(5) Indication of the power in watts supplied to the anode (plate) circuit of one or more electron tubes shall be acceptable: *Provided*, A wattmeter properly activated by the form of voltage and current supplied is employed, and has an accuracy and reliability acceptable to the Commission.

(6) When any current, in addition to the anode (plate) current, flows through an ammeter or wattmeter being used for indications in accordance with this paragraph (such as screen-grid current), such current, unless separately indicated or specified by the manufacturer, shall not be deducted from the current measured for the purpose of this paragraph.

**§ 83.135 Suppression of interference from receiving apparatus.**

(a) The use or operation of any radio receiving system or apparatus on board a ship of the United States (excluding lifeboats and other survival craft) shall not, by reason of emission therefrom, cause harmful interference to any authorized maritime mobile or maritime radiodetermination service or impair the efficiency of any auto alarm or watch on any radiofrequency used for either of these services: *Provided*, That this regulation shall not prevent the use or operation of any radio receiving apparatus or system on board ship when the installation or use thereof is required by act of Congress or any treaty to which the United States is a party unless the Commission finds that the interfering emission from such apparatus or system is capable of:

(1) Creating an electromagnetic field, at a distance over sea water of one nautical mile from the receiver, in excess of the following value(s):

Frequency of interfering emission:	Field intensity in microvolts per meter
Below 30 Mc/s-----	0.1
30 to 100 Mc/s-----	.3
100 to 300 Mc/s-----	1.0
Above 300 Mc/s-----	3.0

or

(2) Delivering more than the following amounts of power, to an artificial antenna having electrical characteristics designated by the Commission as equivalent to those of the average receiving antenna(s) used on shipboard:

Frequency of interfering emission:	Power into artificial antenna in micromicrowatts
Below 30 Mc/s-----	400
30 to 100 Mc/s-----	4,000
100 to 300 Mc/s-----	40,000
Above 300 Mc/s-----	400,000

(b) Any specifically identified type of radio receiving apparatus or system required to be installed or used on board a ship by act of Congress or any treaty to which the United States is a party shall be exempt from any subsequent finding by the Commission pursuant to paragraph (a) (1) and (2) of this section if the Commission, as a result of engineering measurements made relative to emission produced by such type of apparatus or system, finds that such emission, as developed on frequencies to which the provisions of paragraph (a) of this section apply under conditions equivalent to normal use or operation on board ship, is not in excess of the value(s) specified in paragraph (a) (1) and/or (2) of this section.

**§ 83.136 Spurious emission limitations.**

(a) Spurious emissions originating in transmitters authorized under this part are subject to the limitations set forth in paragraph (b) of this section, which limitations shall be applicable in accordance with paragraphs (c), (d) and (e) of this section.

(b) The power of any spurious emission shall be reduced below the power of the carrier in accordance with the following schedule:

(1) On any frequency removed from the center of the authorized frequency band of emission by between 50 per cent and 100 per cent of the authorized emission bandwidth: at least 25 decibels;

(2) On any frequency removed from the center of the authorized frequency band of emission by between 100 per cent and 250 per cent of the authorized emission bandwidth: at least 35 decibels;

(3) On any frequency removed from the center of the authorized frequency band of emission by more than 250 per cent of the authorized emission bandwidth: by at least the number of decibels equal to  $40 + 10 \log_{10} P$ , where P is the

maximum "authorized transmitter power" in watts as such power is specifically defined in § 83.7(v) without applying the power tolerance prescribed in § 83.110(a).

(c) Except as outlined in paragraph (d) of this section, the requirements of paragraph (b) of this section shall be applicable as follows:

(1) To any radio transmitter for which type acceptance is requested.

(2) To radio transmitters when operating on any frequency assignment between 30 Mc/s and 500 Mc/s.

(3) To any radio transmitter when operating on any frequency below 30 Mc/s.

(d) The requirements of paragraph (b) of this section shall not apply to:

(1) Survival craft transmitters;

(2) Transmitters authorized in developmental station licenses;

(3) Radiotelegraph transmitters licensed for operation on any frequency assignment below 30 Mc/s prior to January 1, 1959, which are authorized in a station license issued to the same licensee or for a station on board the same vessel;

(4) Other radio transmitters licensed for operation on any frequency assignment below 30 Mc/s prior to January 1, 1959, which are authorized in a station license issued to the same licensee or for a station on board the same vessel until they are authorized in a new or renewed station license issued in response to an application filed after June 1, 1963;

(5) Other radio transmitters leased for operation on board a vessel and licensed for operation on any frequency assignment below 30 Mc/s prior to January 1, 1959, which are subsequently leased by the same lessor for use by a station or stations on board another vessel or other vessels until they are authorized in a new or renewed station license issued in response to an application filed after June 1, 1963.

(e) When an emission outside of the authorized emission bandwidth causes harmful interference to an authorized service the Commission may require more attenuation of such emission than specified in paragraph (b) of this section.

#### § 83.137 Special requirements for radiotelephone transmitters.

(a) In order to be type accepted, each radiotelephone transmitter shall automatically prevent modulation in excess of

100 percent. This requirement, however, shall not apply to transmitters licensed for an authorized transmitter power not exceeding three watts or to survival craft station transmitters. In the event the operation of any licensed radiotelephone transmitter causes harmful interference to any authorized radio service by reason of excessive modulation, the Commission may, in its discretion, require that the use of such transmitter be discontinued until it will automatically prevent modulation in excess of 100 percent.

(b) Each radiotelephone transmitter of a ship station or a marine-utility station shall be type accepted by the Commission prior to its operation by any unlicensed person pursuant to the provisions of § 83.155(a). In addition to complying with all other applicable rules and regulations such a transmitter shall meet the following requirements:

(1) Operation of the transmitter shall require only the use of simple external switching devices excluding all manual adjustment of radio frequency determining elements;

(2) The required radio frequency stability of the transmitter must be maintained (at all times during such operation by an unlicensed person) by the transmitter itself;

(3) None of the operations necessary to be performed during the course of normal rendition of service to the station shall be capable of causing any radiation of emission on an unauthorized frequency; and

(4) The transmitter shall automatically prevent modulation in excess of 100 per cent.

#### § 83.138 Special requirements for ship radar transmitters.

(a) Each radar transmitter authorized in a ship-radar station (other than in a developmental station) must be type-approved by the Commission, pursuant to the type approval procedure set forth in Part 2 of this chapter. In addition to meeting all other applicable requirements such transmitters shall comply with the following limitations and conditions:

(1) The design and construction of the radar transmitter shall be such that, when properly installed, its use will not produce harmful interference to any other radiodetermination service or any maritime mobile service;

(2) The radar transmitter shall not have means available for any external

adjustment which can result in a deviation from the terms of the station authorization or any deviation from the applicable technical requirements for ship-radar stations stipulated in this part.

### § 83.139 Transmitters required to be type accepted for licensing.

(a) Each radiotelephone transmitter authorized in a ship station or marine-utility station license (other than transmitters authorized solely for developmental stations) must be type accepted by the Commission. This requirement shall be applicable as follows:

(1) To transmitters when operating on any frequency assignment above 30 Mc/s;

(2) To transmitters when operating on any frequency assignment, including any assignment below 30 Mc/s. However, until requested to be authorized in a new or renewal license issued in response to an application filed after June 1, 1963, transmitters licensed under this part prior to January 1, 1959, may (insofar as this requirement is concerned) continue to be authorized for operation on any frequency assignment below 30 Mc/s if authorized in a station license issued to the same licensee or for a station on board the same vessel, or if under lease and authorized in a station license prior to January 1, 1959, and subsequently leased by the same lessor for a station or stations on board another vessel or other vessels.

(b) Each survival craft station transmitter which has not been type approved pursuant to § 83.520 shall be type accepted for licensing.

### § 83.140 Type acceptance of equipment.

(a) Any manufacturer of a radio transmitter intended for use or used in ship stations, marine utility stations, or survival craft stations may request type acceptance for such transmitters by following the type acceptance procedure set forth in Part 2 of this chapter: *Provided, however*, That the provisions of this section do not apply to transmitters provided for compliance with the radiotelegraph requirements of title III, part II of the Communications Act of 1934.

(b) Type acceptance of a radio transmitter may be requested also by an applicant for a station authorization by following the type acceptance procedure set forth in Part 2 of this chapter. Such

transmitters, if type accepted, are not normally included in the Commission's "Radio Equipment List, Part C", but are individually identified on the station authorization.

### § 83.141 Special requirements for survival craft stations.

(a) Equipment provided for use in survival craft stations shall, if capable of transmitting on:

(1) The frequency 500 kc/s, be able to use class A2 emission;

(2) The frequency 2182 kc/s, be able to use class A3 emission;

(3) The frequency 8364 kc/s, be able to use class A2 emission;

(4) The frequency 121.5 Mc/s, be limited to class A2 emission.

(b) If a receiver is provided, it shall be capable of receiving the frequency and types of emission which the transmitter is capable of using: *Provided*, That if the transmitter frequency is 8364 kc/s the receiver shall be capable of receiving A1 and A2 emission throughout the band 8320-8745 kc/s: *And further provided*, That if the transmitter frequency is 121.5 Mc/s, the receiver shall be capable of receiving A3 emission.

(c) Survival craft transmitters operating on the frequency 500 kc/s or on the frequency 8364 kc/s shall be capable of manual keying. If provisions are made for automatically transmitting the radiotelegraph alarm signal or the radiotelegraph distress signal, such provisions shall meet the requirements of § 83.557 (b) (4) (i), (ii), (v), and (vi).

### § 83.142 Apparatus for generating automatically the radiotelephone alarm signal.

(a) Any device for generating the radiotelephone alarm signal (as defined by § 83.245(b)) by automatic means shall be capable of being taken out of operation at any time in order to permit the immediate transmission of a distress call and message. The device shall comply with the following requirements:

(1) The tolerance of the frequency of each tone shall be plus or minus 1.5 percent;

(2) The tolerance on the duration of each tone shall be plus or minus 50 milliseconds;

(3) The interval between successive tones shall not exceed 50 milliseconds;

(4) The ratio of the amplitude of the stronger tone to that of the weaker shall be within the range 1 to 1.2.

(b) Except for experimental or trial operation under developmental station authorization, any device for generating the radiotelephone alarm signal by automatic means, which is used or operated by a mobile station subject to this part for transmission of that signal, shall be of a type specifically approved by the Commission in respect to its accuracy, reliability, and other relevant characteristics.

#### Subpart F—Operator Requirements

##### § 83.151 Authorized operator required.

(a) Except as otherwise provided in § 83.155, the actual operation of all transmitting apparatus in any radio station in the maritime mobile or maritime radiolocation service on board a ship of the United States shall be carried on only by a person holding an operator license issued by the Commission in accordance with Part 13 of this chapter.

(b) When the station is a public ship station used for telephony, the person actually operating the station shall, if authorized by the station licensee or the master (acting in this respect as the station licensee's agent), and subject to the priority of communication set forth in § 83.177, permit any person to speak over the station microphone: *Provided*, That such person actually operating the station shall continue to exercise his control so as to insure the continued proper operation of the station.

(c) When the station is a limited ship station used for telephony, the person actually operating the station may, if authorized by the station licensee or the master (acting in this respect as the station licensee's agent), and subject to the priority of communications set forth in § 83.177, permit any person to speak over the station microphone: *Provided*, That such person actually operating the station shall continue to exercise his control so as to insure the continued proper operation of the station.

(d) For the purpose of paragraphs (b) and (c) of this section, any microphone, without regard to its location on board ship, may be construed to be the station microphone when it is electrically connected to the modulating system of the radiotelephone transmitting apparatus.

##### § 83.152 Operator required by law for safety.

(a) The radio installation required by Part II of Title III of the Communications Act or by the Safety Con-

vention, for purposes of safety on board a ship of the United States, shall be in charge of and shall be operated only by one or more qualified operators who shall be subject to the lawful authority of the master.

**NOTE:** A qualified operator for the purpose of this section on a ship of the United States is a person holding a radio operator's license of the proper class, as prescribed and issued by the Commission. See Part 13 of this chapter and/or any applicable orders promulgated by the Commission.

(b) Each cargo ship of the United States required by Part II of Title III of the Communications Act to be fitted with a radiotelegraph installation and not exempted therefrom by the Commission, which is not fitted with an autoalarm, and each passenger ship required by that statutory provision to be fitted with a radiotelegraph installation and not exempted therefrom by the Commission, shall, for safety purposes, carry at least two qualified operators.

(c) Each cargo ship of the United States required by Part II of Title III of the Communications Act to be fitted with a radiotelegraph installation and not exempted therefrom by the Commission, which is fitted with an autoalarm in accordance with that statutory provision, shall, for safety purposes, carry at least one qualified operator who shall have had at least six months previous service in the aggregate as a qualified operator in a station on board a ship or ships of the United States.

(d) Each cargo ship of the United States required by Part II of Title III of the Communications Act to be fitted with a radiotelephone installation and not exempted therefrom by the Commission, shall, for safety purposes, carry at least one qualified operator holding an operator's license issued by the Commission which is appropriate for the purpose under the provisions of Part 13 of this chapter.

(e) Each vessel of the United States transporting more than six passengers for hire, which is required by Part III of Title III of the Communications Act to be equipped with a radiotelephone installation and not exempted therefrom by the Commission, shall, for safety purposes, carry at least one qualified operator holding an operator's license issued by the Commission which is appropriate for the purpose under Part 13 of this chapter.

### § 83.153 Operator required by Safety Convention.

(a) Each ship of the United States which is not subject to Part II of Title III of the Communications Act but which is required by the radio provisions of the Safety Convention to be fitted with a radiotelegraph installation, which has not been exempted therefrom by the Commission, shall, for safety purposes, carry at least the number of qualified operators specified in subparagraphs (1) and (2) of this paragraph. A qualified operator for this purpose is a person holding an operator's license issued by the Commission which is appropriate for the purpose under the provisions of Part 13 of this chapter.

(1) If fitted with an auto-alarm in proper operating condition at least one qualified operator shall be carried, except that at least two qualified operators shall be carried in the case of a passenger ship carrying or certificated to carry more than 250 passengers and engaged on a voyage exceeding 16 hours duration between two consecutive ports.

(2) If not fitted with an auto-alarm at least two qualified operators shall be carried.

(b) Each cargo ship of the United States which is not subject to Part II of Title III of the Communications Act but which is required by the radio provisions of the Safety Convention to be fitted with a radiotelephone installation which has not been exempted therefrom by the Commission, shall, for safety purposes, carry at least one qualified operator holding an operator's license issued by the Commission which is appropriate for the purpose under the provisions of Part 13 of this chapter.

### § 83.154 Location of authorized operator.

(a) Whenever the transmitting apparatus of a station in the maritime mobile service subject to this part is being used or operated, and the provisions of section 318 of the Communications Act (insofar as such provisions require the actual operation of such apparatus only by a person holding an operator's license of the proper class issued by the Commission) are not waived by the Commission, at least one person holding an operator license of the proper class as prescribed in Part 13 of this chapter shall be on duty at the place where such transmitting appara-

tus is located, and, subject to the lawful authority of the master, shall be in charge of the station: *Provided*, That in lieu of the transmitter location, such operator may be on duty at a different location on the ship when:

(1) Such apparatus is installed and protected so that it is not accessible to and may not be placed in an operating condition by other than duly authorized persons; and

(2) The transmitting and associated receiving apparatus can be operated from such other location in a manner which will fully comply with all applicable rules of the Commission (in particular § 83.104) and the terms of the station license; and without any delay in normal operation being introduced by such arrangement.

### § 83.155 Waivers of operator license.

(a) *For VHF telephony.* Subject to the conditions hereinafter stated, the provisions contained in section 318 of the Communications Act are waived, insofar as such provisions require any person to hold an operator's license in order to operate, during the course of normal rendition of service, any ship station (including a developmental ship station) or marine-utility station on board ship, in the maritime mobile service, when such station is authorized to use telephony only and further is authorized to be operated exclusively on one or more radio-channels above 30 Mc/s: *Provided*:

(1) The person who operates the transmitting equipment is the station licensee or is authorized by the station licensee to do so, and the use of the station during such operation is subject to the lawful direction and authority of the person who, at the time, occupies the position of the master of the ship on which the station is located;

(2) The station uses one or more of the following classes of emission only: A3 or F3 for telephony; and on the same radio-channels as are authorized for telephony A0, A2, F0, F2 solely for transmitting by automatic means attention-signals, signals for actuating selective-calling devices, for brief testing of the authorized apparatus, or station identification, or signals in an emergency involving safety;

(3) The station is authorized to use transmitting equipment only of a type which is acceptable to the Commission for operation in this service by unli-

censed persons in accordance with this paragraph;

(4) The transmitting equipment operated by an unlicensed person in accordance with this paragraph is not required on board the ship for safety purposes by any statutory provisions or by any international agreement or treaty in force;

(5) All transmitter adjustments or tests during or coincident with the installation, servicing, or maintenance of the station that may affect its proper operation shall be made by or under the immediate supervision and responsibility of a person holding an operator license of the proper class for this purpose as prescribed in Part 13 of this chapter who shall be responsible for the proper functioning of the station equipment;

(6) Subsequent to any transmitter adjustments made in accordance with subparagraph (5) of this paragraph, and at all other times, the station licensee shall be responsible for determining that the transmitting equipment continues to meet the conditions established by the Commission relative to acceptance of the particular type of equipment for the purpose of operation by unlicensed persons;

(7) The station licensee or the person(s) authorized by the licensee to operate the station shall, in lieu of a licensed operator, comply with the provisions of § 83.154 as though he were a licensed operator;

(8) Nothing contained in this paragraph shall be construed to change or diminish in any respect the responsibility of the station licensee for having and maintaining control of the station or for proper functioning and operation of the station in accordance with law;

(9) No unlicensed person, authorized as provided by this paragraph to operate a station, may lawfully perform any act in relation to such station that he could not lawfully perform if he were acting under the authority of a radio operator license issued in his behalf by the Commission.

(b) *For ship radar.* (1) No radio operator license is required for the operation on board ship, during the course of the normal rendition of service, of ship radar stations: *Provided*, That the following conditions are met or provided for by the licensee of the station:

(i) The radar equipment shall employ as its frequency determining element a non-tunable, pulse-type magnetron;

(ii) The radar equipment shall be capable of being operated during the course of normal rendition of service in accordance with the radio law and the rules and regulations of the Commission by means of exclusively external controls, and

(iii) Operation during the course of normal rendition of service pursuant to this subparagraph (1), must be performed exclusively by the master of the radar-equipped ship or by one or more other persons responsible to him and authorized by him to do so.

(2) All adjustments or tests during or coincident with the installation, servicing, or maintenance of the equipment while it is radiating energy must be performed by or under the immediate supervision and responsibility of a person holding a first or second class commercial radio operator license, radiotelephone or radiotelegraph, containing a ship-radar endorsement, who shall be responsible for the proper functioning of the equipment in accordance with the radio law and the Commission's rules and regulations and for the avoidance and prevention of harmful interference from improper transmitter external effects: *Provided, however*, That nothing in this subparagraph shall be construed to prevent persons not holding such licenses or not holding such licenses so endorsed from making replacements of fuses or of receiving-type tubes.

(3) Nothing in this subparagraph shall be construed to change or diminish in any respect the responsibility of any ship radar station licensee for having and maintaining control over the station licensed to him, or for the proper functioning and operation of such station in accordance with the terms of the station license.

(c) *For survival craft.* No radio operator license is required for the operation of a survival craft station while it is being used solely for survival purposes.

§ 83.156 Posting of operator license.

When a licensed operator is required for the operation of a station subject to this part, the original license of each such operator while he is employed or designated as radio operator of the station shall be posted in a conspicuous place at the principal location on board ship at which the station is operated: *Provided*, That in the case of stations of a portable nature, including marine-utility stations, or in the case where the operator holds a restricted radiotelephone operator per-

mit, the operator may in lieu of posting have on his person either his required operator license or a duly issued verification card (FCC Form 758-F) attesting to the existence of that license.

**§ 83.157 Adjustment or test of equipment.**

Notwithstanding any other provisions of this subpart (except § 83.155(b) (2) which specifically covers ship radar stations), all adjustments or tests of radio transmitting apparatus in any station subject to this part during or coincident with the installation, servicing, or maintenance of such apparatus which may affect the proper operation of such station, must be performed by or under the immediate supervision and responsibility of a person holding a first or second class commercial radio operator license, either radiotelephone or radiotelegraph as may be appropriate for the class of station involved, who shall be responsible for the proper functioning of the station equipment.

**§ 83.158 Certified persons required by Great Lakes Agreement.**

(a) For the purpose of complying with Article 7, paragraph 1(a) of the Great Lakes Agreement, there shall be on board a United States vessel, as an officer or member of the crew, one or more persons holding an operator's license issued by the Commission which is appropriate for that purpose under the provisions of Part 13 of this chapter.

(b) If the vessel is deprived of the services of all certified persons referred to in paragraph (a) of this section without fault or collusion of the master, the vessel may, as a matter of temporary expediency, proceed on her voyage, provided:

(1) The master shall exercise due diligence in an effort to obtain at least one qualified replacement before sailing and failing that shall exercise due diligence to obtain at least one qualified replacement as soon as practicable;

(2) The qualified replacement is made at the destination on the Great Lakes of the vessel;

(3) In addition to the foregoing, the master shall, within 12 hours after the time of arrival of the vessel at the destination, mail to the Secretary, Federal Communications Commission, Washington, D.C., 20554, an explanation in writing of the full particulars in the matter, including the date the master became aware of the unavailability of the cer-

tified person or persons, the scheduled and the actual sailing time of the vessel without a certified person on board, a specific description of his efforts to secure at least one qualified replacement before sailing; and in the case of a vessel whose destination is on the Great Lakes, a statement that a qualified replacement has been or will be secured before the ship again leaves such port.

**Subpart G—General Operating Requirements**

**§ 83.171 International regulations applicable.**

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

**§ 83.173 Authority of the master.**

(a) Except as may be regulated by law or international agreement or by the rules of the Commission, the service of each station on board ship shall at all times be under the supreme control of the master, who shall require that each operator of such station comply with the International Radio Regulations in force and that the ship station for which the operator is responsible is used, at all times, in accordance with those regulations.

(b) However, during any period in which the Department of Defense lawfully may exercise and is in fact lawfully exercising emergency controls over United States merchant shipping, no provisions of the Commission's rules and regulations shall prevent the master of any ship of the United States from taking any action whatsoever in regard to the radio installation, the operators, the transmission and receipt of messages, and the radio service of the ship whenever in his discretion such action is necessary to carry out instructions of the Department of Defense.

**§ 83.174 Secrecy of communication.**

The master or the person responsible, as well as all persons who may have knowledge of the text or even of the existence of the radio communications transmitted or received by a station on board ship or of any information

whatever obtained by means of the radiocommunication service of such station, shall be under the obligation of observing and insuring the secrecy of communications to the extent required by the Communications Act and the International Radio Regulations.

NOTE: See secs. 501, 502, and 605 of the Communications Act; also Article 17 of the International Radio Regulations, Geneva, 1959.

**§ 83.175 Intercommunication in mobile service.**

Each ship station in the maritime mobile service at sea shall, within the scope of its normal operations, be bound to exchange radio communications or signals with any other ship station or aircraft station in the maritime mobile service at sea or with any public coast station in the maritime mobile service: *Provided*, That such exchange of radio communications shall be without distinction as to radio systems or instruments adopted by each station.

**§ 83.176 Priority of communications to be observed.**

Ship stations in the maritime mobile service shall observe at all times the priority of communications set forth in § 83.177; in particular, all such stations shall give absolute priority to radio communications or signals relating to any ship or aircraft in distress; shall, when any distress signal or communication is anticipated or intercepted; cease all transmission on frequencies which may interfere with any station hearing such radio communication or signal of distress except when engaged in answering or aiding the ship or aircraft in distress, and shall assist the vessel or aircraft in distress, so far as possible, by complying with its instructions.

**§ 83.177 Order of priority of communications.**

(a) The order of priority of radiotelegraph communications in the maritime mobile service on any frequency used for this service shall be as follows:

(1) Distress calls (including the international distress signal for radiotelegraphy),<sup>1</sup> the international radiotelegraph alarm signal,<sup>2</sup> the international radiotelephone alarm signal,<sup>2</sup> distress messages, and distress traffic.

<sup>1</sup> See § 83.234 for definition of this signal.

<sup>2</sup> See § 83.245 for definition of this signal.

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

(3) Communications preceded by the international radiotelegraph 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 radio-communication service or to communications previously transmitted.

(9) All other communications.

(b) The order of priority of radiotelephone communications in the maritime mobile service on any frequency used for this service shall be as follows:

(1) Distress calls (including the international distress signal for radiotelephony),<sup>1</sup> the international radiotelephone alarm signal,<sup>2</sup> distress messages, and distress traffic.

(2) Communications preceded by the international radiotelephone urgency signal, or known to the station licensee or his agent to consist of one or more urgent messages concerning the safety of a ship, aircraft, or other mobile unit or of some person on board or within sight of the ship, aircraft, or mobile unit.

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

(4) Communications known by the station licensee or his agent 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.

**§ 83.178 Unauthorized transmissions.**

Stations subject to this part shall not:

(a) Engage in superfluous radio-communication;

(b) Use selective calling on 2182 kc/s or 156.8 Mc/s;

(c) When using telephony, transmit a general call or transmit signals or communications not addressed to a particular station or stations: *Provided*, That this provision is not applicable to the transmission of distress, alarm, urgency, or safety signals, or to messages preceded by one of these signals;

(d) When using telegraphy, transmit a general call or transmit signals or communications not addressed to a particular station or stations, unless the transmission is preceded by CQ or CP in accordance with the International Radio Regulations, or by distress, alarm, urgency, or safety signals.

#### § 83.179 Control by coast or government station.

When communicating with a coast station or any government station in the maritime mobile service, ship stations shall, except when transmitting distress signals or controlling distress traffic, comply with instructions given by the coast station or government station relative to the order and time of transmission, to the choice of authorized frequency, to the suspension of communication, and to the permissible type of message traffic that may be transmitted or received by the particular coast station or government station. This provision, however, does not apply in the event of distress, either actual or impending.

#### § 83.180 Cooperative use of frequency assignments.

Unless provided otherwise in this part, or in the particular station authorization, each radio-channel authorized for use by a station on board ship subject to this part is available for such use on a shared basis only and shall not be construed as available for the exclusive use of any one station or any one station licensee. All station licenses shall cooperate in the use of their respective frequency assignment in order to minimize interference and obtain the most effective use of the authorized radio-channels.

#### § 83.181 Prevention of interference.

(a) From the standpoint of interference the operation of a ship radio station (including receiving equipment, auto-alarm, and direction-finder) required by law to be installed on board a

vessel for safety purposes, shall have priority over the operation of any other radio apparatus on board the same vessel.

(b) Before commencing transmission (other than signals of distress) a ship station shall, insofar as is practicable, make sure that it will not cause interference to communications in the maritime mobile service being carried on within its range. For this purpose, the operator attending the station shall, before commencing transmission, use the necessary receiving installation to listen on the appropriate frequency or frequencies. If interference is likely, the station shall wait until the existing communications, which it may disturb, have been concluded; with due regard, nevertheless, for the priority of communications designated in § 83.177.

(c) Whenever a radiocommunication in the maritime mobile service is already in progress between two mobile stations or between a mobile station and a coast station and it appears to be interfered with by a subsequent transmission from another mobile station, the latter must cease transmitting at the first request of either of the other two, except as priority may be otherwise determined by § 83.177. The station requesting this cessation must indicate the approximate length of the wait imposed upon the mobile station whose transmission is suspended.

(d) Except in cases of distress, communications between ship stations or between ship and aircraft stations must not interfere with the work of public coast stations. When this work is thus interfered with, the ship or aircraft station which causes it must stop transmitting or change frequency upon the first request of the coast station concerned.

(e) Ship stations when operating on a frequency below 3500 kilocycles or above 30 Mc shall not carry on, or attempt to carry on, communication with any station which, under the currently prevailing conditions of transmission or reception, is not within reliable communication range of the ship station: *Provided*, That this provision shall not apply in event of distress, either actual or impending.

#### § 83.182 Suspension of transmission.

Transmission shall be suspended immediately upon detection by the station

or operator licensee, or upon notification by the Commission, of a deviation from the technical requirements of the station authorization, and shall remain suspended until such deviation is corrected, except for transmission concerning the immediate safety of life or property, in which case transmission shall be suspended as soon as the emergency is terminated.

**§ 83.183 Hours of service of ship stations.**

(a) Ship stations whose service is not continuous may not close before:

(1) Finishing all operations resulting from a distress call, or urgency or safety signal;

(2) Exchanging, so far as practicable and within the scope of their normal operation, all traffic originating in or destined for public coast stations situated within their range and mobile stations which, being within their range, have indicated their presence before the actual cessation of communication.

**§ 83.184 Maintenance of station log.**

(a) Each station on board ship subject to this part which is required, under the provisions of this part pertaining to the particular class of station, to keep a radio station log, shall in addition, comply with the applicable provisions of paragraphs (b) and (c) of this section; the station licensee and the licensed radio operator (when a licensed radio operator is required) in charge of the station shall be responsible for compliance with this section.

(b) The log shall be kept in an orderly manner, in useable form, and in such detail that the information required for the particular class of station concerned is readily available. Key letters or abbreviations may be used if their proper meaning or explanation is contained elsewhere in the same log.

(c) The station log or any portion thereof shall not be erased, obliterated, or wilfully destroyed within the period of retention required by § 83.115. However, during this period any necessary correction may be made of such log but only by the person originating the entry and that person shall strike out the erroneous portion, initial the correction made, and indicate the date of correction.

**Subpart H—Watches and Auto Alarms for Safety Purposes**

**§ 83.201 Watch required during silence periods.**

(a) All ship stations employing telegraphy and normally keeping watch on frequencies in the authorized bands between 405 and 535 kc/s shall, during their hours of service, take the necessary measures to insure an efficient watch by a duly licensed radiotelegraph operator on the international distress frequency 500 kc/s for three minutes twice each hour, beginning at x h. 15 and x h. 45, Greenwich mean time (GMT). For this purpose, either headphones or a loudspeaker may be used, on condition that use of the loudspeaker is no less effective than use of headphones. While maintaining this watch, the operator shall not use or operate any radio equipment (such as, for examples, broadcast receivers, or amateur transmitters or receivers) not actually required for maritime mobile service.

(b) When in Regions 1 and 3 (except in the territorial waters of Japan and the Philippines) all ship stations employing telephony and normally keeping watch on frequencies in the authorized band between 1605 and 2850 kc/s shall, during their hours of service, and as far as possible, take steps to keep watch on the international distress frequency 2182 kc/s for 3 minutes twice each hour beginning at x h. 00 and x h. 30, Greenwich mean time.

**§ 83.202 Watch required on vessels subject to the Communications Act.**

(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 shall, while being navigated in the open sea outside of a harbor or port, keep a continuous and efficient watch on 500 kc/s by means of radio officers: *Provided, however,* That in lieu thereof on a cargo ship equipped with a radiotelegraph auto alarm in proper operating condition an efficient watch on 500 kc/s shall 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.

(b) Each cargo ship of the United States which is equipped with a radio-

telephone station for compliance with part II of title III of the Communications Act shall, while being navigated in the open sea outside of a harbor or port, keep a continuous and efficient watch on 2182 kc/s 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 shall be maintained by at least one officer or member of the crew of the vessel who has been designated by the master to do so. The person designated by the master may simultaneously 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.

(c) Each vessel of the United States transporting more than six passengers for hire, which is equipped with a radiotelephone installation for compliance with part III of title III of the Communications Act shall, 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 and efficient watch on 2182 kc/s in the case of an installation operating in the 1605-3500 kc/s band, or on 156.8 Mc/s in the case of an installation operating in the 156-174 Mc/s band, whenever such installation is not being used for authorized traffic. Such watch shall be maintained by at least one officer or member of the crew of the vessel who has been designated by the master to do so. The person designated by the master may simultaneously 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.

**§ 83.203 Watch required on vessels subject only to the Safety Convention.**

(a) Each ship of the United States which is equipped with a radiotelegraph station for compliance with the Safety Convention, but which is not fitted with a radiotelegraph auto alarm in proper operating condition, shall while at sea keep a continuous and efficient watch on 500 kc/s by means of radio officers. If fitted with a radiotelegraph auto alarm in proper operating condition, such watch shall be kept while at sea as follows:

(1) Each cargo ship, and each passenger ship carrying or certificated to carry 250 passengers or less, or more than 250

passengers but engaged on a voyage of less than 16 hours duration between two consecutive ports, at least 8 hours watch a day in the aggregate;

(2) Each passenger ship carrying or certificated to carry more than 250 passengers and engaged on a voyage exceeding 16 hours duration between two consecutive ports, at least 16 hours watch a day in the aggregate.

(b) Each cargo ship of the United States which is equipped with a radiotelephone station for compliance with the Safety Convention shall, while at sea, keep a continuous and efficient watch on 2182 kc/s in the manner prescribed by § 83.202(b).

**§ 83.204 Provisions governing radiotelegraph watch.**

(a) For the purpose of keeping the required radiotelegraph watch on 500 kc/s the radio officer shall use the main or reserve receiver, and either headphones or a loudspeaker.

(b) While keeping this watch, the radio officer shall not use or operate any radio equipment (such as, for examples, broadcast receivers or amateur transmitters or receivers) not actually required for maritime mobile service.

(c) During the period of this watch, the radio officer may temporarily interrupt the required watch on 500 kc/s while he is transmitting or receiving signals or messages to or from a station operating in the maritime mobile service, but only if it is not feasible to simultaneously handle such traffic and listen on 500 kc/s by split headphones or a loudspeaker. The watch on 500 kc/s shall, however, without exception be maintained by the radio officer during the silence periods.

**§ 83.205 Compulsory use of radiotelegraph auto alarm.**

The radiotelegraph auto alarm required to be fitted on board a cargo ship subject to the radiotelegraph provisions of part II of title III of the Communications Act or the Safety Convention and provided with but one radio officer, shall 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 outside of a harbor or port when a radio officer, except under the circumstances as set forth in § 83.204(c), is not listening on the frequency 500 kc/s.

**§ 83.206 Watch required by the Great Lakes Radio Agreement.**

Each ship of the United States which is equipped with a radiotelephone installation for compliance with the Great Lakes Radio Agreement shall, while subject to said Agreement, keep a continuous and efficient watch on 2182 kc/s whenever such installation is not being used for authorized traffic on any frequency below 30 Mc/s. Such watch shall be maintained by at least one officer or member of the crew of the vessel who has been designated by the master to do so. The person designated by the master may simultaneously 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.

**Subpart I—General Purpose Watches**

**§ 83.221 Watch on 500 kc/s.**

Ship stations using frequencies in the authorized bands between 405 and 535 kc/s shall, during their hours of service, remain on watch on the calling frequency 500 kc/s except when the operator is transmitting on 500 kc/s, operating the ship station equipment on any other frequency authorized for transmission or reception in the maritime mobile service (including maintenance of the watch on 143 kc/s as provided by § 83.222) if it is not possible for the operator to maintain at the same time, by any practicable means the watch for calls on 500 kc/s. The term "by any practicable means" as used herein shall be construed to include the use of a loudspeaker or a head receiver energized by an additional radio receiver (other than the receiver actually in use for non-watch purposes) which is adjusted or tuned for effective reception on the radio-channel of which 500 kc/s is the assigned frequency. The provisions of this section, however, shall not relieve the ship from complying with the requirements for a safety watch as prescribed in §§ 83.201, 83.202 and 83.203.

**§ 83.222 Watch on 143 kc/s.**

On condition that compliance with the following requirement shall in no way interrupt or reduce the efficiency of the safety watch prescribed in §§ 83.201, 83.202 and 83.203, each ship station equipped for working by means of class A1 emission on frequencies within the band 90 to 160 kc/s shall,

during its hours of service when not engaged in communication with another station of the maritime mobile service, normally keep watch for calls every hour on the frequency 143 kc/s for five minutes beginning at x h. 35, Greenwich mean time (G. M. T.).

**§ 83.223 Watch on 2182 kc/s.**

(a) Each ship station on board a ship navigating the Great Lakes and licensed to transmit by telephony on one or more frequencies within the band 1600 to 3500 kc/s shall, during its hours of service for telephony, maintain an efficient watch for the reception of class A3 emission on the radio-channel of which 2182 kc/s is the assigned frequency, whenever the station is not being used for transmission on that channel or for communication on other radio-channels.

(b) Except for stations on board vessels required by law to be fitted with radiotelegraph equipment, each ship station (in addition to those ship stations specified in paragraph (a) of this section) licensed to transmit by telephony on one or more frequencies within the band 1600 to 3500 kc/s shall, during its hours of service for telephony, maintain an efficient watch for the reception of class A3 emission on the radio-channel of which 2182 kc/s is the assigned frequency, whenever such station is not being used for transmission on that channel or for communication on other radio-channels. When the ship station is in Region 1 or 3, such watch shall, insofar as is possible, be maintained at least twice each hour for three minutes commencing at x h. 00 and x h. 30, Greenwich mean time (G. M. T.).

**Subpart J—Distress, Alarm, Urgency, and Safety**

**§ 83.231 Applicable regulations.**

In addition to the governing provisions of the International Radio Regulations, Geneva, 1959 (see Article 36 thereof) applicable to the transmission and interception of distress, alarm, urgency, and safety signals and messages, mobile stations which are subject to this part shall be governed by this subpart in cases of distress, alarm, urgency, or safety transmissions.

**§ 83.232 Authority for distress transmission.**

No provision of the International Radio Regulations prevents the use by a

mobile station in distress of any means at its disposal to attract attention, make known its position, and obtain help. A distress call and message, however, shall 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 communication relating thereto.

#### § 83.233 Radio channels for distress.

(a) In case of distress, mobile radiotelegraph stations provided with frequencies in the band between 405 and 535 kc/s shall use the international radiotelegraph distress frequency 500 kc/s, with maximum transmitter power obtainable, when requesting assistance from the maritime services; the class of emission to be used if possible shall be A2. Ship radiotelegraph stations which cannot transmit on 500 kc/s should use any other available frequency on which attention might be attracted.

(b) In case of distress, mobile radiotelephone stations provided with frequencies in the authorized bands between 1605 and 4000 kc/s shall use the international radiotelephone distress frequency 2182 kc/s, preferably with class A3 emission, when requesting assistance from the maritime services. Ship radiotelephone stations which cannot transmit on 2182 kc/s should use any other available frequency on which attention might be attracted.

#### § 83.234 Distress signals.

(a) The international radiotelegraph 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.

#### § 83.235 Distress calls.

(a) The distress call sent by radiotelegraphy 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 distress call sent by radiotelephony 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.

(c) The distress call shall have absolute priority over all other transmissions. All stations which hear it shall immediately cease any transmission capable of interfering with the distress traffic and shall continue to listen on the frequency used for the emission of the distress call. This call shall not be addressed to a particular station and acknowledgment of receipt shall not be given before the distress message which follows it is sent.

#### § 83.236 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, etc.).

(c) As a general rule, a ship shall signal its position in latitude and longitude (Greenwich), 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 . \_ . \_ . \_ shall 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.

**§ 83.237 Radiotelegraph distress call and message transmission procedure.**

(a) The radiotelegraph distress procedure shall normally consist of the following six steps; however, when time is vital, the second step of this procedure, or even the first and second steps, may be omitted. These two steps of the distress procedure may also be omitted in circumstances where 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 shall 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, shall be repeated at intervals, especially during the 500 kc/s international silence periods, until an answer is received. The radiotelegraph alarm signal may also be repeated, if necessary.

(d) The transmissions under paragraph (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.

**§ 83.238 Radiotelephone distress call and message transmission procedure.**

(a) The radiotelephone distress procedure shall consist of:

- (1) The radiotelephone alarm signal (whenever possible);
- (2) The distress call;
- (3) The distress message.

(b) The radiotelephone distress transmissions shall 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, shall be repeated at intervals until an answer is received. This repetition shall 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.

**§ 83.239 Acknowledgment 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, shall immediately acknowledge receipt. However, in areas where reliable communication with one or more coast stations are practicable, ship stations may defer this acknowledgment 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, shall 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.

**§ 83.240 Form of acknowledgment.**

(a) The acknowledgment of receipt of a distress message is transmitted, when radiotelegraphy is used, in the following form:

- (1) The call sign of the station sending the distress message, sent three times;
- (2) The word DE;
- (3) The call sign of the station acknowledging receipt, sent three times;
- (4) The group RRR;
- (5) The distress signal  $\overline{SOS}$ .

(b) The acknowledgment of receipt of a distress message is transmitted, when radiotelephony is used, in the following form:

- (1) The call sign or other identification of the station sending the distress message, spoken three times;
- (2) The words THIS IS;

(3) The call sign or other identification of the station acknowledging receipt, spoken three times;

(4) The word RECEIVED;

(5) The distress signal MAYDAY.

**§ 83.241 Information furnished by acknowledging station.**

(a) Every mobile station which acknowledges receipt of a distress message shall, 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 name;

(2) Its position, in the form prescribed in § 83.236(c);

(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 shall ensure that it will not interfere with the emissions of other stations better situated to render immediate assistance to the station in distress.

**§ 83.242 Transmission of distress message by a station not itself in distress.**

(a) A mobile station or a land station which learns that a mobile station is in distress shall transmit a distress message in any of the following cases:

(1) When the station in distress is not itself in a position to transmit the distress message;

(2) When the master or person responsible for the ship, aircraft, or other vehicle not in distress, or the person responsible for the land station, considers that further help is necessary;

(3) When, although not in a position to render assistance, it has heard a distress message which has not been acknowledged. When a mobile station transmits a distress message under these conditions, it shall take all necessary steps to notify the authorities who may be able to render assistance.

(b) The transmission of a distress message under the conditions prescribed in paragraph (a) of this section shall be made on either or both of the international distress frequencies (500 kc/s radiotelegraph; 2182 kc/s radiotelephone) or on any other available frequency on which attention might be attracted.

(c) The transmission of the distress message shall always be preceded by the

call indicated below, which shall 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 shall be allowed, whenever this is considered necessary, before the transmission of the call mentioned in subparagraph (c) (1) of this section.

**§ 83.243 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 shall 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, pursuant to § 83.242(a), has sent the distress message. These stations may, however, 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 shall address these instructions "to all stations" or to one station only, according to circumstances. In either case, it shall use:

(1) In radiotelegraphy, the abbreviation QRT, followed by the distress signal SOS. The use of the signal QRT SOS shall be reserved for the mobile station in distress and for the station controlling distress traffic;

(2) In radiotelephony, the signal SEELONCE MAYDAY. The use of this signal shall be reserved for the mobile station in distress and for the station controlling distress traffic.

(d) If it is believed to be essential, any station of the mobile service near the ship, aircraft, or other vehicle in distress,

may also impose silence. It shall 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.

§ 83.244 Notification of resumption of normal working.

(a) When distress traffic has ceased, or when silence is no longer necessary on a frequency which has been used for distress traffic, the station which has controlled this traffic shall 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 of 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 "to 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.

(b) Until they receive the foregoing message indicating that normal 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.

§ 83.245 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 shall have a frequency of 2200 cycles per second and the other a frequency of 1300 cycles per second, the duration of each tone being 250 milliseconds. When generated by automatic means, the radiotelephone alarm signal shall be transmitted continuously for a period of at least 30 seconds, but not exceeding one minute; when generated by other means, the signal shall 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.

§ 83.246 Use of alarm signals.

(a) The radiotelegraph or radiotelephone alarm signal, as appropriate, shall 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 shall not be repeated by other stations. The message shall be preceded by the urgency signal.

(b) In cases described in subparagraphs (2) and (3) of paragraph (a) of this section, the transmission of the warning or message by radiotelegraphy shall not begin until two minutes after the end of the radiotelegraph alarm signal.

§ 83.247 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 shall 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 shall be transmitted before the call.

(c) In radiotelephony, the urgency signal consists of the word PAN, spoken three times and transmitted before the call.

(d) The urgency signal shall have priority over all other communications, except distress. All mobile and land stations which hear it shall take care not to interfere with the transmission of the message which follows the urgency signal.

#### § 83.248 Urgency message.

(a) The urgency signal and call, and the message following it, shall be sent on one of the international distress frequencies (500 kc/s radiotelegraph; 2182 kc/s radiotelephone). However, 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 shall 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" (CQ).

(c) When the urgency signal has been sent before transmitting a message "to all stations" (CQ) and which calls for action by the stations receiving the message, the station responsible for its transmission shall cancel it as soon as it knows that action is no longer necessary. This message of cancellation shall likewise be addressed "to all stations" (CQ).

#### § 83.249 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 shall be sent before the call.

(c) In radiotelephony, the safety signal consists of the word SECURITY, spoken three times and transmitted before the call.

(d) The safety signal and call shall be sent on one of the international distress frequencies (500 kc/s radiotelegraph; 2182 kc/s radiotelephone). However, stations which cannot transmit on a distress frequency may use any other available frequency on which attention might be attracted.

#### § 83.250 Safety message.

(a) The safety signal and call shall 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 shall 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 kc/s shall be transmitted towards the end of the first available period of silence; the safety message shall be transmitted immediately after the period of silence.

(c) Messages containing meteorological warnings, or containing information concerning the presence of cyclones, dangerous ice, dangerous wrecks, or any other imminent danger to marine navigation, shall be preceded by the safety signal and transmitted with the least possible delay to other mobile stations in the vicinity, and to the appropriate authorities at the first point of the coast with which contact can be established.

(d) All stations hearing the safety signal shall listen to the safety message until they are satisfied that the message is of no concern to them. They shall not make any transmission likely to interfere with the message.

### Subpart K—Foreign Ship Stations in United States Waters

#### § 83.261 Inspection of station.

The radio station on board any foreign ship within the territorial jurisdiction of the United States, which is subject to the provisions of any act, treaty, or convention binding on the United States, shall be available at any reasonable time for inspection by representatives of the Commission at such intervals as, within the discretion of the Commission, will insure compliance with the applicable rules, regulations, laws, and treaties.

**§ 83.262 Applicability of Part II of Title III of Communications Act.**

Those provisions of part II of title III of the Communications Act which require an efficient radio station in operating condition in charge of and operated by one or more radio officers or operators, and with efficient radio direction finding apparatus, are applicable to a ship of any foreign country when such ship leaves or attempts to leave any harbor or port of the United States for a voyage in the open sea, except as otherwise provided by section 352(a) of the said Act.

**§ 83.263 Limitations on transmission.**

(a) Sections 301 and 318 of the Communications Act, relative to station licenses and operator licenses, respectively, are not applicable to any person sending radiocommunications or signals on a foreign ship while the same is within the jurisdiction of the United States; however, such communications or signals shall be transmitted only in accordance with applicable rules of the Commission intended to prevent interference including, among others, the following subparagraphs:

(1) The frequency or frequencies and the class or classes of emission used shall be available for the operation being conducted pursuant to the allocation of frequencies to radio services and the use of classes of emission established by the International Radio Regulations and pursuant to the terms of all other applicable international treaties and agreements to which the United States is a party;

(2) The operation of the radio apparatus shall not cause interference with the normal communications of other radio services, and only the minimum power necessary for effective communication shall be used;

(3) The station shall comply with the applicable provisions of the International Radio Regulations and other applicable international treaties and agreements to which the United States is a party;

(4) The operation of transmitting apparatus employing B emission is prohibited in any harbor or port of the United States, except that such emission may be used until January 1, 1966 for distress calls and distress traffic only.

(b) Any transmission by a station on board a foreign man-of-war shall, in addition to the provisions of paragraph

(a) of this section, be governed also by the following provisions:

(1) Transmission by radio from any foreign man-of-war while the same is within the territorial waters of the United States is prohibited unless authorized by appropriate United States authorities and carried on in conformity with the provisions of paragraph (a) of this section. Normally, a request from a foreign man-of-war to use its radio transmitting apparatus while in United States ports and territorial waters shall be made to one of the United States naval district commandants or, after arrival in port, to the senior United States Navy Officer present. When a Navy Officer is not present, request shall be made to the port authorities, or to the United States Navy at Washington, D. C.

NOTE: The headquarters of District Commandants concerned are located at Boston, New York, Philadelphia, Norfolk; Charleston, South Carolina; San Diego, San Francisco, Seattle; Pearl Harbor, Hawaii; and Balboa, Canal Zone. In addition to having senior naval officers stationed at these places, the Navy has officers performing various duties at practically all other important United States ports.

**Subpart L—Message Charges**

**§ 83.271 Distress messages.**

No charge shall be made by any ship or station in the mobile service of the United States for the transmission of distress messages and replies thereto in connection with situations involving the safety of life and property at sea.

**§ 83.272 Danger messages.**

No charge shall be made by any ship station or other station in the maritime mobile service of the United States for the transmission, receipt, or relay of the information concerning dangers to navigation designated in § 83.303(b), originating on a ship of the United States or of a foreign country.

**§ 83.273 Tariff filing required.**

No charge shall be made for the service of any station on board ship subject to this part unless effective tariffs applicable to such service are on file with the Commission, pursuant to the requirements of section 203 of the Communications Act and Part 61 of this chapter.

**§ 83.274 Responsibility for payment.**

(a) Each ship station shall be 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.

(b) The transmission by any ship station of information concerning dangers to navigation, made in compliance with the provisions of § 83.303(b), to any station which imposes a charge for the reception, relay, or forwarding of the required information, shall be free of cost to the ship concerned and any communication charges incurred by the ship for transmission, relay, or forwarding of the information may be certified to the Commission for reimbursement out of moneys appropriated to the Commission for that purpose.

**§ 83.275 Ship position reports.**

Any common carrier subject to the Communications Act may furnish reports of positions of ships at sea to newspapers of general circulation, either at a nominal charge or without charge, provided the name of such common carrier is displayed along with such ship position reports.

**§ 83.276 Free safety service.**

Notwithstanding any other provision of law, any ship station may render free service in connection with situations involving the safety of life and property, including hydrographic reports, weather reports, reports regarding aids to navigation and medical assistance to injured or sick persons on ships and aircraft at sea: *Provided*, That the Commission, from time to time under particular circumstances, may impose specific limitations on such free service to the extent that it finds desirable in the public interest.

**§ 83.277 Free service for national defense.**

Any common carrier subject to the Communications Act may render to any agency of the United States Government free service in connection with the preparation for the national defense. Every such carrier rendering any such free service shall make and file in duplicate, with the Commission, on or before the 31st day of July and on or before the 31st day of January in each year, reports covering the periods of 6 months ending on the 30th day of June and the 31st day of December, respectively, next prior to said dates. These reports shall

show the names of the agencies to which free service was rendered pursuant to this paragraph, the general character of the communications handled for each agency, and the charges in dollars which would have accrued to the carrier for such service rendered to each agency if charges for all such communications had been collected at the published tariff rates.

**Subpart M—Nature of Service Provided by Ship Stations and Ship-board Marine-Utility Stations****§ 83.301 Supplemental eligibility requirements.**

(a) Subject to the basic eligibility requirements set forth in § 83.23, authorizations for limited ship stations, marine-utility stations, or public ship stations may be granted to any person, or state or local government subdivision; or any agency of the Federal Government which is subject to the provisions of section 301 of the Communications Act: *Provided*, That when the availability of the frequency assignment requested, or any part thereof, is specifically dependent upon the activity and/or the routes of voyage of the vessel, the application shall clearly show eligibility of the vessel for such station authorization under the provisions of this part which govern the assignment of frequencies: *And provided further*, That:

(1) An applicant for an authorization to operate a public ship station must request a frequency assignment on which the transmission of public correspondence is not excluded by any of the provisions of this part (although additionally he may request any other frequency assignment).

(2) An applicant for an authorization to operate a limited ship station or a marine-utility station must request a frequency assignment on which the transmission of public correspondence is excluded.

**§ 83.302 Points of communication.**

Subject to the conditions and limitations imposed by the terms of the particular station license or by applicable provisions of this part with respect to the use of particular radio-channels, limited ship stations, marine-utility stations on board ships, and public ship stations are authorized to communicate with any station in the maritime mobile service including such other classes of stations

as may be appropriately authorized in accordance with the provisions of this part for such communication: *Provided, however,* That for purposes of public correspondence between ship and shore, public ship stations are authorized to communicate only with public coast stations and United States Government coast stations open to public correspondence.

**§ 83.303 Service requirements for all ship stations.**

(a) Unless prohibited by the terms of the station license or by other sections of this part relative to the limited use of a specifically designated frequency, each ship station shall, within the scope of its normal operations and without discrimination, acknowledge all calls directed to it and receive from stations operating in the maritime mobile service, all messages and communications which are addressed to the ship or to any person or persons on board and which are for termination on such ship.

(b) The master of every ship, equipped with licensed radio transmitting apparatus capable of providing communication with other ships or with a coast station, on meeting with a direct danger to the navigation of other ships such as dangerous ice, a dangerous derelict, a tropical storm, or any other direct danger to navigation, or encountering sub-freezing air temperatures associated with gale force winds causing severe ice accretion on superstructures, or winds of force 10 or above on the Beaufort scale for which no storm warning has been received, shall cause to be transmitted, insofar as is possible, all pertinent information relating thereto to ships in the vicinity and to the appropriate authorities on land, provided that such procedure, in the discretion of the master, will not be a repetition of action already taken for this purpose by another station. All radio messages transmitted pursuant to this paragraph shall be preceded by the safety signal.

(c) At the request of any station operating in the maritime mobile service, a ship station may, within the scope of its normal operation accept messages or communications as requested 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, it shall be incumbent upon that station to re-

transmit the message as directed, with the least delay possible.

**§ 83.304 Service requirements for public ship stations.**

In addition to such messages as are necessary for compliance with § 83.303, and except as may be otherwise limited by the terms of this part governing the use of particular frequencies or by the terms of the station license, a public ship station within the scope of its normal service, without discrimination and upon reasonable demand, shall provide, subject to the order of priority prescribed in § 83.177, a service of public correspondence for any person who, while on board in any status or capacity, requests the service covering any subject matter that legally may be transmitted by radio: *Provided, however,* That, unless specifically authorized by the Commission in individual cases in advance, this service shall not be authorized to be provided when the ship carrying the station is out of service as a ship.

**§ 83.305 Service of limited ship stations and marine-utility stations.**

In addition to such messages as are necessary for compliance with § 83.303 and except as may be otherwise limited by the terms of this part governing the use of particular frequencies or by the terms of the station license, a limited ship station or a marine-utility station is authorized to transmit within the scope of its normal operations messages necessary for the safe, expeditious or economical operation of ships or (when necessary) for the safety of aircraft.

**Subpart N—Use of Radiotelegraphy**

**§ 83.321 Authorized frequencies.**

(a) The following frequencies are authorized for use by ship stations employing telegraphy for communication with ship or coast stations (public or limited):

(1) Stations assigned the frequency band 405–535 kc/s:

kc/s	kc/s
1 410	468
425	480
1 444	500 calling and distress
448 (region 2 only)	1 512 (regions 1 and 3 only)
454	

<sup>1</sup> Subject to the special conditions and limitations set forth in paragraph (b) of this section.

(2) Stations assigned the frequency band 90–160 kc/s:

kc/s	kc/s
143 calling	155
152	156
153	157
154	158

(b) (1) The frequency 444 kc/s is assignable exclusively for communication with United States Government stations; its use for any other communication (except distress) is not authorized: *Provided*, That harmful interference shall not be caused to the service of any coast station.

(2) In addition to the transmission of specific signals for purposes of radiolocation, the radio channel of which 410 kc/s is the assigned frequency may be used for communication by radiotelegraphy with direction finding stations in connection with established international operating procedure, relative to radiolocation by means of direction finding.

(3) In Regions 1 and 3 the frequency 512 kc/s may be used by ship stations:

(i) As a supplementary calling frequency when 500 kc/s is being used for distress purposes;

(ii) As a working frequency, except in those areas where it is in use as a supplementary calling frequency when 500 kc/s is being used for distress purposes.

#### § 83.322 Frequencies for use in distress.

(a) The international distress frequency is 500 kc/s; it is used as an assigned frequency for this purpose by ship, survival craft, or aircraft stations using frequencies in the band 405–535 kc/s, when requesting assistance from the maritime services. It is used, preferably with A2 emission, for the distress call and distress traffic.

(b) The frequency 8364 kc/s is for use by survival craft stations equipped to transmit within the band 4000–27,500 kc/s and desiring to establish with stations of the maritime and aeronautical mobile services communications relating to search and rescue operations.

(c) The frequency 121.5 Mc/s (class A2 emission only) is available for radio beacon purposes to the survival craft stations of vessels documented by the United States Treasury Department, Bureau of Customs.

#### § 83.323 Frequencies for call and reply.

(a) (1) The frequency 500 kc/s is the general international calling frequency which shall be used by any ship station

engaged in radiotelegraphy in the authorized band 405–535 kc/s, and by aircraft desiring to enter into communication with a station of the maritime mobile service using frequencies in this band;

(2) The frequency for replying to a call sent on the general calling frequency is 500 kc/s, except where the calling station requests that the reply be made on an authorized working frequency. In Region 2, and in other areas of heavy traffic, ship stations should request coast stations to answer on their normal working frequency;

(3) In order to facilitate the reception of distress calls, all transmissions on the frequency 500 kc/s shall be reduced to a minimum.

(b) The frequency 143 kc/s is the international calling frequency in the maritime mobile service in the band 90–160 kc/s (class A1 emission only). The frequency for replying to a call sent on the frequency 143 kc/s is, for ship stations, 143 kc/s, the same as that of the call. (Coast stations reply on their normal working frequency in this band.) When a ship station which uses frequencies within the band 90–160 kc/s desires to establish communication with another station of the maritime mobile service, it shall call that station on the frequency 143 kc/s, unless the International List of Coast Stations provides otherwise. This frequency shall be used exclusively for individual calls and replies to such calls and for the transmission of signals preparatory to traffic.

(c) In Region 2, the frequency 2091 kc/s is the international calling frequency for ship stations using telegraphy within the band 2065–2107 kc/s. It shall be used for call, reply and signals preparatory to traffic by all ship stations using telegraphy to establish communication with other ship stations operating in the band 2065–2107 kc/s or with coast stations using telegraphy and operating in the band 2000–2850 kc/s: *Provided*, That transmission by ship stations for this purpose on any calling frequency within the band 2088.5–2093.5 kc/s is permissible as a practical operating procedure to minimize interference, in lieu of transmission on the frequency 2091 kc/s. The use of the frequency 2091 kc/s or any other calling frequency within the band 2088.5–2093.5 kc/s by ship stations for purposes other than those stipulated in this paragraph (except for transmitting distress traffic)

is not authorized. A ship station, after establishing communications on a calling frequency within this band, shall change to an authorized working frequency for the transmission of traffic.

(d) Calling frequencies in the band 2 to 27.5 Mc/s for ship and aircraft stations are listed in Table 1b of § 83.701. Ship stations are authorized to use the calling frequencies corresponding to the symbols designated on the station license.

#### § 83.324 Frequencies for working.

(a) Each assigned frequency listed in § 83.321(a), and which is not identified therein with a specific use or function, is authorized as an assigned frequency for "working".

(b) Ship and aircraft stations using telegraphy and working on frequencies within the band 415 to 490 kc/s shall use whenever practicable, an authorized working frequency of which 425, 448, 454, 468 or 480 kc/s is the assigned frequency. The frequency 448 kc/s may be used in Region 2 only.

(c) The calling channel of which 500 kc/s is the assigned frequency may be used for the transmission of distress, urgency, and safety messages; except for the applicable provisions of §§ 83.402 and 83.403 relative to radiolocation, any other use of this channel for working is prohibited.

(d) Insofar as practicable, ship stations shall use frequency assignments within the band 3 Mc/s to 27.5 Mc/s only when other frequency assignments will not provide effective communications.

(e) Working frequencies in the band 2 to 27.5 Mc/s for high traffic ships and aircraft are listed in Table 1a and for low traffic ships in Table 1c of § 83.701. Ship stations are authorized to use the working frequencies corresponding to the symbols designated on the station license. The frequencies for working in each band designated by the letter "A" or "B" (see § 83.701(h)) suffixed to the frequency column symbol are the primary frequencies to be used for working. The alternate frequency in each band may be used only when harmful interference to the ship's transmissions on the primary frequency is experienced or a coast station directs the ship station to use the alternate frequency. Frequencies in the band 2065 to 2107 kc/s are not available for assignment to aircraft.

(f) In addition to the frequency assignment designated for telegraphy in the license of a ship station, such station,

when working by telegraphy with a coast station, may, on condition that its emission-bandwidth and frequency tolerance shall be within the respective limits thereof permitted for the coast station, transmit:

(1) On a telegraph working channel of a coast station within the band 110 to 150 kc/s (except within the band 140 kc/s to 146 kc/s) when directed to do so by the coast station for which the channel is authorized: *Provided*, Interference is not caused to the service of any land, fixed, broadcast, or radiolocation station: *And provided*, That the emission shall be class A1 only.

(2) On a telegraph working channel of a coast station within the band 415 to 490 kc/s when directed to do so by the coast station for which the channel is authorized.

(g) (1) In addition to use of the frequency assignment designated for telegraphy in the license of a ship station, such station when communicating by telegraphy with a mobile or land station of the United States Government may transmit on a government frequency assignment when authorized or directed to do so by the government station responsible or by the government department or agency for which use of such frequency assignment is authorized; on condition that the emission-bandwidth and frequency tolerance of the ship station shall be within the respective limits thereof required to be maintained by the government station. Under these circumstances, the ship station assigned frequency, the class of emission, and the permissible class of traffic shall be designated and controlled by the responsible government station, department, or agency: *Provided*, That on frequencies below 160 kc/s and within the bands 2000 to 2850 kc/s and 17000 to 25000 kc/s the emission shall be class A1 only.

(2) Frequencies assigned to government radio stations are assignable to non-Government ship radio stations for communication with other non-Government stations by telegraphy when such communication is necessary in connection with activities performed in coordination with or in behalf of the Federal Government and where the Commission determines, after consultation with the appropriate government agency or agencies, that such assignment is necessary.

(h) The frequencies 2072.5 and 2077.5 kc/s are authorized for wide-band telegraphy, facsimile, and special transmis-

sion systems when designated in the ship station license.

#### § 83.325 Use of Morse Code required.

The signal code employed for telegraphy by stations in the maritime mobile service shall be the Morse Code signals specified in the Telegraph Regulations annexed to the International Telecommunication Convention, Geneva, 1959. However, for radiotelegraph communication of a special character, the use of other signals may be specifically authorized by the Commission in response to an appropriate application therefor.

#### § 83.326 Identification of stations.

(a) All radiotelegraph emissions of a ship station or a survival craft station shall be clearly identified by transmission therefrom of the official call letters assigned to that station for telegraphy by the Commission. These call letters shall be transmitted by telegraphy in accordance with § 83.325 and the procedure set forth in the International Radio Regulations and by means of the class of emission normally used by the station for telegraphy: *Provided*, That they shall be transmitted at intervals not exceeding 15 minutes whenever transmission is sustained for a period exceeding 15 minutes.

(b) The requirements of this section do not apply to survival craft stations when transmitting distress signals automatically or when operating on 121.5 Mc/s for radiobeacon purposes.

#### § 83.327 Procedure in testing.

(a) Ship stations and survival craft stations may conduct necessary tests on any assigned frequency. Every precaution must be taken to ensure that transmitter emissions of the station will not cause harmful interference. Radiation must be reduced to the lowest practicable value and if feasible shall be entirely suppressed. When radiation is necessary or unavoidable, the radiotelegraph testing procedure described in this paragraph shall be followed:

(1) The licensed radiotelegraph operator responsible for operation of the transmitting apparatus shall ascertain by careful listening that the test emissions will not be likely to interfere with transmissions in progress; if they are likely to interfere with the service of a coast station or aeronautical station in the vicinity of the ship station, the con-

sent of the former station(s) must be obtained before the test emissions occur.

(2) The operator shall transmit the signal "IE" (two dots, space, one dot) on the test frequency as a warning that test emissions are about to be made on that frequency. When the frequency or frequencies of the test emissions is/are within the frequency-band 405-535 kc/s, a listening watch shall be maintained on 500 kc/s by a licensed radiotelegraph operator at the station throughout the test period.

(3) If, as a result of transmitting the test signal "IE", any station indicates, by transmitting the signal "AS" (wait), that it anticipates harmful interference, testing shall be suspended. When transmission of "IE" is resumed and no response is observed, and careful listening indicates that harmful interference should not be caused, the operator shall proceed as set forth in subparagraph (4) of this paragraph.

(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 shall be transmitted. The call sign shall be sent clearly and at relatively slow speed. This test transmission shall not be repeated until a period of at least one minute has elapsed; on the frequency 500 kc/s in a region of heavy traffic, a period of at least five minutes shall elapse before the test transmission is repeated.

(b) When testing is conducted on the frequency 500 kc/s, no tests shall be conducted during the 500 kc/s 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.

#### § 83.328 Radiotelegraph operating procedure.

(a) Except for the transmission of distress or urgency signals, all transmissions from stations on board ship must cease within the band 485-515 kc/s during each 500 kilocycles silence period, i.e., for three minutes twice an hour beginning at x h. 15 and x h. 45, Greenwich mean time.

(b) In order to facilitate radiotelegraph communication in the maritime mobile service, all ship stations transmitting by means of telegraphy shall, whenever practicable, use the service abbreviations ("Q" signals) listed in Appendix 13 to the International Radio Regulations, Geneva, 1959.

(c) In addition to compliance with all applicable sections of this part, the operation of ship stations using telegraphy for call, reply, and the transmission of message traffic shall, in particular, comply with all applicable provisions of Articles 29, 30, 31, 37, 38, and 39 of the International Radio Regulations, Geneva, 1959.

#### § 83.329 Station documents.

(a) The compulsorily fitted ship radiotelegraph station shall be provided with the following documents:

- (1) A valid station license;
- (2) The necessary operator license(s);
- (3) The station log required by this part for stations of this category;
- (4) The Alphabetical List of Call Signs of Stations used in the Maritime Mobile Service;
- (5) The List of Coast Stations;
- (6) The List of Ship Stations;
- (7) The List of Radiodetermination and Special Service Stations;
- (8) The International Radio Regulations, Geneva, 1959;
- (9) Telegraph tariffs of the countries for which the station most frequently accepts radiotelegrams;
- (10) Part 83 of this chapter.

(b) All ship stations on board ships not compulsorily fitted with a radiotelegraph installation, but using telegraphy, shall be provided with the documents prescribed by subparagraphs (1), (2), (3), (4), (5), (6), (8), (9), and (10) of paragraph (a) of this section.

(c) These documents shall be continuously and readily available to the licensed operator on duty during the hours of service of the station.

#### § 83.330 Station logs.

(a) (1) Each ship station authorized to use telegraphy on frequencies within the band 90 to 535 kc/s shall maintain an accurate radiotelegraph log. The first page of each portion of the log covering each voyage shall consist of a "title page" which, upon completion of all entries for the particular voyage, shall contain the following information:

- (i) Name of ship and call letters of ship station;
- (ii) Period of time covered by such portion of the log;
- (iii) Number of pages constituting such portion of the log;
- (iv) A statement as to whether or not such portion of the log contains distress entries; if so, the pages containing such entries shall be designated;

(v) Operator's signature, mailing address, and radio operator license data (number, class, and date of issuance).

(2) In addition, the log shall be maintained as follows:

(i) Each sheet of the log shall be numbered in sequence, for each voyage, and shall include the name of the vessel, official call letters of the ship station and the name of the operator on watch.

(ii) The entry "on watch" shall be made by the operator beginning a watch, followed by his signature. The entry "off watch" shall be made by the operator being relieved or terminating a watch, followed by his signature. All log entries shall be currently completed at the end of each watch by the operator responsible for the entries. The use of initials or signs is not authorized in lieu of the operator's signature.

(3) During the period a watch is maintained by an operator, all calls transmitted to or from the ship station and all replies transmitted or received shall be entered, stating the time and frequencies, and the call letters of the station communicated with or heard. (If desired, the names of the stations or ships also may be entered.) In addition, a notation of any messages exchanged shall be entered stating the time, the frequency in kilocycles, and the call letters of the station(s) heard, or communicated with. (If desired, the names of the stations or ships also may be entered.) In so far as possible, a positive entry with respect to reception on 500 kc/s shall be made at least once in each 15 minutes. The entries required by subparagraph (5) of this paragraph shall be acceptable as positive entries: *Provided*, Operating conditions are such as to prevent additional entries being made.

(4) The date and time of each occurrence or incident required to be entered in the log shall be shown opposite the entry and the time shall be expressed in Greenwich mean time (GMT),<sup>1</sup> except that in the Great Lakes region the time shall be expressed in eastern standard time (e.s.t.) (counted from 0000 to 2400 o'clock, beginning at midnight). The first entry in each hour shall consist

<sup>1</sup> For example, 8:01 p.m. eastern standard time should be entered as 0101 GMT; 8:30 a.m. eastern standard time should be entered as 1330 GMT; 7:45 p.m. eastern standard time should be entered as 0045 GMT.

of four figures; additional entries in the same hour may be expressed in two figures by omitting the hour designation. The abbreviation "GMT" (e. s. t. in the Great Lakes region) shall be marked at the head of the column in which the time is entered.

(5) During the period a watch is maintained by an operator, an entry shall be made twice per hour stating whether or not the international silence period was observed. In addition, entries shall be made indicating any signals or communications heard on 500 kilocycles during this period. If no signals are heard on 500 kc/s, an entry to that effect shall be made. The use of rubber stamps for making entries to show observation of the silence period is not authorized.

(6) All distress calls, automatic-alarm signals, urgent and safety signals made or intercepted, the complete text, if possible, of 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, shall 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, if it can be determined.

(7) Whenever harmful interference is experienced, an entry shall be made to that effect, stating the source of the interference, if known.

(8) The approximate geographical location of the ship, preferably the noon position, shall be entered each day of each voyage, either in terms of latitude and longitude, or as the distance in nautical miles and the direction from a known fixed point. For this purpose, the master of the ship shall furnish this information to the radio operator. The position report so furnished shall correspond to any entry of the same position made in other official records of the ship.

(9) An entry shall be made of the date and time of departure and arrival of the vessel at each port, including in each entry the name of the port.

(10) A daily entry shall be made regarding comparison of the radio station clock with standard time, including an indication of any errors observed and corrections made. For this purpose, authentic radio time signals received from land or fixed stations shall be acceptable as standard time.

(11) All test transmissions shall be entered, together with the time of such transmissions and the approximate geo-

graphical location of the vessel, without regard to whether two-way communication with any other station is established.

(12) Any failure of equipment to operate as required, any failure of power supply, any inability to obtain sufficient power to charge storage batteries or to properly operate the radio installation and any incidents tending to unduly delay communications shall be entered.

(b) In addition to the radio log requirements stipulated in paragraph (a) of this section, the radio log of each ship station authorized to use telegraphy on frequencies within the band 90 to 535 kc/s, shall, when the ship is required by law and regulations to keep a radiotelegraph watch on 500 kc/s for safety purposes by means of a qualified operator, comply also with the following provisions:

(1) Entries shall 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.

(2) An entry shall be made each time the emergency power supply is used (when the vessel is in the open sea) to carry on communication (other than a watch for safety purposes), stating the approximate period of time of such use.

(3) Results of inspections and tests of lifeboat radio equipment, when installed in compliance with requirements of law, prior to departure of the vessel from a harbor or port and the results of weekly inspections of such lifeboat equipment shall be entered.

(4) On a cargo vessel equipped with an auto-alarm, the entry "auto-alarm on", "sensitivity set at (the actual setting of the sensitivity control at the time the auto-alarm is placed in operation should be designated)", and the entry "auto-alarm off", respectively, shall be made whenever the operator places the auto-alarm in and out of operation. Results of the required auto-alarm tests shall be entered daily, including the sensitivity-control setting and the minimum number of 4-second dashes from the testing device which were necessary to properly operate the alarm.

(5) On a cargo vessel equipped with an auto-alarm, an entry shall be made in the radio station log whenever the visual indicator installed on the bridge (to indicate when the alarm becomes inoperative due to prolonged atmos-

pherics or other interference), remains actuated for a continuous period of 5 minutes. A statement shall be included giving particulars as to the time the operator was called to make the necessary repairs or adjustments; any reason for the failure; the names of any parts removed, added, or substituted; repairs effected; and the time the alarm was restored to proper operating conditions.

(6) On a cargo vessel equipped with an auto-alarm, an entry shall be made in the radio station log whenever the auto-alarm becomes inoperative due to causes not indicated by the audible warning or the visual indicator, or whenever the audible warning is actuated. The entry shall include a statement showing the time the operator was called to make any necessary repairs or adjustments; the reason for the audible alarm being actuated or failing to be actuated, any parts removed, added, or substituted; repairs effected; and the time the auto-alarm was restored to proper operating condition.

(7) A daily entry shall be made while the ship is at sea showing whether the storage batteries forming part of the main installation or the emergency installation were brought up to the normal full charged condition that day.

(8) Entries shall be made stating when each storage battery used as the power supply for the main and emergency installations is placed on charge or off charge.

(9) Entries shall be made stating details of maintenance of lifeboat radio equipment, including a record of charging of any storage batteries supplying power to such equipment. The record of charging shall show when such storage battery is placed on charge and when it is taken off charge.

(c) Each ship station authorized to use telegraphy, on frequencies above 550 kc/s exclusively (except ship stations on the Great Lakes and on board vessels navigated solely on inland waters of the United States), shall maintain an accurate radiotelegraph log as prescribed in paragraph (a) of this section: *Provided*, That paragraph (a) (3) and (5) of this section shall, in this case, not be applicable.

(d) Each ship station on the Great Lakes and on board a vessel navigated solely on inland waters of the United

States which is authorized to use telegraphy, on frequencies above 550 kc/s exclusively, shall maintain an accurate radiotelegraph log as follows:

(1) Each sheet of the log shall be numbered in sequence and shall include the name of the vessel, official call letters of the ship station and the signature of the licensed operator in attendance at the time communication is effected.

(2) An entry shall be made for each complete exchange of communications with any station, stating the approximate geographical location of the vessel, the call letters or the name of the station communicated with, the time of the communication, the nature of the messages or signals exchanged, and designation of the transmitting frequencies.

(3) All test transmissions shall be entered, including designation of the transmitting frequency, together with the time of commencement and completion of such transmissions and the approximate geographical location of the vessel, without regard to whether two-way communication with any other station is established.

(4) All distress calls, urgent and safety signals made or intercepted: the complete text, if possible, of distress messages and distress communication; and any incidents or occurrences which may appear to be of importance to safety of life or property shall be entered, together with the time of such observation of concurrence, designation of the frequency on which such transmissions were received, and the position of the ship or other mobile unit in need of assistance, if it can be determined.

(5) Any failure of equipment to operate as required, any failure of power supply, any inability to obtain power to charge storage batteries or to properly operate the radio installation and any incidents tending to unduly delay communication shall be entered.

(6) The date and time of making an entry shall be shown opposite the entry and the time shall be expressed as follows:

(i) For vessels navigated on the Great Lakes:

Eastern standard time (e. s. t.) (counted from 0000 to 2400 o'clock beginning at midnight).<sup>2</sup> The first entry in each hour shall consist of four figures; additional en-

tries in the same hour may be expressed in two figures by omitting the hour designation. The abbreviation "e. s. t." shall be marked at the head of the column in which the time is entered.

(ii) For vessels navigated on inland waters of the United States, other than the Great Lakes:

Local standard time (e. s. t., c. s. t., etc.) (counted from 0000 to 2400 o'clock, beginning at midnight).<sup>2</sup> The first entry in each hour shall consist of four figures; additional entries in the same hour may be expressed in two figures by omitting the hour designation. The abbreviation "e. s. t." or "c. s. t.", etc., shall be marked at the head of the column in which the time is entered. However, this provision shall not prohibit the use of time entries expressed in GMT (and so indicated) in lieu of local standard time.

(e) The ship radiotelegraph log currently in use shall be kept by the licensed operator(s) of the station and while in use it shall be located in the radiotelegraph operating room of the ship. At the conclusion of each voyage terminating at a port of the United States, the original station log or a duplicate thereof dating from the last departure of the ship from a United States port shall be retained under proper custody on board the ship for a sufficient period of time, but not necessarily in excess of 24 hours, to be available for inspection by a duly authorized representative of the Commission. Thereafter the original log, and the duplicate log, if provided, may be filed at an established shore office of the ship station licensee, and shall be retained as stipulated by § 83.115.

§ 83.331 Station records.

In all ship stations authorized to transmit on frequencies within the band 405-535 kc/s, a written record shall be maintained of the adjustments of the transmitting and receiving equipment for operation on the assigned frequencies 410 kc/s and 500 kc/s and at least two authorized working frequencies within this band. This record shall be posted at all times in a conspicuous place on or near the particular equipment involved.

<sup>2</sup> For example, 7:01 p. m. eastern standard time would be entered as 1901 e. s. t.; 7:30 a. m. eastern standard time would be entered as 0730 e. s. t.; 6:45 p. m. eastern standard time would be entered as 1845 e. s. t.

Subpart O—Use of Radiotelephony

§ 83.351 Assignable frequencies.

(a) The specific frequencies below 23 Mc/s authorized for radiotelephony in the bands designated on the station license are as follows:

kc/s	kc/s	kc/s	kc/s
2003	2382	4104.4	8249.2
2009	2390	4117.2	8261.9
2031.5	2406	4123.6	12361.5
2118	2430	4129.9	12375.5
2126	2458	<sup>2</sup> 4372.4	12382.5
2134	2572	4377.4	12396.5
2142	2638	<sup>1</sup> 6240	16477.5
2158	2738	<sup>1</sup> 6455	16491.5
2166	2782	8204.4	16512.5
2182	2784	<sup>2</sup> 8205.5	16526.5
2198	2830	<sup>1</sup> 8210.8	22031.5
2206	<sup>2</sup> 4067	8217.2	22045.5
2214	4072.4	8223.6	22066.5
2366	4091.6		

<sup>1</sup> Mississippi River System only.

<sup>2</sup> Mississippi River System only. Not available after June 30, 1962.

(b) The following frequencies are authorized for radiotelephony when specifically designated in the station license:

35.06 Mc/s, 35.10 Mc/s, 35.14 Mc/s, 35.13 Mc/s

(1) Persons authorized pursuant to this part to operate radio stations on frequencies in the band 35-45 Mc/s must recognize that the band is shared with various services in other countries; that harmful interference may be caused by tropospheric and ionospheric propagation of signals from distant stations of all services of the United States and other countries operating on frequencies in this band; and that no protection from such harmful interference generally can be expected. Persons desiring to avoid such harmful interference should consider operation on available frequencies higher in the radio spectrum not generally subject to this type of difficulty.

NOTE: Effective April 1, 1958, no new radio systems will be authorized in the maritime mobile service on the frequencies listed in this paragraph. An application requesting initial authority (or equivalent) to operate on one or more of these frequencies in behalf of a particular applicant will be construed as an application for a new radio system. All authorizations for the use of one or more of these frequencies will expire not later than March 31, 1963.

(c) [Reserved]

(d) Assignment of the specific carrier frequencies designated in paragraph (a) of this section and use of frequency assignments of which those frequencies are the authorized carrier frequencies shall be subject to the express limitations and conditions hereinafter set forth in this paragraph:

(1) Except for test purposes, the frequencies 2738 kc/s and 2830 kc/s may not be used or assigned unless the licensee or applicant therefor submits to the Commission a certification in accordance with the requirements of subparagraph (2) of this paragraph. Transmissions on these frequencies for such test purposes are limited to those necessary for making field intensity measurements to determine whether a particular transmitter complies, either before or after modification, with the requirements set forth in subparagraph (2) of this paragraph. In making such test transmissions, the operating procedures set forth in § 83.365 shall be followed explicitly.

(2) The certification required by subparagraph (1) of this paragraph shall be that made by the manufacturer of the equipment or shall be signed by a person holding at least a second class radiotelephone operator license and shall show the number and class of such license. It shall state that by reason of tests or measurements of the transmitter therein described and performed by the certifier or under his supervision, it has been determined:

(i) That the level of any emission appearing on the second harmonic frequency of the particular carrier frequency desired to be used or assigned is attenuated below the level of the unmodulated carrier on that frequency by not less than the amount shown in the following table:

Maximum authorized transmitter power as specifically defined in § 83.7(v)	Attenuation (decibels)
Up to and including 150 watts.....	40
Over 150 watts up to and including 600 watts.....	50
Over 600 watts.....	60

and

(ii) That the transmitter meets the foregoing requirements without modifi-

cation or in the event that modification of the transmitter was found to be necessary, a specific description of such modification, including a description of any wave trap or device which was utilized.

(3) The requirements of subparagraphs (1) and (2) of this paragraph shall not apply to any transmitter which is type accepted by the Commission for licensing under this part on the frequency or frequencies concerned.

(4) Except in event of distress, use of the frequency 2206 kc/s in the Great Lakes area by ship stations of the United States is prohibited.

(5) The frequency 2182 kc/s is authorized for use on a shared basis primarily by ship stations and secondarily by coast stations.

(6) The frequency 2214 kc/s is authorized for use exclusively at locations at which interference is not caused to the service of any United States Government station.

(7) The frequencies 2638 kc/s and 2738 kc/s are authorized for use on a shared basis with ship stations of other countries, for the purposes hereinafter prescribed in this subpart. Use of these frequencies for ship-to-shore communication in certain geographic areas in accordance with this subpart is authorized upon the express condition that harmful interference shall not be caused to inter-ship communication on these frequencies, nor to the service of any station which, in the discretion of the Commission, has priority on the frequency or frequencies to which interference results: *Provided*, That in respect to stations of the maritime mobile service, this condition shall not be construed as prohibiting the operation of ship stations for authorized ship-to-shore communication on this frequency pursuant to the provisions of §§ 83.176, 83.177(b), 83.179, and 83.180.

(8) Use of the frequencies 4067, 4372.4, 4072.4 and 4377.4 kc/s in the Mississippi River system is authorized upon the express condition that interference shall not be caused to the service of any station which may have priority on the frequency or frequencies used for the service to which interference is caused.

(9) Use of the frequencies 6240 kc/s and 6455 kc/s is authorized in the Mississippi River system upon the express condition that interference shall not be caused to the service of any station which may have priority on the frequency or frequencies used for the service to which interference is caused. In order to avoid such interference, transmission on these frequencies during the period from 8:00 p. m. until 5:00 a. m., c. s. t., is prohibited.

(10) [Reserved]

(11) The frequencies 8205.5 and 8210.8 kc/s are authorized for use on the Mississippi River and connecting inland waters (except the Great Lakes) upon the express condition that transmission on these frequencies during the period from 8:00 p.m. until 5:00 a.m., c.s.t., is prohibited.

(12) Each carrier frequency which is not to be used prior to a specified beginning date, may be used under appropriate station authorization for test transmission during a period commencing not more than two months in advance of such specified beginning date; solely to determine whether an existing ship station is capable of proper technical operation on that particular radio-channel preparatory to the conduct of a normal service thereon: *Provided*, That harmful interference is not caused by such test transmissions to the service of any other station.

#### § 83.352 Frequencies for use in distress.

(a) The frequency 2182 kc/s is the international distress frequency for radiotelephony. It shall be used for this purpose by ship, aircraft, and survival craft stations using frequencies in the authorized bands between 1605 and 4000 kc/s when requesting assistance from the maritime services.

(b) The frequency 121.5 Mc/s (class A2 emission only) is available for radio beacon purposes to the survival craft stations of vessels documented by the United States Treasury Department, Bureau of Customs.

#### § 83.353 Frequencies for calling.

(a) The international general radiotelephone calling frequency for the mari-

time mobile service is 2182 kc/s. It may be used as a carrier frequency for this purpose by ship stations and aircraft stations operating in the maritime mobile service:

(1) In addition this frequency may be used for transmission of:

(i) The international urgency signal, and very urgent messages (preceded by this signal) concerning the safety of a ship, aircraft, or other vehicle, or the safety of some person on board or within sight of such ship, aircraft, or vehicle.

(ii) The international safety signal, and messages (preceded by this signal) concerning the safety of navigation or giving important meteorological warnings; however, safety messages shall be transmitted, when practicable, on a working frequency after a preliminary announcement on 2182 kc/s.

(iii) Brief radio operating signals.

(iv) Brief test signals in accordance with the provisions of § 83.365, as may be necessary to determine whether the radio transmitting equipment of the station is in good working condition on this frequency.

(2) When using this frequency for purposes other than distress calls and distress traffic, and urgency and safety signals and messages, the carrier power of the radio transmitter shall not exceed 100 watts.

(b) The frequency 156.8 Mc/s is the international safety and calling frequency for the maritime mobile radiotelephone service in the band 156-174 Mc/s.

#### § 83.354 Frequencies below 5000 kc/s for public correspondence.

(a) Carrier frequencies which are authorized for use by public ship stations employing telephony by means of amplitude modulation for the transmission of public correspondence exclusively are designated herewith: ship stations shall use the radio-channels of which these frequencies are the authorized carrier frequencies exclusively for working with public coast stations located at, or in the vicinity of, the specific harbors, ports or places designated hereinafter opposite the respective ship transmitting frequency, and

shall receive transmission from the particular coast stations on the associated receiving frequencies also designated herewith:

(1) Frequencies available for use when the mobile station and the coast station transmit alternately on different radio channels:

For communication with coast stations located in the vicinity of—	Mobile station transmitting carrier frequency <sup>1</sup>		Associated coast station carrier frequency	
	Frequency (kc/s)	Specific limitations imposed upon availability for use <sup>2</sup>	Frequency (kc/s)	Specific conditions relating to use of these frequencies by coast stations for transmission as shown in §81.306(b) of this chapter <sup>3</sup>
Boston, Mass. ....	2406 2366	None..... do.....	2506 2450	None. Do.
New York, N. Y. ....	2126 2166 2198 2382	None..... do..... do..... Available on condition that harmful interference is not caused to the service of any ship station which is within 300 nautical miles of New Orleans, La., and is transmitting on this frequency to a coast station located in the vicinity of that port.	2522 2558 2590 2482	None. Do. Do. Available on condition that harmful interference is not caused to the service of any coast station located in the vicinity of New Orleans, La., to which this carrier frequency is assigned for transmission.
	4091.6 4104.4 4129.9	None..... do..... Available for use annually during period Dec. 15 to Mar. 15.	4396.6 4409.4 4434.9	None. Do. Available for use annually during period Dec. 15 to Mar. 15.
Wilmington, Del. ....	2166	None.....	2558	None.
Baltimore, Md. ....	2166	None.....	2558	None.
Norfolk-Quantico, Va. ....	2142 2366	None..... Day only, available on condition that no harmful interference will be caused to any service or any station which in the discretion of the Commission may have priority on the frequency or frequencies used for the service to which interference is caused.	2538 2450	None. Day only, available on condition that no harmful interference will be caused to any service or any station which in the discretion of the Commission may have priority on the frequency or frequencies used for the service to which interference is caused.
Charleston, S.C.—Jacksonville, Fla.	2390	None.....	2566	None.
Lake Allatoona—Lake Sidney Lanier, Ga.	2366	Available on condition that no harmful interference will be caused to any service or any station which in the discretion of the Commission may have priority on the frequency or frequencies used for the service to which interference is caused.	2450	Available on condition that no harmful interference will be caused to any service or any station which in the discretion of the Commission may have priority on the frequency or frequencies used for the service to which interference is caused.
Miami, Fla. ....	2031.5  2118	None.....  Unlimited hours of use from Dec. 15 to Apr. 1, annually, and day only from Apr. 1 to Dec. 15, annually; and also on condition that harmful interference shall not be caused to the service of any ship station in the Great Lakes area which in the discretion of the Commission has priority on the frequency or frequencies used for the service to which interference is caused.	2490  2514	Available on condition that harmful interference shall not be caused to the police radio service in southern California. Unlimited hours of use from Dec. 15 to Apr. 1, annually, and day only from Apr. 1 to Dec. 15, annually, on condition that harmful interference shall not be caused to the service of any coast station located in the vicinity of Miami, Fla., to which the carrier frequency 2490 kc/s is assigned for transmission; and also on condition that harmful interference shall not be caused to the service of any coast station in the Great Lakes area which in the discretion of the Commission has priority on the frequency or frequencies used for the service to which interference is caused.

See footnotes at end of table.

For communication with coast stations located in the vicinity of—	Mobile station transmitting carrier frequency <sup>1</sup>		Associated coast station carrier frequency	
	Frequency (kc/s)	Specific limitations imposed upon availability for use <sup>2</sup>	Frequency (kc/s)	Specific conditions relating to use of these frequencies by coast stations for transmission as shown in § 81.306(b) of this chapter <sup>3</sup>
Miami, Fla.—Con.	2158	Unlimited hours of use from Dec. 15 to Apr. 1, annually, and day only from Apr. 1 to Dec. 15, annually, on condition that harmful interference is not caused to the service of any ship station which is within 300 nautical miles of Tampa, Fla., and is transmitting on this frequency to a coast station located in the vicinity of that port.	2550	Unlimited hours of use from Dec. 15 to Apr. 1, annually, and day only from Apr. 1 to Dec. 15, annually, on condition that harmful interference is not caused to the service of any coast station located in the vicinity of Tampa, Fla., to which this carrier frequency is assigned for transmission.
	4123.6	None.....	4423.6	None.
Tampa, Fla.-----	2009	None.....	2466	None.
	2158	Unlimited hours of use from Dec. 15 to Apr. 1, annually, and day only from Apr. 1 to Dec. 15, annually, on condition that harmful interference shall not be caused to the service of any ship station in the Great Lakes area which in the discretion of the Commission has priority on the frequency or frequencies used for the service to which interference is caused.	2550	Unlimited hours of use from Dec. 15 to Apr. 1, annually, and day only from Apr. 1 to Dec. 15, annually, on condition that harmful interference shall not be caused to the service of any coast station in the Great Lakes area which in the discretion of the Commission has priority on the frequency or frequencies used for the service to which interference is caused.
Mobile, Ala.-----	2430	None.....	2572	None.
New Orleans, La.-----	2206	None.....	2598	None.
	2166	Day only.....	2558	Day only; on condition that harmful interference is not caused to the service of any coast station located in the vicinity of Mobile, Ala., to which the carrier frequency 2572 kc/s is assigned for transmission.
	2382	None.....	2482	None.
Delcambre, La.-----	2458	Day only; on condition that no harmful interference will be caused to any service or any station which in the discretion of the Commission may have priority on the frequency or frequencies used for the service to which interference is caused.	2506	Day only; on condition that no harmful interference will be caused to any service or any station which in the discretion of the Commission may have priority on the frequency or frequencies used for the service to which interference is caused.
Galveston, Tex.-----	2134	None.....	2530	None.
	2366	Day only; on condition that harmful interference is not caused to the service of any ship station which is within 300 nautical miles of Boston, Mass., and is transmitting on this frequency to a coast station located in the vicinity of that port. <sup>3</sup>	2450	Day only; on condition that harmful interference is not caused to the service of any coast station located in the vicinity of Boston, Mass., San Francisco, or Eureka, Calif., to which this carrier frequency is assigned for transmission. <sup>3</sup>
San Juan, P.R.-----	2134	None.....	2530	None.
Great Lakes-----	2118	None.....	2514	Subject to the applicable provisions of § 81.304(d) of this chapter.
	2158	.....do.....	2550	Do.
	4117.2	.....do.....	4422.2	None.
	4129.9	.....do.....	4434.9	Do.
Los Angeles-San Diego, Calif.	2009	None.....	2566	None.
	2382	Available on condition that harmful interference is not caused to the service of any ship station which is within 300 nautical miles of New Orleans, La., and is transmitting on this frequency to a coast station located in the vicinity of that port.	2466	Available on condition that harmful interference is not caused to the service of any coast station located in the vicinity of Tampa, Fla., to which this carrier frequency is assigned for transmission.
	2206	7 a.m. to 7 p.m., P.s.t., only.	2598	7 a.m. to 7 p.m., P.s.t., only.
	2126	.....do.....	2522	Do.

See footnotes at end of table.

For communication with coast stations located in the vicinity of—	Mobile station transmitting carrier frequency <sup>1</sup>		Associated coast station carrier frequency	
	Frequency (kc/s)	Specific limitations imposed upon availability for use <sup>2</sup>	Frequency (kc/s)	Specific conditions relating to use of these frequencies by coast stations for transmission as shown in § 81.306(b) of this chapter <sup>2</sup>
San Francisco-Eureka, Calif.	2003	Available on condition that harmful interference shall not be caused to the service of any ship station which is within 300 nautical miles of Los Angeles or San Diego, Calif., and is transmitting on 2009 kc/s to a coast station located in the vicinity of those ports.	2450	Available on condition that harmful interference is not caused to police radio service in Kansas or Wisconsin.
	2406	None.....	2506	None.
	2142 4072. 4	7 a.m. to 7 p.m., P.s.t., only..... None.....	2538 4377. 4	7 a.m. to 7 p.m., P.s.t., only. None.
Astoria-Portland, Oreg..	2206	None.....	2598	None.
Coos Bay, Oreg.....	2031. 5	7 a.m. to 7 p.m., P.s.t., only; on condition that no harmful interference will be caused to any service or any station which in the discretion of the Commission may have priority on the frequency or frequencies used for the service to which interference is caused.	2566	7 a.m. to 7 p.m., P.s.t., only.
Seattle, Wash.....	2126	None.....	2522	None.
	2430	Authorized for use south of 51° north latitude and east of 142° west longitude exclusively during the following daily periods on condition that harmful interference is not caused to the service of any station in the Alaska area authorized in accordance with Part 85 of this chapter to which this carrier frequency is assigned for transmission: annually from Apr. 1 to Sept. 30, inclusive, from 5 a.m. to 9 p.m., P.s.t., only; and annually from Oct. 1 to Mar. 31, inclusive, from 6 a.m. to 11 p.m., P.s.t., only.	2482	Authorized for use during the following daily periods on condition that harmful interference is not caused to the service of any coast station located in the vicinity of New Orleans, La., nor to the service of any station in the Alaska area authorized in accordance with Part 85 of this chapter to which this carrier frequency is assigned for transmission: annually from Apr. 1 to Sept. 30, inclusive, from 5 a.m. to 9 p.m., P.s.t., only; and annually from Oct. 1 to Mar. 31, inclusive, from 6 a.m. to 11 p.m., P.s.t. only.
Kahuku, Hawaii.....	2134	None.....	2530	None.
	4117. 2	do.....	4422. 2	Do.
Hilo, Hawaii.....	2198	None.....	2582	None.
Palmyra Island, Hawaii.	2134	Available on condition that harmful interference shall not be caused to the service of any ship station which is within 300 nautical miles of Kahuku, Hawaii and is transmitting on this frequency to a coast station located in the vicinity of that port.	2530	Available on condition that harmful interference is not caused to the service of any coast station located in the vicinity of Kahuku, Hawaii to which the carrier frequency 2530 kc/s is assigned for transmission.
St. Thomas Island, V.I.	2009	8 a.m. to 9 p.m., A.s.t., only; on condition that no harmful interference will be caused to any service or any station which in the discretion of the Commission may have priority on the frequency or frequencies used for the service to which interference is caused.	2506	8 a.m. to 9 p.m., A.s.t., only; on condition that no harmful interference will be caused to any service or any station which in the discretion of the Commission may have priority on the frequency or frequencies used for the service to which interference is caused.

<sup>1</sup> These frequencies are those which may be designated in applications for ship station authorizations.

<sup>2</sup> With respect to each specific date set forth, the associated limitation or condition imposed shall terminate or begin as applicable, at 3:00 a.m. eastern standard time.

<sup>3</sup> This carrier frequency is to be made available by the Commission, for use (on a 24-hour basis except where specific hours of use are designated) by the maritime mobile service for ship to shore communication in respect to the particular coast station areas designated, on a specific beginning date to be designated in future rule-making as soon as practicable after its use (or the use of its associated transmitting or receiving frequency) by other radio services is terminated or is reduced to the extent necessary to avoid harmful interference to or from the maritime mobile service.

(2) Frequencies available for use when the mobile station and the coast station transmit alternately on the same radio channel:

For communication with coast stations located in the vicinity of—	Carrier frequency (kc/s) <sup>1</sup>	Specific limitations imposed upon availability for use
Chicago, Ill.; Pittsburgh, Pa.; Louisville, Ky.; St. Louis, Mo.; Memphis, Tenn.; and other locations as required to serve vessels on the Mississippi River and connecting inland waters (other than the Great Lakes).	2782 4072.4 4377.4	None. Subject to applicable provisions of §83.351(d). Do. Do. Do.
Lake Dallas, Tex.; Lake Texoma, Tex. ....	2738	None.
Lake Mead, Nev., and other locations as required to serve vessels on inland waters of the southwestern continental United States.	2782	The use of this frequency in areas other than Lake Mead, Nev., is subject to the condition that harmful interference is not caused to the service of any other station.
The Dalles, Oreg.; Umatilla, Oreg.; and other locations as required to serve vessels on inland waters of the northwestern continental United States, excluding Alaska.	2784	The use of this frequency at locations other than in the vicinity of The Dalles, Oreg., and Umatilla, Oreg., is subject to the condition that harmful interference is not caused to the service of any other station.

<sup>1</sup> These frequencies are those which may be designated in applications for ship station authorizations.

(b) The frequency 2638 kc/s is authorized to public ship stations as a working frequency to communicate with public coast stations authorized to operate on 2638 kc/s for the transmission of safety and operational communications.

(1) Except for safety communications, communications with such public coast stations shall be limited to day only: *Provided*, That operational communications may be continued beyond such time to the extent necessary for compliance with the provisions of § 83.183.

(2) Stations on board aircraft may not use the frequency 2638 kc/s for communication with coast stations except in the event of distress.

(c) The use of the working frequencies authorized in paragraphs (a) and (b) of this section is subject to the applicable conditions and limitations set forth in § 83.351(d). Further, and insofar as is practicable, ship stations shall use frequency assignments within the band 4000 kc/s to 5000 kc/s only when frequency assignments below 4000 kc/s or above 30 Mc/s will not provide effective communication.

§ 83.355 Frequencies from 5000 kc/s to 30 Mc/s for public correspondence.

(a) Carrier frequencies within the band 5000 kc/s to 30 Mc/s which are authorized for use by public ship stations employing telephony by means of amplitude modulation for the transmission of public correspondence exclusively are designated in this section; ship stations shall use the radio chan-

nels of which these frequencies are the authorized carrier frequencies exclusively for working with public coast stations:

(1) Frequencies authorized for use by ship stations on board oceangoing vessels primarily for long-distance communication, when the ship station and the coast station transmit alternately on different radio channels; except as expressly provided otherwise in this subpart, these frequencies shall not be used by ship stations on the Great Lakes or inland waters of the continental United States:

Ship station transmitting carrier frequency <sup>1</sup> (kc/s)	For communication with coast stations located in the vicinity of—	Ship station receiving carrier frequency (kc/s)
8204.4.....	San Francisco, Calif.	8754.4
8217.2.....	Hawaii.....	8767.2
8223.6.....	New York, N.Y.....	8773.6
8261.9.....	do.....	8811.9
12361.5.....	do.....	13161.5
12375.5.....	Hawaii.....	13175.5
12382.5.....	San Francisco, Calif.	13182.5
12396.5.....	New York, N.Y.....	13196.5
16477.5.....	Hawaii.....	17307.5
16491.5.....	New York, N.Y.....	17321.5
16512.5.....	San Francisco, Calif.	17342.5
16526.5.....	New York, N.Y.....	17356.5
22031.5.....	do.....	22681.5
22045.5.....	San Francisco, Calif.	22695.5
22066.5.....	New York, N.Y.....	22716.5

<sup>1</sup> These frequencies are those which may be designated in applications for ship station authorizations.

(2) Frequencies authorized for use by ship stations on board vessels while navigated on the Great Lakes; exclusively for communication with coast stations in the Great Lakes area, when the ship station and the coast station transmit alternately on different radio channels.

Ship stations shall receive transmission from the particular coast stations on the associated receiving frequencies also designated herewith:

<i>Ship station transmitting carrier frequency</i>	<i>Ship station receiving carrier frequency</i>
8249.2 kc/s	8799.2 kc/s

(3) Frequencies authorized for use by ship stations on board vessels while navigated on the Mississippi River and connecting inland waters (other than the Great Lakes); exclusively for communication with coast stations located in the vicinity of any harbor, port, or place on the Mississippi River and connecting inland waters (other than the Great Lakes), when the ship station and the coast stations transmit alternately on the same radio channel:

6240 kc/s	6455 kc/s	8210.8 kc/s
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(b) The use of the working frequencies authorized in paragraph (a) of this section is subject to the applicable conditions and limitations set forth in § 83.351(d). Further, insofar as is practicable, ship stations shall use frequency assignments within the band 5000 kc/s to 30 Mc/s only when frequency assignments below 5000 kc/s or above 30 Mc/s will not provide effective communication.

**§ 83.356 Frequencies above 30 Mc/s for public correspondence.**

(a) [Reserved]

(b) (1) Carrier frequencies within the band 30 Mc/s to 40 Mc/s which, subject to and in accordance with the conditions and limitations hereinafter set forth in this paragraph are authorized for use by public ship stations employing telephony by means of either frequency modulation or amplitude modulation for transmission and reception of public correspondence exclusively on the same radio-channel, only when communicating with public coast stations licensed to transmit on frequencies within this band prior to July 23, 1951, and located within the vicinity of the respective harbor(s), port(s), or place(s) designated herein opposite the particular carrier frequency.

*For communication  
only with coast stations  
within the  
vicinity of—*

Carrier frequency:	
35.14 Mc/s-----	Philadelphia, Pa.
35.18 Mc/s-----	Great Lakes region.

(2) Each of these carrier frequencies is available for use on a shared basis

with limited coast stations, limited ship stations, marine-utility stations and aircraft stations operating in the maritime mobile service at any location on the same radio-channel; they are not available exclusively for public correspondence. Licensees having authority to transmit on these frequencies shall cooperate in the use thereof in order to minimize interference.

(3) Applicants for public ship station licenses or renewal or modification of such licenses whose applications request authority to transmit on 35.14 Mc/s or 35.18 Mc/s for the purpose of communicating with public coast stations as specifically set forth in this section, may be required, in the discretion of the Commission, to show a need for the use of such frequencies for public correspondence in lieu of the specific frequencies above 156 Mc/s authorized in this subpart for public correspondence exclusively.

(4) Ship stations (except stations operating under appropriate licenses granted prior to July 23, 1951) shall not use the carrier frequencies 35.14 Mc/s or 35.18 Mc/s for public correspondence unless such stations are specifically authorized to do so by the terms of the respective ship station license. Notwithstanding the provisions of Subpart M of this part, ship stations shall not be classified as public ship stations because of their authority to transmit on 35.14 Mc/s and/or 35.18 Mc/s, unless they are specifically authorized by the terms of their station licenses to use these carrier frequencies for public correspondence as prescribed in this section.

**NOTE:** Effective April 1, 1968, no new radio systems will be authorized in the maritime mobile service on the frequencies listed in subparagraphs (1) through (4) of this paragraph. An application requesting initial authority (or equivalent) to operate on one or more of these frequencies in behalf of a particular applicant will be construed as an application for a new radio system. All authorizations for the use of one or more of these frequencies will expire not later than March 31, 1968.

**§ 83.357 Additional frequencies for ship to shore communication.**

In addition to the frequencies designated in this part or in the license of a ship station, such station, when working by telephony with a foreign coast station shall, unless otherwise directed by the Commission, transmit to such coast station when directed to do so by that

station on a specific frequency designated by the coast station for the service being carried on.

**§ 83.358 Frequencies below 3000 kc/s for safety purposes.**

(a) Carrier frequencies below 3000 kc/s authorized for working between ship stations employing telephony for transmission and reception on the same radio-channel by means of amplitude modulation, primarily for safety communication, are designated in this section. The transmission of other than safety communication on these radio-channels is restricted to operational communication, except that commercial transport vessels and vessels of municipal or State governments may use these frequencies for ship business purposes as well as operational communication. The transmission of such operational and business communication is authorized upon condition that interference is not caused to safety communication. The use of these carrier frequencies is prohibited when the use of a licensed frequency above 30 Mc/s in lieu thereof would provide effective communication. Their use shall be in accordance with respective geographic areas as follows:

Frequency (kc/s):	Geographic area in which use is authorized
2003----	Great Lakes only.
2738----	All areas except the Great Lakes and the Gulf of Mexico.
2830----	The Gulf of Mexico.
2638----	All areas.

(b) The carrier frequency 2003 kc/s is authorized for use by ship stations for communication with government coast

stations concerning passage of vessels through the respective areas as follows:

(1) On the St. Lawrence Seaway on condition that harmful interference will not be caused to any ship-to-ship communications authorized in paragraph (a) of this section.

(2) On the St. Mary's River on condition that harmful interference will not be caused to ship-to-ship safety communication authorized in paragraph (a) of this section.

(c) The geographic limitations relating to the frequencies 2738 kc/s and 2830 kc/s:

(1) Shall not apply in event of distress or emergency;

(2) Shall not prohibit ship-to-ship communication over any distance less than 200 statute miles when only one of the ship stations is within a geographic area in which use of the respective frequency is permissible;

(3) Shall not prohibit communications between a ship and a limited coast station on either or both frequencies where the limited coast station has been authorized under the provisions of § 81.365(b) of this chapter.

(d) The frequency 2003 kc/s is authorized for use by ship stations on the Great Lakes for communication with United States Coast Guard coast stations concerning port security when the vessel is not equipped to transmit on 2670 kc/s or a suitable frequency in the band 156 to 174 Mc/s. Such use is authorized on condition that harmful interference will not be caused to any ship-to-ship communications authorized in paragraph (a) of this section.

§ 83.359 Frequencies above 156 Mc/s available for assignment.

(a) The frequencies listed in the following table are available as indicated

therein. (These frequencies are not authorized for communication with stations on board aircraft.)

Channel designator	Frequency (Mc/s)		Points of communication	Authorized communications
	Ship	Coast		
6.....	156.3		Intership only.....	Safety.
7A.....	156.35	156.35	Intership and Ship to Coast.....	Business and operational.
8.....	156.4		Intership only.....	Do.
9.....	156.45	156.45	Intership and Ship to Coast.....	Do.
10.....	156.5	156.5	.....do.....	Do.
11.....	156.55	156.55	.....do.....	Do.
12.....	156.6	156.6	.....do.....	Port operations.
13.....	156.65	156.65	.....do.....	(1).
14.....	156.7	156.7	.....do.....	Port operations.
16.....	156.8	156.8	.....do.....	Safety and calling. <sup>2</sup>
18A.....	156.9	156.9	.....do.....	Business and operational.
19A.....	156.95	156.95	.....do.....	Do.
20.....	<sup>3</sup> 157.0	<sup>3</sup> 161.60	Ship to Coast.....	Port operations.
24.....	<sup>3</sup> 157.2	<sup>3</sup> 161.8	Ship to Public Coast.....	Public correspondence.
25.....	<sup>3</sup> 157.25	<sup>3</sup> 161.85	.....do.....	Do.
26.....	157.3	161.9	.....do.....	Do.
27.....	157.35	161.95	.....do.....	Do.
28.....	157.4	162.0	.....do.....	Do.

<sup>1</sup> Business and operational in the Great Lakes area only. In other areas, communication is authorized primarily with other ship stations for the exchange of navigational information (including radar information) concerning the passage of ships, or as an at-the-scene aid in any maritime emergency; secondarily with land stations used in connection with the passage of ships through locks, bridge areas, and Government controlled waterways and with land stations as necessary to exchange marine navigational information with shore radar stations.

<sup>2</sup> This frequency is authorized for call, reply, and safety purposes. It may also be used for messages preceded by the urgency and safety signals and, if necessary, for distress messages.

<sup>3</sup> These frequencies are not available in Puerto Rico or the Virgin Islands.

<sup>4</sup> Ship stations in the Great Lakes area authorized to use 156.4 Mc/s prior to Oct. 1, 1962, for communication with limited coast stations may continue to use the frequency until Jan. 1, 1963.

§ 83.361 Frequencies within the band 30 to 50 Mc/s for general communication.

(a) Carrier frequencies which are authorized for any communication necessary for the safe, expeditious or economical operation of ships (other than public correspondence) for use by ship stations and marine-utility stations on board ship employing either frequency modulation or amplitude modulation for telephony, for transmission and reception on the same radio-channel are designated in this section:

Carrier frequency:	Normal geographic area of use
35.06 Mc/s...	Gulf-Caribbean area north of 15° north latitude (includes Puerto Rico and Virgin Islands, does not include Florida east coast area).
35.10 Mc/s...	Pacific area within Region 2 and north of 15° north latitude.
35.14 Mc/s...	Atlantic area within Region 2 and north of 15° north latitude (includes Florida east coast area).
35.18 Mc/s...	Mid-continent area (includes Great Lakes).

Each of these assignable frequencies is available on a shared basis only and shall not be construed as available for the exclusive use of any one station licensee. All licensees having authority to transmit on such assigned frequencies shall cooperate in the use thereof in order to minimize interference and obtain the most effective use of the authorized facilities.

(b) Each application which requests assignment of a carrier frequency designated in paragraph (a) of this section shall designate normally the carrier frequency specified in that paragraph for use in the geographic area in which the station is to be operated. Normally, only that carrier frequency is assignable for use in that area. When any other of these carrier frequencies is requested for assignment in a specified area, the application therefor shall include a satisfactory showing that the carrier frequency designated in paragraph (a) of this section for use in the particular area will not meet the need of the proposed or existing service. When, in the opinion of the applicant, the location of the involved station is not, or will not be, clearly within one of the geographic areas designated in paragraph (a) of

this section, the applicant shall obtain the necessary information in this respect by corresponding directly with the Commission at Washington, D. C.

(c) Each of these carrier frequencies is assignable for communication (other than public correspondence) by means of telephony with limited coast stations, ship stations, and marine-utility stations on ship or shore, which for this purpose transmit on the same radio-channel. In addition, when required to serve a maritime purpose, each of these carrier frequencies is assignable in accordance with the geographic areas specified in paragraph (a) of this section for use by mobile stations on board aircraft at sea for communication by telephony with ship stations, limited coast stations, and marine-utility stations on board ship, when each of the involved stations transmits and receives on the same radio-channel; subject to this provision, ship stations and marine-utility stations are authorized to communicate additionally on such radio-channel(s) with mobile stations on board aircraft appropriately licensed for this purpose. Such stations on board aircraft shall be governed in the use of any of these frequency assignments by the same rules and regulations that apply to ship stations using the same frequency assignment.

**Note:** Effective April 1, 1958, no new radio systems will be authorized in the maritime mobile service on the frequencies listed in this section. An application requesting initial authority (or equivalent) to operate on one or more of these frequencies in behalf of a particular applicant will be construed as an application for a new radio system. All authorizations for the use of one or more of these frequencies will expire not later than March 31, 1963.

**§ 83.362 Frequencies below 3000 kc/s for safety, business, and operational purposes.**

(a) The frequencies 2738 kc/s, 2830 kc/s and 2214 kc/s may be used for safety, operational, or business communication with limited coast stations authorized to engage in such communication: *Provided*, That with respect to the frequency 2214 kc/s, specific authorization for such use must be obtained, in which event intership use of the frequency between such ship stations is also authorized.

(b) Use of 2738 kc/s, 2830 kc/s and 2214 kc/s as specified in paragraph (a) of this section will be subject to the same conditions under which they are

authorized to be used by limited coast stations under the provisions of § 81.365 (a) of this chapter.

(c) The frequencies 2738 kc/s and 2830 kc/s may be used for safety and related navigational communication with limited coast stations authorized to engage in such communication: *Provided*, That use of these frequencies will be subject to the same conditions under which they are authorized to be used by limited coast stations under the provisions of § 81.365 (b) of this chapter.

(d) (1) In addition to availability of the carrier frequencies 2738 kc/s and 2830 kc/s, primarily for intership communication as prescribed in § 83.358, either of these carrier frequencies may, in response to proper application therefor, be specifically authorized in private aircraft station licenses for communication (in areas where their use is authorized for ship stations using telephony as prescribed in § 83.358) by means of telephony (amplitude modulation) with a ship station or stations: *Provided*,

(i) The applicant makes a showing satisfactory to the Commission that such communication is necessary to serve an important business or operational need of each particular ship while such ship is engaged in commercial fishing activities in the open sea or on any bay, sound, strait, or comparable waters adjacent to the open sea; and

(ii) Harmful interference is not caused to ship-to-ship communications; and

(iii) The maximum plate input power used for such communication shall not exceed 50 watts; and

(iv) The aircraft-to-ship and ship-to-aircraft communication which takes place on the radio-channel of which either 2738 kc/s or 2830 kc/s is the authorized carrier frequency shall be limited exclusively to that which is necessary to serve an important business or operational need of the vessel on which the ship station is located while such vessel is engaged in commercial fishing activities in the open sea or on any bay, sound, strait, or comparable waters adjacent to the open sea; and

(v) Except as otherwise provided in this paragraph, all of the provisions of this part in respect to authorization and use of the carrier frequencies 2738 kc/s and 2830 kc/s for ship to ship communication shall apply to all aircraft stations when operating under the provisions of this paragraph.

(2) As an alternative to one of the specific carrier frequencies designated in subparagraph (1) of this paragraph, the carrier frequency 2638 kc/s may be authorized in accordance with all other provisions of this paragraph only in behalf of those private aircraft stations which were licensed prior to July 23, 1951, to transmit on this carrier frequency for communication by telephony with ship stations for the purpose expressed in this paragraph.

**NOTE:** Commission Order (FCC 62-724) adopted July 13, 1962, appearing at 27 F.R. 6833, July 19, 1962, waived regulations contained in § 83.362 to permit ship stations to communicate with the limited coast station of Michigan State Highway Department on 2003 kc/s.

### § 83.363 Use of U.S. Government frequencies for telephony.

(a) In addition to use of the frequency assignment designated for telephony in the license of a ship station, such station when communicating by telephony with a mobile or land station of the United States Government, may transmit on a government frequency assignment when authorized or directed to do so by the government station responsible or by the government department or agency for which use of such frequency assignment is authorized; on condition that the emission-bandwidth and frequency tolerance of the ship station shall be within the respective limits thereof required to be maintained by the government station. Under these circumstances, the ship station carrier frequency, the class of emission, and the permissible class of traffic shall be designated and controlled by the responsible government station, department, or agency.

(b) Frequencies assigned to government radio stations are assignable to non-Government ship radio stations for communication with other non-Government stations by telephony when such communication is necessary in connection with activities performed in coordination with or in behalf of the Federal Government and where the Commission determines, after consultation with the appropriate government agency or agencies, that such assignment is necessary.

### § 83.364 Identification of station.

(a) Ship and survival craft stations using radiotelephony shall identify all transmissions by announcement in the English language, or by telegraphy using

A2 emission, of the station's call sign: *Provided*, That on 156.65 Mc/s transmissions may be identified by the name of the ship in lieu of the station call sign. This identification shall be made:

(1) At the beginning and upon completion of each communication with any other station;

(2) At the beginning and upon conclusion of each transmission made for any other purpose; and

(3) At intervals not exceeding 15 minutes whenever transmission is sustained for a period exceeding 15 minutes.

(b) When an official call sign is not assigned by the Commission to a ship station using telephony, the complete name of the ship on which the station is located and the name of the licensee shall be transmitted by voice in the English language for the purpose of station identification.

(c) The provisions of paragraphs (a) and (b) of this section shall apply also to ship stations of portable nature when using telephony and operated on board ship pursuant to §§ 83.40 and 83.71.

### § 83.365 Procedure in testing.

(a) Ship stations must use every precaution to insure that, when conducting operational transmitter tests, the emissions of the station will not cause harmful interference. Radiation must be reduced to the lowest practicable value and if feasible shall be entirely suppressed. When radiation is necessary or unavoidable, the testing procedure described below shall be followed:

(1) The licensed radio operator or other person responsible for operation of the transmitting apparatus shall ascertain by careful listening that the test emissions will not be likely to interfere with transmissions in progress; if they are likely to interfere with the working of a coast or aeronautical station in the vicinity of the ship station, the consent of the former station(s) must be obtained before the test emissions occur;

(2) The official call sign of the testing station, followed by the word "test", shall be announced on the radio-channel being used for the test, as a warning that test emissions are about to be made on that frequency;

(3) If, as a result of the announcement prescribed in subparagraph (2) of this paragraph, any station transmits by voice the word "wait", testing shall be suspended. When, after an appropriate interval of time, such announcement is

repeated and no response is observed, and careful listening indicates that harmful interference should not be caused, the operator shall proceed as set forth in subparagraph (4) of this paragraph:

(4) The operator shall announce the word "testing" followed in the case of a voice transmission test by the count "1, 2, 3, 4, \* \* \* etc." or by test phrases or sentences not in conflict with normal operating signals; or followed, in the case of other emission, by appropriate test signals not in conflict with normal operating signals. The test signals in either case shall have a duration not exceeding ten seconds. At the conclusion of the test, there shall be voice announcement of the official call sign of the testing station, the name of the ship on which the station is located, and the general location of the ship at the time the test is being made. This test transmission shall not be repeated until a period of at least one minute has elapsed; on the frequency 2182 kc/s or 156.8 Mc/s in a region of heavy traffic, a period of at least five minutes shall elapse before the test transmission is repeated.

(b) When testing is conducted on any frequency assignment within the band 2170 kc/s to 2194 kc/s, within the band 156.75 Mc/s to 156.85 Mc/s, within the band 480 kc/s to 510 kc/s (lifeboat transmitters only), or within the band 8362 kc/s to 8366 kc/s (lifeboat transmitters only), no test transmissions shall occur which are likely to actuate any automatic alarm receiver within range. Lifeboat stations using telephony shall not be tested on the assigned frequency 500 kc/s during the 500 kc/s silence periods.

#### § 83.366 General radiotelephone operating procedure.

(a) *Calling coast stations.* (1) Use by ship stations of the frequency 2182 kc/s for calling coast stations, and for replying to calls from coast stations, is authorized; however, whenever practicable such calls and replies shall be made on the appropriate ship-shore working frequency.

(2) Use by ship stations and marine utility stations on board ship of the frequency 156.8 Mc/s for calling coast stations and marine utility stations on shore, and for replying to calls from such stations, is authorized; however, whenever practicable such calls and replies

shall 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, 2638, 2738, or 2830 kc/s, shall first establish communication with other ship stations by call and reply on 2182 kc/s: *Provided*, That calls may be initiated on an intership working frequency when it is known that the called vessel maintains a simultaneous watch on such working frequency and on 2182 kc/s.

(2) Except when other operating procedure is used to expedite safety communication, the frequency 156.8 Mc/s shall be used for call and reply by ship stations and marine utility stations on board ship before establishing communication on either of the intership working frequencies 156.3 or 156.4 Mc/s.

(c) *Change to working frequency.* After establishing communication with another station by call and reply on 2182 kc/s or 156.8 Mc/s, stations on board ship shall change to an authorized working frequency for the transmission of messages which, under the provisions of this subpart, cannot be transmitted on the respective calling frequencies.

(d) *Authorized use of 2003, 2638, 2738, and 2830 kc/s.* The intership working frequencies 2003, 2638, 2738, and 2830 kc/s shall be used for transmissions by ship stations in accordance with the provisions of §§ 83.176, 83.177, and 83.358.

(e) *Simplex operation only.* All transmission on 2003, 2638, 2738, and 2830 kc/s by two or more stations, engaged in any one exchange of signals or communications, shall take place on only one of these frequencies, i.e., the stations involved shall transmit and receive on the same frequency: *Provided*, That this requirement is waived in the event of emergency when by reason of interference or limitation of equipment single-frequency operation cannot be used.

(f) *Limitation on duration of calling.* Calling a particular station shall not continue for more than 30 seconds in each instance. If the called station is not heard to reply, that station shall not again be called until after an interval of 2 minutes. When a station called does not reply to a call sent three times at intervals of 2 minutes, the calling shall cease and shall 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 shall not apply.

(g) *Limitation on duration of working.* Any one exchange of communications between any two ship stations on 2003, 2638, 2738, or 2830 kc/s, or between a ship station and a limited coast station on 2738 or 2830 kc/s, shall not exceed 3 minutes in duration after the two stations have established contact by calling and answering. Subsequent to such exchange of communications, the same two stations shall not again use 2003, 2638, 2738, or 2830 kc/s for communication with each other until 10 minutes have elapsed: *Provided*, That this provision shall in no way limit or delay the transmission of communications concerning the safety of life or property.

(h) *Transmission limitation on 2182 kc/s and 156.8 Mc/s.* Any one exchange of signals by ship stations on 2182 kc/s or 156.8 Mc/s (including calls, replies thereto, and operating signals) shall not exceed 2 minutes: *Provided*, That this time limitation is not applicable to the transmission of distress, alarm, urgency, or safety signals, or to messages preceded by one of these signals.

(i) *Limitation on business and operational communication.* On frequencies above 30 Mc/s, the exchange of all business and operational communication shall be limited to the minimum practicable transmission time. In the conduct of ship-shore communication, other than distress, stations on board ship shall comply with instructions given by the limited coast station or marine utility station on shore with which they are communicating, in all matters relative to operating practices and procedures and to the suspension of transmission in order to minimize interference.

(j) *2182 kc/s silence period in Regions 1 and 3.* Transmission by ship or survival craft stations when in Regions 1 and 3 (except in the territorial waters of Japan and the Philippines) is prohibited on any frequency (including 2182 kc/s) within the band 2170–2194 kc/s during each 2182 kc/s silence period, i.e., for 3 minutes twice each hour beginning at x h. 00 and x h. 30, Greenwich mean time: *Provided*, That this provision is not applicable to the transmission of distress, alarm, urgency, or safety signals,

or to messages preceded by one of these signals.

#### § 83.367 Station documents.

(a) Ship radiotelephone stations subject to the radio provisions of the Safety Convention shall be provided with the following documents:

- (1) A valid station license;
- (2) The necessary operator license(s);
- (3) The station log required by this part for stations of this category;
- (4) The List of Coast Stations, or, alternatively, a list of coast stations with which communications are likely to be conducted, showing watchkeeping hours, frequencies, and charges;
- (5) The International Radio Regulations, Geneva, 1959;
- (6) Part 83 of this chapter.

(b) Ship radiotelephone stations not subject to the Safety Convention shall be provided with the documents listed in subparagraphs (1), (2), (3), and (6) of paragraph (a) of this section.

#### § 83.368 Radiotelephone station log.

(a) A station log shall be maintained during the hours of service of ship stations using radiotelephony, in which the entries required by this section shall be made. Pages of the log shall be numbered in sequence and each page shall include the name of the vessel and the radio call sign of the station. All entries which show transmitter operation shall be made and signed by the licensed operator (or other person in accordance with § 83.155). Watch entries, and signatures of each person keeping the required watch, shall be so related that they constitute a certification by each such person as to when he began and ended each period of his watch during the voyage. The date and time of each occurrence or incident required to be entered in the log shall be shown opposite the entry, and the time shall be counted from 0000 to 2400, beginning at midnight. Stations on board vessels engaged on international voyages, other than on the Great Lakes or inland waters, shall use Greenwich mean time (GMT); stations on board vessels navigated on the Great Lakes may use either GMT or Eastern standard time (e.s.t.); other stations may use GMT or local standard time. The appropriate symbol, GMT, e.s.t., c.s.t., p.s.t., etc., shall be entered at the head of the column in which time is entered.

(b) The log of ship radiotelephone stations subject to Title III, Part II of the Communications Act of 1934 or to the radio provisions of the Safety Convention shall include the following entries:

(1) All radiotelephone distress, alarm, urgency, and safety signals and communications transmitted or intercepted, the text in as complete form as possible of distress messages and distress communications, and any information connected with the radio service which may appear to be of importance to maritime safety, together with the time of such observation or occurrence, the frequencies used, and the position of the ship or other mobile unit in need of assistance if this can be determined;

(2) The times when the required watch is begun, interrupted, and ended. When the required watch is interrupted for any reason, except for the purpose of communications with other stations, the reason for such interruption shall be stated;

(3) The call signs of all stations called or communicated with, a notation of messages exchanged, and the frequency(s) used for such call or communication;

(4) A daily entry of the ship's position;

(5) All test transmissions, including the frequency(s) used;

(6) The times when storage batteries provided as a part of the required radiotelephone installation are placed on charge and taken off charge;

(7) Results of required equipment tests, including specific gravity of lead-acid storage batteries and voltage readings of other types of batteries provided as part of the compulsory installation;

(8) Results of inspections and tests of compulsorily fitted lifeboat radio equipment;

(9) A daily statement concerning the operating condition of the required radiotelephone equipment, as determined by either normal communication or test communication;

(10) Pertinent details of all installation, service, or maintenance work performed which may affect the proper operation of the station. The entry shall be made, signed, and dated by the responsible licensed operator who supervised or performed the work, and unless such operator is regularly employed on

a full-time basis at the station and his operator license is properly posted, such entry shall include his mail address and the class, serial number, and expiration date of his operator license.

(c) The log of ship stations subject to the Great Lakes Agreement shall include those entries specified by subparagraphs (1), (2), (3), (5), (6), (7), (9), and (10) of paragraph (b) of this section, and in addition shall include the name and radio license number of each operator actually on board and designated by the master to operate the radiotelephone installation.

(d) The log of ship stations subject to Title III, Part III of the Communications Act shall include the following entries:

(1) All radiotelephone distress and alarm signals and communications transmitted or intercepted, all urgency and safety signals and communications transmitted, the text in as complete form as possible of distress messages and distress communications, and any information connected with the radio service which may appear to be of importance to maritime safety, together with the time of such observation or occurrence, the frequencies used, and the position of the ship or other mobile unit in need of assistance if this can be determined;

(2) The entries specified by subparagraphs (2), (9), and (10) of paragraph (b) of this section.

(e) The log of ship radiotelephone stations not required by law to be provided shall include the following entries:

(1) The entries specified by subparagraph (1) of paragraph (d) of this section;

(2) The entries specified by subparagraphs (2) and (10) of paragraph (b) of this section.

(f) The log of marine utility stations on board ships shall include the entry specified by subparagraph (10) of paragraph (b) of this section.

#### § 83.369 Operation under interim ship station license.

(a) The use and operation of a ship radiotelephone station under the authority conferred by an interim ship station license shall be subject to and in accordance with all applicable rules of the Commission: *Provided*, That the class of station, the use of frequencies, the class of emission, and the transmitting equipment shall be limited at all times under

such license to the authorization hereinafter designated:

(1) Class of ship station:

(i) Public, if equipped to operate on one or more of the frequencies designated by this section for transmission to public coast stations;

(ii) Limited, if not equipped to operate as prescribed in subdivision (i) of this subparagraph.

(2) Authorized carrier frequencies:

(i) 2182 kc/s for calling and distress; 156.8 Mc/s for calling and safety communication;

(ii) For ship-to-ship communication:

2638 kc/s, 156.3 Mc/s and 156.4 Mc/s: for use in all areas;

2738 kc/s: For use in all areas except the Great Lakes and the Gulf of Mexico; provided that, unless the transmitter is type accepted under this part for licensing on this frequency or a certification in accordance with § 83.351 (d) has been submitted, use of the frequency is limited to test purposes as set forth in § 83.351 (d);

2830 kc/s: For use in the Gulf of Mexico; provided, that, unless the transmitter is type accepted under this part for licensing on this frequency or a certification in accordance with § 83.351 (d) has been submitted, use of the frequency is limited to test purposes as set forth in § 83.351 (d);

2003 kc/s: For use in the Great Lakes area, exclusively.

(iii) For communication between ships and public coast stations:

Frequencies below 30 Mc/s as set forth in §§ 83.354 and 83.355;

Frequencies above 156 Mc/s as set forth in §§ 83.359(a), 85.257, 85.258, and 85.265 of this chapter.

(iv) In addition in the Alaska area:

1622 kc/s: For communication between ship stations aboard vessels of less than 500 gross tons and for communication between public ship stations on board vessels of any size and public coast stations;

2134 kc/s: For communication between ship stations and coast stations of the Alaska Communication System open to public correspondence;

2382 kc/s: For communication between ship stations aboard vessels of 500 gross tons or more and for communication between public ship stations on board vessels of any size and public coast stations.

(3) Authorized classes of emission. A3 on frequencies herein designated below 30 Mc/s; F3 on frequencies herein designated above 156 Mc/s; and for brief operating signals A2 and F2 respectively.

(4) Equipment: The equipment shall be the same as the particular equipment

which is described in the related formal application simultaneously filed for regular ship station license or modification of license, and which is capable of being operated with class A3 or F3 emission (according to the frequency band to be used under the provisions of this section) in accordance with all applicable rules and regulations on one or more radio-channels of which the authorized carrier frequencies are designated by this section.

**Subpart P—Use of Radio-determination**

§ 83.401 Assignable frequencies for direction finding.

(a) The frequency 410 kc/s is the assigned frequency for direction finding.

(b) As an exception, on condition that signals of distress, urgency and safety, and calls and answers, are not interfered with, the calling channel of which 500 kc/s is the assigned frequency may be used additionally and with discretion, by ship stations for direction-finding; exclusively in Regions 1 and 3 outside areas of heavy radio traffic.

(c) In the event of distress, the following frequencies may be used for radio direction finding for purposes of search and rescue by any licensed ship or survival craft station:

410 kc/s    500 kc/s    2182 kc/s    8364 kc/s

§ 83.403 Radiodetermination by cable-repair ship.

Provided radio transmitting equipment attached to a cable-marker buoy has been adequately described in an application for ship radio station license for a cable-repair ship with which the buoy is associated, and provided further that such equipment is authorized in the related ship station license, that equipment may be operated (outside the territorial waters of a foreign country) on such radio channels within the band 285–325 kc/s (285–315 kc/s only in Region 1) as may be expressly authorized in each case by the Commission under authority of the ship station license, with A1 or A2 emission and a maximum plate input power of 30 watts: *Provided*, That interference shall not be caused by such operation to any maritime radionavigation service. The call signals that must be used for a transmitter operating under the provisions of this section shall be the regularly assigned call of the ship station with which the buoy is asso-

ciated, to be followed by the letters "BT", and the identifying number of the buoy. The buoy transmitter shall be continuously monitored by a licensed radiotelegraph operator on board the associated cable-repair ship. Should a frequency deviation in excess of the authorized frequency tolerance, or interference to the service of any other station, be reported or observed, the radiation of the transmitter shall be suspended until the excessive deviation is eliminated or until the transmitter can be operated without causing interference.

**§ 83.404 Assignable frequencies above 2400 Mc/s.**

(a) The following frequency bands, when designated in the station license, are authorized for use by ship radio-navigation stations (including ship radar stations):

2900 to 3100 Mc/s  
5460 to 5650 Mc/s  
9300 to 9500 Mc/s

The use of the band 5460 to 5650 Mc/s is limited to shipborne radar. Transmitters in ship radionavigation stations (including developmental stations) which are authorized for operation in the 3000 to 3246 Mc/s band as of April 16, 1958, and which operate on frequencies between 3100 and 3246 Mc/s may continue to be authorized for operation on the same vessel provided that any renewal of the authorization shall be subject to the condition that no protection shall be given from any interference caused by emission from United States Government stations operating in the 3100 to 3246 Mc/s band.

(b) The following frequency bands, when designated in the station license, are authorized for use by ship radiolocation stations:

(1) 2450 to 2500 Mc/s, on condition that harmful interference shall not be caused to the fixed and mobile services, and on the condition that no protection shall be given from interference caused by emission from industrial, scientific, or medical equipment;

(2)

2900 to 3100 Mc/s  
5460 to 5650 Mc/s  
9300 to 9500 Mc/s

The use of frequencies within these bands for radiolocation shall not cause harmful interference to the radionavigation service and to the Government radiolocation service. Each ship radio-

location station authorized to operate in the band 3000 to 3246 Mc/s as of April 16, 1958, and which operates on frequencies between 3100 and 3246 Mc/s may continue to operate in the band 3100 to 3246 Mc/s for the duration of the term of its authorization in effect as of that date. Renewals of such authorizations, however, shall be contingent upon the condition that each such station shall not cause harmful interference to United States Government services.

**§ 83.405 Special provisions applicable to ship-radar stations.**

(a) A ship radar station may be operated under an interim ship station license. The use and operation of a radar station on board ship under the authority conferred by an interim ship station license shall be subject to and in accordance with all applicable rules of the Commission.

(b) Each ship-radar station installation the manufacture of which was completed on or after 1947 shall be furnished with a durable name plate with the manufacturer's name, transmitter model number; and month and year of completion of manufacture permanently inscribed thereon. Such name plate shall be affixed to the indicator housing at the principal radar operating position or to some other component of the radar installation which is readily accessible for inspection.

(c) Each ship-radar station license issued shall be subject to the condition that the station licensee, in relation to the proper operation of the station in accordance with the radio law, and rules and regulations of the Commission, will be represented on board the radar-equipped vessel by the person who at any given time occupies the position of master.

(d) The following provisions shall apply to ship-radar stations:

(1) The station licensee of each ship-radar station shall provide and require to be kept at the station a permanent installation and maintenance record. Entries in this record shall be made by or under the personal direction of the responsible installation, service, or maintenance operator concerned in each particular instance, but the station licensee shall have joint responsibility with the responsible operator concerned for the faithful and accurate making of such entries as are required by this paragraph.

(2) Each entry in this record shall be personally signed by the responsible operator concerned.

(3) The following entries shall be made in this record:

(i) The date and place of initial installation.

(ii) Any necessary steps taken to remedy any interference found to exist at the time of such installation.

(iii) The nature of any complaint (including interference to radio communication) arising subsequent to initial installation, and the date thereof.

(iv) The reason for the trouble leading to the complaint, including the name of any component or component part which failed or was misadjusted.

(v) Remedial measures taken, and date thereof.

(vi) The name, license number, and date of the ship-radar operator endorsement on the first or second class radio operator license of the responsible operator performing or immediately supervising the installation, servicing, or maintenance.

(e) Until the Commission shall otherwise provide, the ship-radar station licensee, by such arrangement as may be necessary with the ship master, operating agency, or ship owner, shall, upon specific request made by the Commission, be responsible for the submission of such reports as are requested by the Commission to show the value and practical performance of the ship-radar station. For assistance in preparing these reports, daily records, when the radar installation is tested or used, should, when practicable, be kept showing at least the following:

(1) Approximate number of hours of use while the ship is in operation;

(2) Number of service failures, and duration, nature, and cause of each failure if known;

(3) Performance under local weather conditions which are unfavorable for marine navigation; and

(4) Unusual incidents, including, among others, cases in which radar may have aided or hindered safe operation of the ship.

(f) In addition to the installation and maintenance record required by paragraphs (d) and (e) of this section, the following documents shall be available for reference on board each radar-equipped vessel whose ship-radar station is licensed by the Commission:

(1) Part 83 of this chapter.

(2) At least one set of instructions from the respective manufacturer relative to the use and operation of the particular type of ship-radar installation.

(g) No provisions of this part shall require any ship-radar station to transmit any signal(s) intended solely for the purpose of identifying that station.

### Subpart Q—Developmental Stations

#### § 83.431 Supplemental eligibility.

An authorization for developmental operation of a station on board ship in any of the services under this part will be issued only to those persons who are eligible to operate such stations on a regular basis.

#### § 83.432 Showing and statement required.

(a) Except as provided in paragraph (c) of this section, each application for authorization for a developmental station on board ship shall be accompanied by a showing that:

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

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

(3) The program has reasonable promise of substantial contribution to the expansion or extension of the use of radio for a maritime purpose, or is in a field of maritime operation not already investigated;

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

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

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

(b) Every application for authority to engage in developmental operation shall be accompanied by a statement signed by the applicant in which it is agreed that any authorization issued pursuant thereto will be accepted with the express understanding of the applicant 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.

(c) The provisions of paragraph (a) of this section do not apply when an

application is made for a developmental station solely for the reason that the frequency requested is restricted to such developmental use.

#### § 83.433 Assignable frequencies.

(a) Stations engaged in developmental operation may be authorized to use a frequency or frequencies available for the service and class of station which they propose to operate. The number of frequencies assignable to a particular station shall depend upon the specific requirements of the developmental program and the number of frequencies available for such use in the particular area where the station is to be operated.

(b) The following frequency bands, when designated in the station license, are authorized for use by developmental ship stations subject to the applicable provisions of this part:

6425 to 6575 Mc/s  
11700 to 12200 Mc/s  
26000 to 30000 Mc/s<sup>1</sup>  
16000 to 18000 Mc/s<sup>1</sup>  
2450 to 2500 Mc/s<sup>1</sup>

<sup>1</sup> On the condition that no protection shall be given from interference caused by emissions from industrial, scientific, or medical equipment. The class of emission, the frequency tolerance, the emission bandwidth, and the maximum transmitter power for use on frequencies within these bands above 2400 Mc/s shall be designated in each station authorization.

(c) The frequency bands 5350–5460 Mc/s and 9000–9200 Mc/s, when designated in the station license, are authorized for use by developmental ship radiolocation stations: *Provided*, That use of frequencies within these bands shall not cause harmful interference to the aeronautical radionavigation service or the Government radiolocation service.

#### § 83.434 Use of developmental stations.

(a) Developmental stations on board ship shall be constructed and used in such manner as to conform with all applicable technical and operating requirements contained in this part, unless deviation therefrom is specifically provided in the station authorization, in paragraph (d) of this section, or in other sections of this subpart.

**NOTE:** Such requirements are those applicable to the corresponding established class of station including provisions relating to operator requirements, station records, station documents, and assignments of call signs.

(b) Communication with any station of a country other than the United States

is prohibited unless specifically authorized by the terms of the station authorization, by paragraph (d) of this section, or by other sections of this subpart.

(c) The operation of a developmental station is subject to the condition that harmful interference is not caused to the operation of stations regularly licensed in an established service under any part of the Commission's rules, nor to the service of any United States Government station or any foreign station which, in the discretion of the Commission, may have priority on the frequency or frequencies used for the service to which interference is caused.

#### § 83.435 Developmental program.

(a) The developmental program as described by the applicant in the application for authorization shall be substantially followed unless the Commission shall otherwise direct.

(b) 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 in each case as deemed necessary in the public interest, convenience or necessity.

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

#### § 83.436 Report of operation required.

(a) A report on the results of the developmental program shall be filed with and made a part of each application for renewal authorization, or in cases where no renewal of authorization is requested, such report shall be filed within 60 days of the expiration of such authorization. Matters which the applicant does not wish to disclose publicly may be so labelled; they will be used solely for the Commission's information and will not be publicly disclosed without permission of the applicant. The report shall include comprehensive and detailed information on the following:

- (1) The final objective of the developmental operation;
- (2) Pertinent results of operation to date;
- (3) Analysis of the results obtained;
- (4) Copies of any published reports;
- (5) Need for continuation of the program if such need exists;

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

#### § 83.437 Identification of station.

(a) The radiotelegraph and radio-telephone emissions of a developmental station on board ship shall be clearly identified in the manner provided in §§ 83.326 and 83.364, respectively.

(b) The facsimile emissions of a developmental station on board ship shall be identified either by telegraphy or by telephony as provided in §§ 83.326 and 83.364, respectively.

(c) All other classes of emission of a developmental station on board ship shall be identified as prescribed in the respective station authorization.

### Subpart R—Radiotelegraph Stations Provided for Compliance With Part II of Title III of the Communications Act or the Radio Provisions of the Safety Convention

#### § 83.441 Inspection of station.

(a) Every ship of the United States subject to part II of title III of the Communications Act and/or the radio provisions of the Safety Convention shall have the equipment and apparatus prescribed therein inspected at least once every twelve months. The issuance of an appropriate certificate (see section 361 of the Communications Act) in behalf of any vessel of the United States concerning the radio particulars provided for in the Safety Convention is subject to a finding by the Commission that such vessel complies with the applicable radio provisions of that Convention. The issuance date of Safety Radiotelegraphy Certificates and Safety Radiotelephony Certificates issued by the Commission shall be the date the station is found to be in compliance or not later than one business day following such in-compliance date.

(b) Every ship of the United States holding a Safety Convention certificate is subject when in a port of a foreign country which is a party to the Safety Convention to control by officers duly authorized by the government of that country, insofar as that control is directed towards verifying that there is on board a valid Safety Convention certificate and, if necessary, that the condition of the ship or of its equipment corre-

sponds substantially with the particulars of that certificate.

(c) The privileges of the Safety Convention may not be claimed in favor of any ship unless it holds appropriate valid Convention certificates. In the event of control giving rise to intervention of any kind in a foreign port, the officer carrying out the control is required to notify the United States Consul in writing forthwith of all the circumstances in which intervention was deemed to be necessary.

(d) Certificates issued under and in accordance with the Safety Convention shall be posted in a prominent and accessible place in the ship.

#### § 83.442 Radiotelegraph station.

The radiotelegraph station required to be provided on a ship by reason of the provisions of part II of title III of the Communications Act, or on a United States ship by reason of the Safety Convention, shall comply in an efficient manner with the provisions of this subpart in addition to all other applicable requirements of this part. The radiotelegraph station comprises a main installation and a reserve installation, electrically separate and electrically independent of each other, and such other equipment as may be necessary for the proper use and operation of these installations: *Provided*, That, in the case of an existing installation on a cargo ship and a new installation on a cargo ship of 500 gross tons and upwards but less than 1,600 gross tons, if the main installation complies with all requirements of a reserve installation, the reserve installation may be omitted, except that a separate reserve receiver must, in all cases, be provided.

#### § 83.443 Main and reserve installations.

(a) The main installation includes a main transmitter, a main receiver, a main power supply, and a main antenna system.

(b) The reserve installation includes a reserve transmitter, a reserve receiver, a reserve power supply, emergency electric lights, and a reserve antenna system: *Provided*, That, a cargo ship the keel of which was laid prior to June 1, 1954 may either be equipped with a reserve antenna or provided with a spare antenna consisting of a single-wire transmitting antenna (including suitable insulators) completely assembled for immediate installation.

**§ 83.444 Requirements of main installation.**

All main radiotelegraph installations shall comply with the following conditions, in addition to all other requirements:

(a) The main antenna shall be as efficient as is practicable and shall be installed and protected so as to insure proper operation of the station. If the main antenna is suspended between masts or other supports liable to whipping, an approved device (safety link) which, under heavy stress, will operate to greatly reduce such stress without breakage of the antenna, the halyards, or any other antenna-supporting elements, shall be installed.

(b) The main transmitter shall be capable of meeting the requirements of § 83.552.

(c) The main receiver shall be capable of efficiently receiving A1 and A2 emission on all frequencies within the bands 100–200 kc/s and 405–535 kc/s, and B emission within the band 485–515 kc/s. It shall be fitted with headphones capable of effective operation. Where a loud-speaker is additionally provided for use in accordance with the provisions of § 83.204, such device shall also be capable of effective operation. The main receiver shall have sufficient sensitivity to effectively operate headphones or a loud-speaker when the receiver input is as low as 50 microvolts.

(d) There shall be readily available for use under normal load conditions, at all times when required including times of inspection of the ship radio station by a Commission representative, a main power supply for the main installation sufficient to simultaneously (1) energize the main transmitter at its required antenna power, and the main receiver, (2) charge at any required rate all storage batteries forming part of the radiotelegraph station, and (3) charge at any required rate all other storage batteries which are connected to the main power supply for this purpose. Under this load condition the potential of the main power supply at the radio room terminals shall not deviate from its rated potential 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, storage batteries forming part of the main installation shall be brought up to the normal fully charged condition daily.

(e) For the purpose of determining the potential(s) of the main power supply at its radio room terminals, a suitable voltmeter or voltmeters of standard accuracy and reliability shall be permanently installed in the radiotelegraph operating room.

(f) The main installation shall be provided with a device permitting change-over from transmission to reception and vice versa without manual switching.

(g) The main installation shall be capable of being quickly connected with and tuned to the main antenna, and the reserve antenna if one is installed.

**§ 83.446 Requirements of reserve installation.**

(a) All reserve radiotelegraph installations shall comply with the following conditions, in addition to all other requirements:

(1) The reserve installation shall be capable of being placed in operation within a maximum time of 1 minute after the need arises for its use.

(2) The reserve antenna shall be as efficient as is practicable and shall be adequately installed and protected so as to insure proper operation in time of an emergency.

(3) The reserve transmitter shall be capable of meeting the requirements of § 83.533.

(4) The reserve receiver shall be capable of efficiently receiving A1 and A2 emission on all frequencies within the band 405–535 kc/s, and B emission within the band 485–515 kc/s. It shall be fitted with headphones capable of effective operation. Where a loud-speaker is additionally provided for use in accordance with the provisions of § 8.204, such device also shall be capable of effective operation. The reserve receiver shall have sufficient sensitivity to effectively operate headphones or a loud-speaker when the receiver input is as low as 100 microvolts.

(5) The reserve installation shall be capable of being quickly connected with and tuned to the main antenna, and the reserve antenna if one is installed.

(6) Emergency electric lights shall be provided of not less than 10 watts per unit, capable of being energized solely by the reserve power supply and connected thereto through individual fuses. The emergency electric lights shall be arranged so as to provide satisfactory illumination of the operating controls of the main and reserve radiotelegraph instal-

lations and of the radio station clock. The emergency lighting electrical circuits shall be arranged so as to avoid the application of excessive voltage to the emergency lights during the charging of any batteries forming part of the reserve installation. The provisions of this subparagraph shall 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 subparagraph shall apply to it.

(7) The emergency electric lights shall 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 8 feet: *Provided*, That this requirement shall be applicable to stations when the main or reserve radiotelegraph transmitter is replaced or initially installed in such station on and after the effective date of the Safety Convention, 1960.

(8) There shall be readily available for use under normal load conditions, at all times when required including times of inspection of the ship radio station by a Commission representative, a reserve power supply for the reserve installation which shall be independent of the propelling power of the ship and of any other electrical system and shall be sufficient to 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 of energizing the automatic radiotelegraph alarm signal keyer continuously for a period of 1 hour.

(9) The reserve power supply shall be used to energize the reserve installation and the automatic radiotelegraph alarm signal keyer, and may be used to energize the audible warning apparatus included as a component of an approved radiotelegraph auto alarm.

(10) The reserve power supply shall be located as near to the reserve transmitter and reserve receiver as is practicable: *Provided*, That the location of such power supply complies with all applicable rules and regulations of the United States Coast Guard. The switchboard of the reserve power supply shall, wherever possible, be situated in the radiotelegraph operating room; if it is

not, it shall be capable of being illuminated.

(11) All reserve power supply circuits shall be appropriately protected from overloads or short circuits which could damage any component thereof.

(12) Means shall be provided for adequately charging any storage batteries forming part of the reserve installation, and such batteries shall be brought to their normal fully charged condition daily while at sea. There shall be provided a device which, during charging of the batteries, will give a continuous indication of the rate and polarity of the charging current.

(13) The cooling system of each internal combustion engine used as a part of the reserve power supply shall be adequately protected or treated to prevent freezing or overheating consistent with the season and route to be traveled by the particular vessel involved.

(b) (1) The ship owner, operating company, or station licensee, if directed by the Commission or its authorized representative shall prove by demonstration prescribed in subparagraphs (2), (3), (4), and (5) of this paragraph or by such other means as may be deemed necessary, that the reserve installation satisfies the 6-hour operating requirement of law.

(2) When the reserve power supply, on board a vessel required by law to be equipped with a radiotelegraph station, consists of or includes a storage battery, proof of the ability of such battery to operate continuously and effectively over the 6-hour period of time is authorized to be established by a discharge test over a prescribed period of time, when supplying power at the voltage required for normal and effective operation to an electrical load as prescribed by subparagraph (4) of this paragraph.

(3) When the reserve power supply on board a vessel required by law to be equipped with a radiotelegraph station, consists of or includes an engine-driven generator, proof of the adequacy of the engine fuel supply to operate the unit continuously and effectively over the 6-hour period of time may be established by using as a basis the fuel consumption during a continuous period of 1 hour when supplying power, at the voltage required for normal and effective operation, to an electrical load as prescribed by subparagraph (4) of this paragraph.

(4) For the purpose of determining the electrical load to be supplied by the reserve power supply, the following formula shall be used:

(i) One-half of the reserve transmitter current consumption with the key closed (mark); plus

(ii) One-half of the reserve transmitter current consumption with the key open (space); plus

(iii) One-sixth of the current consumption of the automatic radiotelegraph alarm signal keyer when this device is properly energized; plus

(iv) Current consumption of the reserve receiver; plus

(v) Current consumption of emergency lights.

(5) At the conclusion of the tests specified in subparagraphs (2) and (3) of this paragraph, no part of the reserve power supply shall have an excessive temperature rise, nor shall the specific gravity or voltage of the storage battery be below the 90 percent discharge point as determined from information (such as voltage curves or specific gravity tables) supplied by the manufacturer for the type of battery involved.

#### § 83.447 Routing of power supply wiring.

The conductors connecting the main power supply to the main installation, and the conductors connecting the reserve power supply to the reserve installation, shall be so routed as to ensure adequate protection from mechanical injury, shall be protected from overload, and shall be kept clear of electrical grounds.

#### § 83.448 Use of reserve installation.

The reserve transmitter, and the reserve power supply for the reserve transmitter, are primarily authorized to be used only for safety and test communication: *Provided*, That 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 storage battery, may be used at any time to maintain a watch for safety purposes if such use will not reduce the ability of such reserve power supply to energize the associated component or components of the reserve installation for at least 6 consecutive hours.

#### § 83.449 Tests of reserve installation and automatic radiotelegraph alarm signal keyer.

(a) The condition of the reserve installation and of the automatic radiotelegraph alarm signal keyer shall 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: *Provided*, That in the case where the vessel is in two or more ports within 1 day, the required tests need be made only once during such day: *Provided further*, That in the case where the vessel is in a port for less than 1 day, the required tests for that day may be made either prior to the vessel's arrival in that port or prior to the vessel's departure from that port. When the ship is in a foreign port, transmitter tests are subject to such limitations as may be imposed by the Administration having jurisdiction. The following tests shall 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 of a pilot cell and such other cells as may be necessary to determine the state of charge;

(iii) In the case of other types of batteries, take voltage readings under normal battery load of a pilot cell and such other cells as may be necessary to determine the state of charge;

(iv) When an engine-driven generator is used, check the quantity of fuel in the engine fuel tank;

(2) Test the emergency lighting circuits and emergency electric lights by actual operation;

(3) Determine the proper functioning of the reserve receiver, while energized by the reserve power supply, by actual operation and comparison of received signals with similar signals received by means of the main receiver;

(4) Test the reserve transmitter, while energized by the reserve power supply, by actual operation when connected to the main antenna and to the reserve antenna, if one is installed, noting antenna currents;

(5) Test the automatic radiotelegraph alarm signal keyer for correct timing

adjustment of the keying mechanism, taking precaution to ensure that any radiotelegraph transmitter to which this device is connected is not energized, in order to preclude actual transmission of alarm signals.

(b) In the case of vessels loading or discharging inflammable or unstable and dangerous cargo, or while berthed at oil terminals or in other comparable areas, it is recognized that predeparture transmitter tests may not safely be made. Accordingly, in all such cases the provisions of paragraph (a) (4) of this section, in connection with predeparture tests, are waived: *Provided*, That suitable explanation is entered in the radio station log.

**§ 83.451 Automatic radiotelegraph alarm signal keyer.**

The radiotelegraph station required to be provided on a ship of the United States by reason of the provisions of part II of title III of the Communications Act shall include one or more devices, of a type approved by the Commission in accordance with § 83.555, capable of automatically operating the normal keying circuits of a required radiotelegraph transmitter as specified by § 83.452 so as to transmit the international radiotelegraph alarm signal.

**§ 83.452 Installation of automatic radiotelegraph alarm signal keyer.**

(a) The automatic radiotelegraph alarm signal keyer required by § 83.451 shall be installed in a readily accessible place, in the radiotelegraph operating room. Means shall be provided in the radiotelegraph operating room to permit instant use of this device to key, non-simultaneously, 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. When, pursuant to § 83.442, one transmitter is employed as both a main and reserve transmitter, the automatic radiotelegraph alarm signal keyer shall only be required to be capable of keying this transmitter. Only one control shall be provided for each automatic radiotelegraph alarm signal keyer; this control shall be located in the radiotelegraph operating room.

(b) The required automatic radiotelegraph alarm signal keyer shall be capable of operating efficiently for a continuous period of at least 1 hour when energized solely by the reserve power supply.

**§ 83.453 Radiotelegraph auto alarm.**

(a) A radiotelegraph auto alarm which is installed and used on board a cargo ship of the United States pursuant to the provisions of § 83.205 comprises a complete receiving, selecting, and warning device of a type approved 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.

(b) The following radiotelegraph auto alarms are acceptable for use pursuant to § 83.205:

(1) A radiotelegraph auto alarm that was type approved by the Commission prior to January 1, 1954 and installed prior to the effective date of the Safety Convention, 1960, is acceptable for a period of 4 years from the latter date. All radiotelegraph auto alarm type approvals dated prior to January 1, 1954 are cancelled as of the date which is 4 years after the effective date of the Safety Convention, 1960.

(2) A radiotelegraph auto alarm that was type approved by the Commission subsequent to January 1, 1954, pursuant to § 83.554.

**§ 83.454 Installation of radiotelegraph auto alarm.**

(a) A vessel shall be considered as fitted with a radiotelegraph auto alarm pursuant to § 83.453 when the installation on board such vessel complies with the conditions prescribed in the following paragraphs of this section.

(b) The radiotelegraph auto alarm shall be located in the radiotelegraph operating room and shall be installed and protected so as to insure proper operation. Means shall be provided in the radiotelegraph operating room for placing the entire radiotelegraph auto alarm system in or out of operation. A changeover switch shall be provided to: (1) Disconnect the main antenna from all other equipment and connect it to the radiotelegraph auto alarm receiver and place the system in effective operating condition; and, conversely, (2) de-energize the system and reconnect the main antenna to other equipment. A suitable voltmeter shall be provided for the purpose of determining that the supply voltages are within the limits required for proper operation of the system.

(c) Approved apparatus shall be provided for giving an audible warning in the radiotelegraph operating room, in the radio officer's cabin, and on the navigating bridge. This apparatus shall operate continuously after the radiotelegraph auto alarm has been actuated by a radiotelegraph alarm signal or by failure of the system, until manually stopped. Only one switch for stopping the audible warning apparatus from functioning is authorized, and this shall be located in the radiotelegraph operating room and shall be capable of manual operation only.

(d) Failure of the radiotelegraph auto alarm (if of a type approved prior to July 23, 1951) to function normally because of prolonged atmospheric (static) or other prolonged interference, or both, shall operate a visual indicator on the bridge. The type and method of installation of such visual indicator shall comply with the requirements of the United States Coast Guard.

(e) When a radiotelegraph auto alarm is dependent for effective operation upon a power supply having a voltage within definite upper and lower limits, it shall be fitted with an auxiliary device which: (1) will energize the audible warning apparatus if and when this power supply fails or its voltage exceeds the limits specified by the Commission for the particular type of radiotelegraph auto alarm involved; or (2) will automatically connect the radiotelegraph auto alarm to an auxiliary power supply, the voltage of which is within the specified limits.

#### § 83.456 Radiotelegraph auto alarm instructions.

There shall be furnished at least two sets of written instructions for the guidance of the radio officer and ship's officers relative to the radiotelegraph auto alarm, which shall include:

(a) A general technical description of the radiotelegraph auto alarm, including a circuit diagram of its receiver, a wiring diagram of its complete installation on shipboard, and a general explanation of its principles of operation;

(b) A list of faults which may be indicated by the sounding of the audible warning apparatus;

(c) An explanation of how to correct faults, remove and replace defective parts, and perform limited repairs at sea;

(d) An explanation of how to test the radiotelegraph auto alarm and adjust the sensitivity control to the "optimum" setting, and of the effect of various sensitivity control settings upon its operation, which shall be summarized upon a card and permanently attached to the front of the radiotelegraph auto alarm in a conspicuous position;

(e) A description of procedure to be followed with respect to adjustments to be made by the radio officer when the audible warning apparatus sounds, and also in making log entries.

#### § 83.457 Tests of radiotelegraph auto alarm.

(a) The radio officer shall, at least once every 24 hours while the ship is in the open sea outside of a harbor or port:

(1) Test the efficiency of the radiotelegraph auto alarm by using the testing device to determine whether the apparatus will respond to not less than 4 nor more than 12 consecutive dashes having an approximate duration of 4 seconds and approximate spacing between dashes of 1 second, the timing to be made by reference to the seconds hand of the radiotelegraph station clock;

(2) Determine the proper functioning of the radiotelegraph auto alarm receiver while connected to its normal antenna, by actual operation and comparison of received signals with similar signals received on 500 kc/s by means of the main receiver.

(b) If the radiotelegraph auto alarm is not in proper operating condition, the radio officer shall 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 entry of the results of such tests, shall be inserted daily in the radiotelegraph station log.

#### § 83.458 Direction finder.

Each ship of 1,600 gross tons or over which is subject to the requirement set forth in subparagraph (a) (2) of section 351 of the Communications Act, or which is subject to Regulation 12 of Chapter V of the Safety Convention, shall be equipped with efficient radio direction finding apparatus properly adjusted in operating condition and approved by the Commission.

### § 83.459 Requirements for direction finder.

(a) To be approved by the Commission, the radio direction finding apparatus shall:

(1) Be capable of efficiently receiving signals, A1, A2, and B emission, with the minimum of receiver noise, on each frequency within the band 285–515 kc/s assigned by the International Radio Regulations for the purposes of distress and direction finding and for maritime radio beacons, and be accurately calibrated for the purpose of taking bearings on such signals from which the true bearing and direction may be determined; and

(2) Possess a sensitivity, in the absence of interference, sufficient to permit the taking of accurate bearings on a signal having a field strength as low as 50 microvolts per meter.

(b) The calibration of the direction finder shall 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 appreciably adversely affect the accuracy of the direction finder. In addition, the calibration particulars shall be verified by check bearings at yearly intervals, or as near to yearly intervals as possible. A record of the calibrations, and of the check bearings made of their accuracy, shall be kept on board the ship for a period of not less than 1 year from the date of the related action.

### § 83.461 Installation of direction finder.

(a) The direction finder shall be so located that as little interference as possible from mechanical or other noise will be caused to the efficient determination of bearings.

(b) The direction finder antenna system shall be erected in such a manner that the efficient determination of bearings will be hindered as little as possible by the close proximity of other antennas, cranes, wire halyards, or large metal objects.

### § 83.462 Contingent acceptance with respect to direction finder calibration.

(a) Under conditions where it is impracticable for the Commission to determine the accuracy of calibration or where it is impracticable to make the required calibration prior to departure

of a vessel from a harbor or port for a voyage in the open sea, the direction finder may be tentatively approved on condition that:

(1) Prior to departure of the vessel from the particular harbor or port, the master certifies in writing to the Commission's inspecting engineer that, before the vessel is navigated on that voyage in the open sea beyond a radio beacon located in close proximity to that port, the direction finder will be properly calibrated by a competent technician; and

(2) During a subsequent inspection of the direction finder, the master shall make available to the Commission's inspecting engineer the appropriate written records resulting from calibration of the direction finder pursuant to said certification. If the information contained in these written records is satisfactory to the Commission's inspecting engineer, approval of the direction finder will be continued.

(b) In the absence of acceptable evidence of calibration at the time of the subsequent inspection mentioned in subparagraph (2) of paragraph (a) of this section, the Commission may withdraw approval of the direction finder until such evidence is available.

### § 83.463 Check bearings by authorized ship personnel.

The requirement for verification of calibration particulars by check bearings at yearly intervals, as set forth in paragraph (b) of § 83.459, may be complied with when performed by authorized ship personnel if conducted and recorded as follows:

(a) The required verification by check bearings shall be made during the 90-day period of active service of the ship immediately preceding the date of the annual detailed inspection of the radiotelegraph station;

(b) The verification shall consist of a comparison of simultaneous visual and radio direction finder bearings. At least one comparison bearing shall be taken in each quadrant, within plus or minus 10 degrees from the following bearings relative to the ship's heading: 45 degrees; 135 degrees; 225 degrees; 315 degrees;

(c) The verification shall be recorded in such a manner as to show 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. If the master is satisfied as to the adequacy of the verification for the purpose of determining the accuracy of the direction finder's calibration, and the direction finder is capable of taking bearings on radio signals from which the true bearing and direction may be determined, he shall so certify in writing, and make the records and such certification available to the Commission's inspecting engineer during the subsequent annual detailed inspection. If the master is not satisfied as to the adequacy of the check bearings or if such check bearings indicate a need for recalibration, a recalibration shall be obtained prior to the date of the annual detailed inspection of the radiotelegraph station.

#### § 83.464 Auxiliary receiving antenna.

An effective auxiliary receiving antenna or other approved arrangement shall be provided whenever necessary to avoid unauthorized interruption or reduced efficiency of the required watch by reason of unavailability of the normal receiving antenna for use during the period of time when a radio direction finder on board the vessel is being operated.

#### § 83.466 Interior communication systems.

(a) An efficient interior communication system shall 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 efficient interior communication system shall 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. When the operating position of the reserve radio installation is not located in the radiotelegraph operating room normally used for operating the main radio installation, an efficient interior communication system shall be separately provided between the bridge and each of these radio operating positions.

(b) If a vessel is provided with more than one location from which it is normally controlled and steered, the interior communication system between the radiotelegraph operating room and the bridge shall include in the system a point

of communication to each such location. The existence at a location of all of the following factors will be considered to be evidence that a point of communication should there be established: (1) Provision of a steering wheel; (2) provision of a compass; (3) provision of an engine order telegraph; (4) provision of apparatus to control the whistle; and (5) enclosure of the location to form a wheelhouse.

(c) The requirement of paragraph (b) of this section shall 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 occasionally for brief periods while navigating the ship in close quarters on inland waters.

#### § 83.467 Requirements for interior communication systems.

The interior communication systems required by § 8.466 shall be capable of providing efficient two-way calling and voice communication, shall be independent of any other communication system in the ship, and shall be of a type of system approved by the United States Coast Guard. Further, the location and termination of individual systems shall be subject to approval by the Commission.

#### § 83.468 Radiotelegraph station clock.

A reliable clock equipped with a sweep seconds hand and having a dial not less than 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, shall be provided. It shall be securely mounted in the radiotelegraph operating room in such a position that the entire dial can be easily and accurately observed by the radio officer from the normal radiotelegraph operating position, from the operating position at which he would ordinarily transmit the international radiotelegraph alarm signal by hand, and from the position used for testing the radiotelegraph auto alarm (if installed) for response to signals from the testing device. If a separate emergency radiotelegraph operating room is provided, the requirements of this section shall apply to it also.

#### § 83.469 Survival craft nonportable radiotelegraph installation.

(a) A survival craft nonportable radiotelegraph installation required by law to be provided in a motor lifeboat shall

include the following components as a minimum:

(1) An antenna for transmitting and receiving together with such antenna accessories as are necessary;

(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) The necessary material or device for a ground connection to the water when the lifeboat is afloat.

(b) Components of a survival craft nonportable radiotelegraph installation specified in subparagraphs (2) and (3) of paragraph (a) of this section shall be type approved by the Commission as capable of meeting the provisions of §§ 83.556 and 83.558.

(c) The radiotelegraph equipment shall be installed in a cabin large enough to accommodate both the equipment and the person using it, and arrangements shall be such that the efficient operation of the radiotelegraph installation shall not be interfered with by the survival craft engine while it is running, whether or not a battery is on charge.

(d) The antenna shall 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 20 feet, and shall be so designed that it can be quickly erected and utilized by a person in the lifeboat while afloat.

(e) The ground system shall comply with the following requirements:

(1) The radio installation when installed in a metal hull lifeboat shall be effectively grounded to the hull of the lifeboat. The ground connection shall 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 shall be effectively grounded to a bare plate and/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 shall be capable of develop-

ing an antenna current such that the product of the maximum height of the antenna above the mean surface of the water, expressed in feet, and the r.m.s. antenna current on the frequency 500 kc/s, expressed in amperes, is not less than 32.

#### § 83.471 Power supply for survival craft nonportable radiotelegraph installation.

(a) The power supply for the survival craft nonportable radiotelegraph installation shall consist of a storage battery capable at all times of operating the entire survival craft radiotelegraph installation for a period of at least 6 hours continuously under normal working conditions.

(b) The storage battery may be used to operate equipment other than the radiotelegraph installation (except that it shall 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 individual circuits connected to the battery shall be independently and properly fused.

(c) The storage battery shall be kept adequately charged at all times while at sea. The charging of the battery shall not require its removal from the survival craft in which it is installed. The necessary charging equipment shall be arranged so as not to interfere with the launching of the survival craft, and for this purpose shall be easily and quickly removable. The charging circuit for the storage battery shall be routed through the radiotelegraph operating room, and shall include a device located in the radiotelegraph operating room which will give continuous indication of the polarity and the rate of charge.

(d) Installations shall provide for charging of the storage battery by means of a generator on the survival craft engine.

(e) Subject to approval of the United States Coast Guard, the storage battery shall be mounted in a suitable container that will provide protection from salt water spray and also allow proper ventilation.

#### § 83.472 Survival craft portable radiotelegraph equipment.

(a) Survival craft portable radiotelegraph equipment required by law to be provided shall be type approved by

the Commission as capable of meeting the provisions of §§ 83.556 and 83.557.

(b) The equipment shall be kept in the radiotelegraph operating room, the chart room, or other suitable location ready to be moved to one or other of the survival craft in the event of an emergency. However, in tankers of 3,000 gross tons and over in which lifeboats are fitted amidships and aft this equipment shall be kept in a suitable place in the vicinity of those lifeboats which are furthest away from the ship's main transmitter.

**§ 83.473 Tests of survival craft radio equipment.**

(a) Inspections and tests of survival craft radio equipment shall be conducted by a qualified representative of the survival craft station licensee at weekly intervals while the ship is at sea, and within 24 hours prior to the ship's departure from each port but not necessarily more than once each week. When the ship is in a foreign port, transmitter tests are subject to such limitations as may be imposed by the Administration having jurisdiction. The inspection and tests shall include operation of the transmitter connected to an artificial antenna, and determination of the specific gravity in the case of a lead-acid battery, or voltage under normal load in the case of other types of batteries, of any battery provided as a part of the survival craft radio equipment.

(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 effective operating condition;

(2) Proof by demonstration in accordance with the principles of § 83.446 (b) that a storage battery used as a part of the survival craft nonportable radio installation is capable of energizing the installation for the required 6-hour period of time.

(c) The results of the inspections and tests shall be made known to the master, and shall 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.

**§ 83.474 Ship station spare parts, tools and testing equipment.**

(a) Each ship station shall be provided with the following spare parts:

(1) One complete set of spare parts for the radiotelegraph auto alarm installed, as specifically designated in special spare-parts lists available for inspection at any of the Commission's field engineering offices;

(2) One complete set of spare parts for type approved main and reserve transmitters installed, as specifically designated in special spare-parts lists available for inspection at any of the Commission's field engineering offices: *Provided*, That pending Commission approval of the type of transmitter installed and promulgation of a special spare-parts list for such transmitter, one complete set of spare parts as designated in § 83.477 shall be provided;

(3) A minimum of 300 feet of antenna wire of good electrical conductivity and at least 2 strain insulators for the erection of a single-wire transmitting antenna;

(4) When a reserve antenna is not installed under the elective provisions of § 83.443(b), a spare transmitting antenna completely assembled for immediate erection shall be carried. If the installed main transmitting antenna is suspended between supports, this spare antenna shall be a single-wire transmitting antenna (including suitable insulators) of the same linear dimensions as the main transmitting antenna. If the main transmitting antenna is of the self-supported vertical type, this spare antenna when erected shall be as efficient as practicable.

(5) One sleeve bearing of each type used by all rotating machines which are a component part of the required radio installation;

(6) One spare electric light bulb for each required emergency light;

(7) One gallon or more of distilled, or otherwise suitable, water for use in the required storage batteries;

(8) One pair headphones complete with a connecting cord and, if used, a cord-terminal plug;

(9) One complete set of electron tubes for the main receiver;

(10) One complete set of electron tubes for the reserve receiver;

(11) One complete set of electron tubes for the radio receiver incorporated

in the required radio direction finding apparatus.

(b) Each ship station shall be provided with the following tools and testing equipment:

(1) An instrument or instruments capable of measuring 2 and 6 volts a.c. and d.c. and the ship's main power voltage supplied to the radioroom. Such instrument or instruments shall have at least 3 voltage ranges with full-scale readings of 2.5 to 5, 10 to 15, and 150 to 300 volts, shall be capable of measuring d.c. voltages with an accuracy of at least 3 percent of full-scale reading and a.c. voltages with an accuracy of at least 5 percent of full-scale reading at a sensitivity of at least 1,000 ohms per volt, and shall be capable of resistance measurements in suitable ranges to a maximum of at least 5 megohms;

(2) One 100-watt or larger electric soldering iron capable of operating from a source of power available in the room or rooms housing the required radio apparatus; and at least one-half pound of rosin-core solder or equivalent;

(3) One complete electric flashlight, two-cell or larger, or 1 portable electric inspection lamp (protected from mechanical injury) with at least 10 feet of flexible cord, and means for rapid connection to the reserve power supply. One spare bulb of the type used shall be provided;

(4) One hydrometer for use with lead-acid batteries when this type of battery is installed;

(5) One pair 5- to 8-inch side-cutting pliers;

(6) One set of assorted end wrenches or socket wrenches, or in lieu thereof one adjustable end wrench;

(7) One 4- to 6-inch screwdriver;

(8) One 1- to 2-inch screwdriver with a blade of approximately  $\frac{1}{8}$  inch.

**§ 83.476 Instruction books and circuit diagrams.**

In addition to the radiotelegraph auto alarm instructions specified by § 8.456, instruction book(s) and circuit diagrams, including modifications, shall be provided for the types of required transmitters, receivers, and radio direction finding equipment installed.

**§ 83.477 Transmitter spare parts pending type approval.**

(a) In lieu of the requirements of § 83.474(a) (2), the following spare parts shall be furnished for a main or a re-

serve radiotelegraph transmitter pending Commission type approval of such transmitter and the issuance of an associated spare-parts list:

(1) One radiofrequency oscillator tube;

(2) One tube for each radiofrequency amplifier stage;

(3) One audiofrequency oscillator tube, if used to provide A2 emission;

(4) Two tubes for a reserve transmitter which is of the self-rectified simple oscillator type;

(5) One power supply rectifier tube for each such tube used;

(6) One resistor of each type used as a grid leak;

(7) One resistor of each type used in the voltage divider of a grid-blocking keying circuit;

(8) One resistor of each type used in series with the keying relay winding;

(9) One complete set of brushes for each rotating machine which utilizes brushes;

(10) Renewable fuse cartridges of each type used in connection with units of the radio installation in the amount of at least one-half the number of each size and type in actual use. For each renewable fuse cartridge in actual use, there shall be available 6 spare fuse links of appropriate capacity. For each non-renewable fuse in use, there shall be available 6 spare fuses of the same type and of appropriate capacity.

(b) The value of each spare resistor specified in paragraph (a) of this section shall be clearly indicated on that resistor.

**§ 83.478 Survival craft station spare parts.**

(a) Each survival craft station shall be provided with:

(1) One electron tube of each type required for operation of the radio installation. If more than 2 electron tubes of one type are used, at least 2 spare electron tubes of that type shall be provided;

(2) One neon or any other type of tube or lamp used as resonance indicator;

(3) Renewable fuse cartridges of each type used in connection with the units of the survival craft radio installation, or which are used in circuits connected to the survival craft radio installation power supply, in the amount of at least one-half the number of each size and type in actual use. For each renewable fuse cartridge in actual use, there shall

be available 6 spare fuse links of appropriate capacity. For each nonrenewable fuse in use, there shall be available 6 spare fuses of the same type and appropriate capacity. If fuse wire is used, sufficient wire shall be provided to permit 6 complete fuse replacements.

(b) Each survival craft station fitted with nonportable radiotelegraph equipment shall be additionally provided with:

- (1) At least 35 feet of insulated antenna wire;
- (2) Two transmitting antenna insulators;
- (3) One pair side-cutting pliers;
- (4) One screwdriver;
- (5) One panel electric light bulb, if used.

**§ 83.479 Location of spare parts, tools, testing equipment, and instruction books.**

(a) Spare parts for the direction finder receiver shall be kept in the same room in which this receiver is located;

(b) Spare parts and tools for the survival craft nonportable radiotelegraph installation shall be kept in the survival craft cabin housing this installation;

(c) Spare parts for the survival craft portable radiotelegraph equipment shall be so kept as to be immediately available for maintenance of this equipment;

(d) Spare bulb(s) for the emergency lights shall be mounted in close proximity to the corresponding emergency light socket(s);

(e) Spare antenna wire, antenna insulators, and distilled water shall be so kept as to be immediately available to the radio officer;

(f) All other spare parts, tools, testing equipment, and instruction books shall be securely kept in a single space in the radiotelegraph operating room or, if desired, in any associated room adjacent to and opening directly into the radiotelegraph operating room, and shall be readily accessible to the radio officer;

(g) The space allocated in accordance with paragraph (f) of this section shall be used only for this purpose, and such space shall be appropriately and conspicuously marked;

(h) All required spare parts, tools, testing equipment, and instruction books shall be available for inspection at any reasonable time by authorized representatives of the Commission.

**Subpart 5—Radiotelephone Stations Provided for Compliance With Part II of Title III of the Communications Act or the Radio Provisions of the Safety Convention**

**§ 83.481 Inspection of station.**

The requirements for station inspection, and provisions pertaining to certificates issued under the Safety Convention, are set forth in § 83.441.

**§ 83.482 Radiotelephone station.**

(a) The provisions of this subpart are applicable to the radiotelephone station required to be provided on a ship by reason of the provisions of part II of title III of the Communications Act, or on a United States ship by reason of the Safety Convention. The radiotelephone station so provided comprises a radiotelephone installation and such other equipment as may be necessary for the proper use and operation of such installation.

(b) The radiotelephone station shall be installed so as to insure safe and effective operation of the equipment, and shall be arranged to facilitate repair. Adequate protection shall be provided against the effects of vibration, moisture, and temperature.

(c) The radiotelephone station and all necessary controls shall be located at the level of the main wheelhouse or at least one deck above the vessel's main deck.

(d) The principal operating position of the radiotelephone station shall 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, except as provided in paragraph (e) of this section, a direct and positive means shall be provided at the principal operating position to take full control of the station.

(e) The use of a readily available, reliable, effective, and completely 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: *Provided, however,* That in the case of stations first placed in service on or after June 1, 1956 the use of such a method for taking control at the principal operating position is acceptable only for operating locations in the chartroom or master's quarters.

**§ 83.483 Radiotelephone installation.**

The radiotelephone installation includes:

- (a) A radiotelephone transmitter;
- (b) A preset receiver as specified by § 83.488(a);
- (c) A manually tuned receiver as specified by § 83.488(b);
- (d) A main source of energy;
- (e) A reserve source of energy, when required by § 83.491(a);
- (f) An antenna system.

**§ 83.484 Radiotelephone transmitter.**

(a) The transmitter shall be capable of effective transmission of A3 emission on 2182 kc/s, 2638 kc/s, and at least two other frequencies within the band 1605–2850 kc/s allocated for ship-to-shore or ship-to-ship communication, and of A2 emission on 2182 kc/s for transmission of the international radiotelephone alarm signal.

(b) The transmitter shall be adjusted so that the transmission of speech or the international radiotelephone alarm signal normally produces a peak modulation within the limits 75 percent and 100 percent.

(c) The transmitter shall be capable of transmitting clearly perceptible signals from ship to ship during daytime, under normal conditions and circumstances, over a minimum normal range of 150 nautical miles.

(d) The transmitter shall be considered as capable of complying with the range requirement 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 § 83.494; and

(2) The transmitter has been demonstrated, or is of a type which has been demonstrated, to the satisfaction of the Commission as capable, with normal operating voltages applied, of delivering not less than 25 watts of carrier power on each of the frequencies 2182 kc/s and 2638 kc/s into an artificial antenna consisting of a series network of 10 ohms effective resistance and 200 picofarads capacitance: *Provided, however,* That an individual demonstration of the power output capability of the transmitter, with the radiotelephone installation normally installed on board ship, may be required whenever in the judgment of the Commission this is deemed necessary.

(e) The transmitter shall be equipped with a device which will provide continuous visual indication whenever the transmitter is supplying power to the antenna.

(f) The transmitter shall be adequately protected by suitable devices from excessive currents and voltages which could cause damage to the components thereof.

(g) A durable nameplate shall be mounted on the transmitter or made an integral part thereof showing clearly the name of the transmitter manufacturer and the type or model of the transmitter.

**§ 83.486 Automatic radiotelephone alarm signal generator.**

The transmitter provided as a component of the radiotelephone station shall be equipped with a device, of a type approved by the Commission pursuant to § 83.142, capable of automatically generating the international radiotelephone alarm signal: *Provided,* That this requirement shall be applicable to all such transmitters initially installed on and after the effective date of the Safety Convention, 1960, and to all such transmitters as of the date which is 3 years after the effective date of the Safety Convention, 1960.

**§ 83.487 Installation of automatic radiotelephone alarm signal generator.**

The controls of the automatic radiotelephone alarm signal generator required by § 83.486 shall be located at the principal radiotelephone operating position only. The controls shall permit instant use of this device to modulate the required transmitter, and to 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.

**§ 83.488 Radiotelephone receivers.**

(a) The receiver used for maintaining the watch required by §§ 83.202(b) and 83.203(b) shall be capable of effective reception of A3 emission, shall be connected to the antenna system specified by § 83.494, and shall be preset to, and capable of accurate and convenient selection of, the frequencies 2182 kc/s, 2638 kc/s, and the receiving frequencies associated with the transmitting frequencies provided pursuant to § 83.484 (a).

(b) In addition to the receiver required by paragraph (a) of this section, a manually tuned receiver capable of

effective reception of A3 emission on all frequencies within the band 1605–3500 kc/s shall be provided.

(c) One or more loudspeakers capable of being effectively used to maintain the required 2182 kc/s listening watch shall be provided, and so located as to permit reception of 2182 kc/s signals at the principal operating position and at any other place where listening is performed.

(d) Each of the receivers required by paragraphs (a) and (b) of this section shall:

(1) Have sufficient sensitivity, as defined in paragraph (e) of this section, over the required frequency band on any required reception frequency to effectively operate a loudspeaker when the receiver input is as low as 50 microvolts;

(2) Be capable of efficient operation when energized by the main source of energy, and when energized by the reserve source of energy if a reserve source of energy is required by § 83.491(a);

(3) Be adequately protected by means of suitable devices from excessive currents and voltages which could cause damage to any component thereof;

(4) Be provided with a durable nameplate, mounted on the receiver or made an integral part thereof, showing clearly the name of the receiver manufacturer and the type or model of the receiver

(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 shall be furnished upon request of a Commission representative.

#### § 83.489 Main source of energy.

(a) There shall be readily available for use under normal load conditions, at all times when required including times of inspection of the ship radio station by a Commission representative, a main source of energy sufficient to simultaneously energize the radiotelephone transmitter at its required antenna power, and the required receivers. Under this load condition the potential of the main source of energy at the power input terminals of the radiotelephone installation shall not deviate from its rated potential 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.

(b) Means shall be provided for adequately charging any storage batteries used as a main source of energy, or any part thereof. There shall be provided a device which, during charging of the batteries, will give a continuous indication of the rate and polarity of the charging current.

#### § 83.491 Reserve source of energy.

(a) In the case of new installations, a reserve source of energy shall be provided, and shall be located on the same deck as the main wheelhouse or at least one deck above the vessel's main deck, unless the main source of energy is so situated.

(b) The reserve source of energy, when required, shall be independent of the propelling power of the ship and of any other electrical system, and shall be sufficient to simultaneously energize the radiotelephone transmitter at its required antenna power, the required receivers, and the automatic radiotelephone alarm signal generator if installed. Such reserve source of energy shall be readily available for use under normal load conditions at all times when required, including times of inspection of the ship radio station by a Commission representative.

(c) The reserve source of energy shall be used only to energize the required radiotelephone transmitter, the required receivers, the emergency electric light required by § 83.496, and the automatic radiotelephone alarm signal generator required by § 83.486.

(d) The reserve source of energy shall be located as near to the required transmitter and the required receivers as is practicable: *Provided*, That the location of such reserve source of energy complies with all applicable rules and regulations of the United States Coast Guard. (See § 83.113.)

(e) All circuits connected to the reserve source of energy shall be appropriately protected by means of suitable devices from overloads or short circuits which could damage any component thereof.

(f) Means shall be provided for adequately charging any storage batteries used as a reserve source of energy, or any part thereof, for the required radiotelephone installation. There shall be provided a device which, during charging

of the batteries, will give a continuous indication of the rate and polarity of the charging current.

(g) The cooling system of each internal combustion engine used as a part of the reserve source of energy shall be adequately protected or treated to prevent freezing or overheating consistent with the season and route to be traveled by the particular vessel involved.

(h) Use of the reserve source of energy, when required by paragraph (a) of this section, shall be available within 1 minute after any need arises for its use.

#### § 83.492 Required capacity.

If the main source of energy or the reserve source of energy provided for the purpose of complying with §§ 83.489 and 83.491 consists of or includes batteries, such batteries shall 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 proper operation of the required radiotelephone transmitter and the required receivers for at least 6 hours continuously under normal working conditions.

#### § 83.493 Proof of capacity.

(a) The shipowner, operating company, or station licensee, when directed by the Commission or its authorized representative, shall prove by demonstration as prescribed in paragraphs (b), (c), (d), and (e) of this section, or by such other means as may be deemed necessary, that the requirements of § 83.492 are met.

(b) Proof of the ability of a storage battery used as a main or reserve source of energy, or any part thereof, to operate continuously and effectively over the 6-hour period of time is authorized to be established by a discharge test over a prescribed period of time, when supplying power at the voltage required for normal and effective operation to an electrical load as prescribed by paragraph (d) of this section.

(c) When the reserve source of energy consists of or includes an engine-driven generator, proof of the adequacy of the engine fuel supply to operate the unit continuously and effectively over the 6-hour period of time may be established by using as a basis the fuel consumption during a continuous period of 1 hour when supplying power, at the voltage

required for normal and effective operation, to an electrical load as prescribed by paragraph (d) of this section.

(d) For the purpose of determining the electrical load to be supplied, the following formula shall be used:

(1) One-half the current consumption of the required transmitter at its rated output power; plus

(2) One-quarter the current consumption of the automatic radiotelephone alarm signal generator required by § 83.486; plus

(3) Current consumption of the preset receiver required by § 83.488(a); plus

(4) Current consumption of emergency light(s).

(e) At the conclusion of the test specified in paragraphs (b) and (c) of this section, no part of the main or reserve sources of energy shall have an excessive temperature rise, nor shall the specific gravity or voltage of any storage battery be below the 90 percent discharge point as determined from information (such as voltage curves or specific gravity tables) supplied by the manufacturer of the type of battery involved.

#### § 83.494 Antenna system.

(a) An antenna system shall 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 shall be such as to insure, insofar as is practicable, proper operation in time of emergency.

(b) If the required antenna is suspended between masts or other supports liable to whipping, an approved device (safety link) which, under heavy stress, will operate to greatly reduce such stress without breakage of the antenna, the halyards, or any other antenna-supporting elements, shall be installed.

(c) When an electrical ground connection is used as a necessary element of the antenna system, such connection shall be made in an efficient manner to the hull of a vessel having a metal hull or, in the case of a vessel not having a metal hull, to a bare plate and/or strips of corrosion resistant metal of good electrical conductivity having a total area of at least 12 square feet in the aggregate, permanently attached to the hull below the waterline and insofar as possible located directly under the antenna structure and radio installation.

**§ 83.496 Emergency electric lights.**

(a) Reliable emergency electric light(s) of not less than 10 watts per unit shall be installed and permanently arranged so as to provide satisfactory illumination confined as far as practicable to 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) shall be energized from the reserve source of energy, if a reserve source of energy is required. In cases where a reserve source of energy is not provided, the emergency lights shall be energized independently of the system which supplies the normal lighting of the required radiotelephone installation.

**§ 83.497 Radiotelephone station clock.**

A reliable clock having a clearly graduated dial of at least 5 inches in diameter shall be securely mounted in such a position that the entire dial can be easily and accurately observed from the principal operating position.

**§ 83.498 Spare antenna.**

A spare transmitting antenna completely assembled for immediate erection shall be provided. If the installed transmitting antenna is suspended between supports, this spare antenna shall be a single-wire transmitting antenna (including suitable insulators) of the same linear dimensions as the installed transmitting antenna. If the installed transmitting antenna is of the self-supported vertical type, this spare antenna when erected shall be as efficient as practicable.

**§ 83.499 Tools and testing equipment.**

(a) The following tools shall be provided in the radiotelephone station:

(1) One pair 5- to 8-inch side-cutting pliers;

(2) One set of assorted end wrenches or socket wrenches, or in lieu thereof one adjustable end wrench;

(3) One 4- to 6-inch screwdriver;

(4) One 1- to 2-inch screwdriver with a blade of approximately  $\frac{1}{8}$  inch.

(b) For the purpose of determining the state of charge of storage batteries used as a component of the required installation, there shall be provided in the radiotelephone station either:

(1) One hydrometer for use when lead-acid batteries are provided; or

(2) One voltmeter, having an accuracy of at least 3 percent when measuring 2 or 6 volts, for use when batteries of other types are provided.

**§ 83.501 Card of instructions.**

A card of instructions giving a clear summary of the radiotelephone distress procedure shall be securely mounted and displayed in full view of the principal operating position.

**§ 83.502 Test of radiotelephone station.**

Unless the normal use of the required radiotelephone station demonstrates that the equipment is in proper operating condition, a test communication for this purpose on 2182 kc/s shall be made by a qualified operator each day the vessel is navigated. When this test is performed by a person other than the master and the equipment is found not to be in proper operating condition, the master shall be promptly notified thereof.

**Subpart T—Radiotelephone Installations Provided for Compliance With Part III of Title III of the Communications Act****§ 83.511 Applicability.**

The provisions of part III of title III of the Communications Act apply to 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. 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 said Act, or for compliance with the Safety Convention, or to vessels navigating on the Great Lakes.

**§ 83.512 Inspection of radiotelephone installation.**

Every vessel subject to part III of title III of the Communications Act shall have a detailed inspection by the Commission of the equipment and apparatus prescribed therein not less than once every 24 months. If after such inspection the Commission determines that all relevant provisions of part III of title III of the Communications Act, the rules of the Commission made pursuant thereto, and the station license, are complied with in an efficient manner, a Communications Act Safety Radiotelephony certificate will be issued. The issuance date of such

certificate shall be the date the installation is found by the Commission to be in compliance, or not later than 1 business day following such in-compliance date. The certificate shall be issued for a period of not more than 24 months.

#### § 83.513 Posting of certificate.

A valid Communications Act Safety Radiotelephony Certificate shall be posted in a prominent and accessible place on board each vessel subject to the provisions of part III of title III of the Communications Act.

#### § 83.514 Radiotelephone installation.

(a) The radiotelephone installation shall include a transmitter and receiver capable of effective transmission and reception of A3 emission within the band 1605–2850 kc/s; or alternatively, if the vessel is within communication range of a public coast station operating in the band 156–174 Mc/s which maintains an efficient watch for the reception of F3 emission on 156.8 Mc/s at all times while the vessel is navigated in waters specified in § 8.511, and the vessel while so navigated is never more than 20 nautical miles from a 156.8 Mc/s receiving location of such station, the radiotelephone installation may, in lieu of medium frequency equipment, include a transmitter and receiver capable of effective transmission and reception of F3 emission within the band 156–174 Mc/s.

(b) The radiotelephone installation shall be installed so as to insure safe and effective operation of the equipment, and shall be arranged to facilitate repair. Adequate protection shall be provided against the effects of vibration, moisture, and temperature.

(c) The radiotelephone installation shall be adequately protected by suitable devices from excessive currents and voltages which could cause damage to the components thereof.

(d) The radiotelephone installation and all necessary controls shall be located at the level of the main wheelhouse or at least one deck above the vessel's main deck: *Provided*, That this requirement is applicable only to vessels of more than 100 gross tons.

#### § 83.516 Principal operating position.

(a) In the case of vessels of over 100 gross tons, the principal operating position of the radiotelephone installation shall be in the room from which the vessel is normally steered while at

sea. If the radiotelephone installation can be operated from any location other than the principal operating position, except as provided in paragraph (b) of this section, a direct and positive means shall be provided at the principal operating position to take full control of the installation.

(b) The use of a readily available, reliable, effective, and completely 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: *Provided, however*, That in the case of installations first placed in service on or after March 1, 1957 the use of such a method for taking control at the principal operating position is acceptable only for operating locations in the chartroom or master's quarters.

#### § 83.517 Medium frequency transmitter.

(a) The transmitter shall have a carrier power output of at least 25 watts, and shall be capable of effective transmission of A3 emission on 2182 kc/s, 2638 kc/s, and at least one ship-to-shore working frequency within the band 1605–2850 kc/s enabling communication with a public coast station serving the region in which the vessel is navigated.

(b) The transmitter shall be adjusted so that the transmission of speech normally produces peak modulation within the limits 75 percent and 100 percent.

(c) The transmitter shall be considered as capable of complying with the power output requirement specified in paragraph (a) 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 § 83.526; and

(2) The transmitter has been demonstrated, or is of a type which has been demonstrated, to the satisfaction of the Commission as capable, with normal operating voltages applied, of delivering not less than 25 watts of carrier power on each of the frequencies 2182 kc/s and 2638 kc/s into an artificial antenna consisting of a series network of 10 ohms effective resistance and 200 picofarads capacitance: *Provided, however*, That an individual demonstration of the power output capability of the transmitter, with the radiotelephone installation normally installed on board ship, may be

required whenever in the judgment of the Commission this is deemed necessary.

**§ 83.518 Very high frequency transmitter.**

(a) The transmitter shall have a carrier power output of at least 20 watts, and shall be capable of effective transmission of F3 emission on 156.8 Mc/s, 156.3 Mc/s, and on the ship-to-shore working frequency 157.2, 157.25, 157.3, 157.35, or 157.4 Mc/s as necessary for communication with one or more public coast stations serving the area in which the vessel is navigated.

(b) The transmitter shall be adjusted so that the transmission of speech normally produces peak modulation within the limits 75 percent and 100 percent.

(c) The transmitter shall be considered as capable of complying with the power output requirement specified in paragraph (a) 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 § 83.526; and

(2) The transmitter has been demonstrated, or is of a type which has been demonstrated, to the satisfaction of the Commission as capable, with normal operating voltages applied, of delivering not less than 20 watts of carrier power into 50 ohms effective resistance on each of the frequencies 156.3 Mc/s, 156.8 Mc/s, and any one of the frequencies 157.2, 157.25, 157.3, 157.35, or 157.4 Mc/s: *Provided, however,* That an individual demonstration of the power output capability of the transmitter, with the radiotelephone installation normally installed on board ship, may be required whenever in the judgment of the Commission this is deemed necessary.

**§ 83.519 Radiotelephone receivers.**

(a) If a medium frequency radiotelephone installation is provided, the receiver used for maintaining the watch required by § 83.202(c) shall be capable of effective reception of A3 emission, shall be connected to the antenna system specified by § 83.526, and shall be preset to, and capable of accurate and convenient selection of, the frequencies 2182 kc/s, 2638 kc/s, and the receiving frequency(s) associated with the ship-to-shore transmitting frequency(s) provided pursuant to § 83.517(a).

(b) If a very high frequency radiotelephone installation is provided, the receiver used for maintaining the watch

required by § 83.202(c) shall be capable of effective reception of F3 emission, shall be connected to the antenna system specified by § 83.526, and shall be preset to, and capable of accurate and convenient selection of, the frequencies 156.3 Mc/s, 156.8 Mc/s, and the receiving frequency associated with the ship-to-shore transmitting frequency provided pursuant to § 83.518(a).

(c) One or more loudspeakers capable of being effectively used to maintain the listening watch required by § 83.202(c) shall be provided, and so located as to permit reception of 2182 kc/s or 156.8 Mc/s signals, as applicable, at the principal operating position and at any other place where listening is performed.

(d) Any receiver provided as a part of the required radiotelephone installation shall have a sensitivity, as defined in paragraph (f) of this section, on any required receiving frequency of at least 50 microvolts in the case of medium frequency equipment, and 1 microvolt in the case of very high frequency equipment.

(e) The receiver required by paragraph (a) or paragraph (b) of this section shall be capable of efficient operation when energized by the main source of energy, and when energized by the reserve source of energy if a reserve source of energy is required by § 83.522(a).

(f) 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 shall be furnished upon request of a Commission representative.

**§ 83.521 Main source of energy.**

(a) There shall be readily available for use under normal load conditions, at all times when required including times of inspection of the ship radio station by a Commission representative, a main source of energy 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 source of energy at the power input terminals of the radiotelephone installation shall not deviate from its rated potential by more than 10 percent on vessels com-

pleted on or after March 1, 1957, nor by more than 15 percent on vessels completed before that date.

(b) When the main source of energy consists of or includes batteries, they shall be installed as high above the bilge as practicable, secured against shifting with motion of the vessel, and accessible with not less than 10 inches head room.

(c) Means shall be provided for adequately charging any storage batteries used as a main source of energy, or any part thereof. There shall be provided a device which, during charging of the batteries, will give a continuous indication of the rate and polarity of the charging current.

#### § 83.522 Reserve source of energy.

(a) In the case of a vessel of more than 100 gross tons, the keel of which was laid after March 1, 1957, a reserve source of energy shall be provided and shall be located on the same deck as the main wheelhouse or at least one deck above the vessel's main deck, unless the main source of energy is so situated.

(b) The reserve source of energy, when required, shall be independent of the propelling power of the vessel and of any other electrical system, and shall be sufficient to simultaneously energize the radiotelephone transmitter at its required output power, and the required receiver. Such reserve source of energy shall be readily available for use under normal load conditions at all times when required, including times of inspection of the ship radio station by a Commission representative.

(c) When the reserve source of energy consists of or includes batteries, they shall be installed as high above the bilge as practicable, secured against shifting with motion of the vessel, and accessible with not less than 10 inches head room.

(d) The reserve source of energy shall be located as near to the required transmitter and receiver as is practicable: *Provided*, That the location of such reserve source of energy complies with all applicable rules and regulations of the United States Coast Guard. (See § 83.113.)

(e) All reserve power supply circuits shall be appropriately protected by means of suitable devices from overloads or short circuits which could damage any component thereof.

(f) Means shall be provided for adequately charging any storage batteries

used as a reserve source of energy, or any part thereof, for the required radiotelephone installation. There shall be provided a device which, during charging of the batteries, will give a continuous indication of the rate and polarity of the charging current.

(g) The cooling system of each internal combustion engine used as a part of the reserve source of energy shall be adequately protected or treated to prevent freezing or overheating consistent with the season and route to be travelled by the particular vessel involved.

(h) Use of the reserve source of energy, when required by paragraph (a) of this section, shall be available within 1 minute after any need arises for its use.

#### § 83.523 Required capacity.

If the main source of energy or the reserve source of energy provided for the purpose of complying with §§ 83.521 and 83.522 consists of or includes batteries, such batteries shall have sufficient reserve capacity available at all times while the vessel is subject to part III of title III of the Communications Act and during Commission inspections to permit proper operation of the required transmitter and receiver for at least 3 hours continuously under normal working conditions.

#### § 83.524 Proof of capacity.

(a) The shipowner, operating company, or station licensee, when directed by the Commission or its authorized representative, shall prove by demonstration as prescribed in paragraphs (b), (c), (d), and (e) of this section, or by such other means as may be deemed necessary, that the requirements of § 83.523 are met.

(b) Proof of the ability of a storage battery used as a main or reserve source of energy, or any part thereof, to operate continuously and effectively over the 3-hour period of time is authorized to be established by a discharge test over a prescribed period of time, when supplying power at the voltage required for normal and effective operation to an electrical load as prescribed by paragraph (d) of this section.

(c) When the reserve source of energy consists of or includes an engine-driven generator, proof of the adequacy of the engine fuel supply to operate the unit continuously and effectively over the 3-hour period of time may be established

by using as a basis the fuel consumption during a continuous period of 1 hour when supplying power, at the voltage required for normal and effective operation, to an electrical load as prescribed by paragraph (d) of this section.

(d) For the purpose of determining the electrical load to be supplied, the following formula shall be used:

(1) One-half the current consumption of the required transmitter at its rated output power; plus

(2) Current consumption of the required receiver; plus

(3) Current consumption of electric light, if required by § 83.527; plus

(4) The sum of the current consumption of all other loads to which the reserve source of energy may supply power 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 sources of energy shall have an excessive temperature rise, nor shall the specific gravity or voltage of any storage battery be below the 90 percent discharge point as determined from information (such as voltage curves or specific gravity tables) supplied by the manufacturer of the type of battery involved.

#### § 83.526 Antenna system.

An antenna shall be provided in accordance with the applicable requirements of § 83.107 which is as nondirectional and as efficient as is practicable for the transmission and reception of radio ground waves. The construction and installation of this antenna shall be such as to insure, insofar as is practicable, proper operation in time of an emergency.

#### § 83.527 Electric light.

(a) If the vessel is navigated during hours of darkness, a reliable electric light of not less than 10 watts per unit shall be installed and permanently arranged so as to provide satisfactory illumination confined as far as practicable to the operating controls at the principal operating position.

(b) The electric light shall be energized from the main source of energy and, if a reserve source of energy for the radiotelephone installation is required, means shall be provided for energizing the light from such source of energy also.

#### § 83.528 Antenna radio frequency indicator.

The transmitter shall be equipped with a device which will provide continuous visual indication whenever the transmitter is supplying radio frequency power to the antenna.

#### § 83.529 Nameplate.

A durable nameplate shall be mounted on the required radiotelephone transmitting and receiving equipment or shall be made an integral part thereof. When the transmitter and receiver comprise a single unit, one nameplate shall be sufficient. The nameplate shall show at least the name of the manufacturer and the type or model number.

#### § 83.531 Test of radiotelephone installation.

Unless the normal use of the required radiotelephone installation demonstrates that the equipment is in proper operating condition, a test communication for the purpose on 2182 kc/s or 156.8 Mc/s shall be made by a qualified operator each day the vessel is navigated. When this test is performed by a person other than the master and the equipment is found not to be in proper operating condition, the master shall be promptly notified thereof.

### Subpart U—Radiotelephone Installations Provided for Compliance With the Great Lakes Radio Agreement

#### § 83.536 Applicability.

The Agreement Between the United States and Canada for the Promotion of Safety on the Great Lakes by Means of Radio applies to vessels of all countries (except as otherwise stipulated in Articles 3 and 6 thereof) which are of 500 gross tons or over, to vessels transporting persons for hire which are over 65 feet in length, and to vessels under 500 gross tons engaged in towing another vessel of 500 gross tons or over or engaged in towing any other floating object having a dimension in any direction of 150 feet or more unless the towed vessel complies with the requirements of the Agreement. The Great Lakes Radio Agreement is applicable to such vessels while they are being navigated on the Great Lakes outside of a port, or while being navigated on the St. Mary's River, the St. Clair River, the Detroit River, the Welland Ship Canal, and the River

St. Lawrence as far eastward as Montreal. As defined in the Great Lakes Radio Agreement, "Great Lakes" includes Lakes Superior, Michigan, Huron, St. Clair, Erie, and Ontario, including their bays and interconnecting waters except the Niagara River and the Black Rock Canal.

#### § 83.537 Survey and certification.

Except as provided in § 83.538, each vessel of the United States subject to the Great Lakes Radio Agreement shall have a periodical survey of the required radiotelephone installation not less than once every 12 months for the purpose of obtaining an appropriate certificate as prescribed by Article 12 of the said Agreement. The survey shall be made while the vessel is in active service or within not more than 1 month before the date on which it is placed in service. The Great Lakes Agreement Radiotelephony Certificate, which is issued to vessels found, as a result of a periodical survey, to be in compliance with the Agreement, shall be prominently posted at the principal operating position of the required radiotelephone installation.

#### § 83.538 Occasional navigation on the Great Lakes.

Any vessel of the United States which enters the Great Lakes from Montreal or below and which engages in not more than two voyages on the Great Lakes in any one calendar year solely between (a) one or more ports outside the Great Lakes and (b) one or more ports on the Great Lakes, may in lieu of complying with the technical radiotelephone requirements of the Great Lakes Radio Agreement, comply with the radiotelephone installation requirements of Regulation 15 of Chapter IV of the Safety of Life at Sea Convention, 1948: *Provided*, That:

(1) The vessel has on board a valid Safety Radiotelephony Certificate; and

(2) The radiotelephone installation is equipped to transmit and receive on the frequencies 2003 kc/s and 2182 kc/s.

#### § 83.539 Radiotelephone installation.

(a) Each vessel of the United States while subject to the requirements of the Great Lakes Radio Agreement shall, in accordance with the Agreement, be fitted with a radiotelephone installation in effective operating condition which is capable of meeting the provisions set forth in this subpart in addition to the

provisions of such other rules in this part, governing ship stations using telephony, as are applicable.

(b) The term "radiotelephone installation", for the purpose of the Great Lakes Radio Agreement, means a ship radio station (including the source of power necessary to energize the apparatus) capable of being used for the effective transmission and reception of speech for the purpose of quickly establishing and effectively carrying on, primarily in time of emergency or distress, radiotelephone communication on the frequencies 2182 kc/s or 2003 kc/s, each of these frequencies being readily available for use at all times. Nothing contained in this paragraph shall be construed either to require or to prohibit the availability of other frequencies by the use of this same "radiotelephone installation" for any class of emission or communication authorized by this part on such other frequencies.

(c) The radiotelephone installation, exclusive of the main source of power for energizing such installation, shall be located as high as practicable in the upper part of the vessel and shall be adequately protected to ensure proper operation and so as not to endanger the vessel and the radio apparatus comprising such installation.

#### § 83.541 Principal operating position.

(a) The principal operating position of the radiotelephone installation shall be on the bridge. If the radio apparatus of this installation (as distinguished from the normal operating controls) is located other than on the bridge, the radiotelephone installation shall be capable of being operated from that location as well as from the principal operating position. In any event, except as provided in paragraph (b) of this section, a direct and positive means shall be provided at the principal operating position to take full control of the installation.

(b) The use of a readily available, reliable, effective, and completely 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: *Provided, however*, That in the case of installations first placed in service on or after April 1, 1955, the use of such a method for taking control at the principal operating position is acceptable only for op-

erating locations in the chartroom or master's quarters.

**§ 83.542 Radiotelephone transmitter.**

(a) The transmitter shall be capable of effective transmission of A3 emission on the frequencies 2003 kc/s and 2182 kc/s.

(b) The transmitter shall be adjusted so that the transmission of speech normally produces peak modulation within the limits 70 percent and 100 percent.

(c) The transmitter shall be capable of delivering at least 50 watts of carrier power into a ship transmitting antenna of average characteristics.

(d) The transmitter shall be considered as capable of complying with the power output requirement specified in paragraph (c) of this section when:

(1) The transmitter is capable of being adjusted for efficient use with the actual ship station transmitting antenna; and

(2) The transmitter has been demonstrated, or is of a type which has been demonstrated, to the satisfaction of the Commission as capable, with normal operating voltages applied, of delivering not less than 50 watts of carrier power on each of the frequencies 2182 kc/s and 2003 kc/s into an artificial antenna consisting of a series network of 10 ohms effective resistance and 200 picofarads capacitance: *Provided, however,* That an individual demonstration of the power output capability of the transmitter, with the radiotelephone installation normally installed on board ship, may be required whenever in the judgment of the Commission this is deemed necessary.

**83.543 Radiotelephone receiver.**

(a) The receiver used for maintaining the listening required by § 83.206 shall:

(1) Be capable of effective reception of A3 emission on the frequencies 2003 kc/s and 2182 kc/s;

(2) Be capable of properly energizing a loudspeaker on each of the frequencies 2003 kc/s and 2182 kc/s when the radio field intensity of the received carrier wave (measured when no modulation is present) is as low as 10 microvolts per meter. The receiver may be considered capable of meeting this requirement if on each of the frequencies concerned the numerical value of the sensitivity of the receiver expressed in microvolts is equal to or less than the numerical value of the maximum height of the associated receiving antenna expressed in feet as

measured from the cabin lead-in insulator. The numerical value of the sensitivity of the receiver may be based on manufacturer's specifications.

(b) The sensitivity of the receiver is expressed as 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.

**§ 83.544 Main source of energy.**

(a) A main source of energy of sufficient capacity to energize the radiotelephone installation properly and immediately shall be available at all times while the vessel is subject to the requirements of the Great Lakes Radio Agreement;

(b) Means shall be provided for adequately charging any storage batteries used as a main source of energy, or any part thereof. There shall be provided a device which, during charging of the batteries, will give a continuous indication of the rate and polarity of the charging current.

**§ 83.545 Auxiliary source of energy.**

(a) Vessels transporting persons for hire which are of 1,000 gross tons and over shall be provided with an auxiliary source of energy, independent of the vessel's normal electrical system and capable of properly energizing the radiotelephone installation and the electric light prescribed by § 83.547, in addition to any other electrical loads to which it may supply energy in times of emergency or distress, for at least 4 continuous hours under normal operating conditions. When meeting this 4-hour requirement, such auxiliary source of energy shall be located on the level of the main pilothouse or at least one deck above the vessel's main deck;

(b) Means shall be provided for adequately charging any storage batteries used as an auxiliary source of energy, or any part thereof, for the required radiotelephone installation. There shall be provided a device which, during charging of the batteries, will give a continuous indication of the rate and polarity of the charging current;

(c) Use of the auxiliary source of energy, when required by paragraph (a) of this section, shall be available within 1 minute after any need arises for its use;

(d) The shipowner, operating company, or station licensee, when directed by the Commission or its authorized representative, shall prove by demonstration as prescribed in subparagraphs (1), (2), (3), and (4) of this paragraph, or by such other means as may be deemed necessary, that the auxiliary source of energy is capable of meeting the requirements of paragraph (a) of this section:

(1) When the auxiliary source of energy consists of or includes a storage battery, proof of the ability of such battery to operate continuously and effectively over the 4-hour period of time is authorized to be established by a discharge test over a prescribed period of time, when supplying power at the voltage required for normal and effective operation to an electrical load as prescribed by subparagraph (3) of this paragraph;

(2) When the auxiliary source of energy consists of or includes an engine-driven generator, proof of the adequacy of the engine fuel supply to operate the unit continuously and effectively over the 4-hour period of time may be established by using as a basis the fuel consumption during a continuous period of 1 hour when supplying power, at the voltage required for normal and effective operation, to an electrical load as prescribed by subparagraph (3) of this paragraph;

(3) For the purpose of determining the electrical load to be supplied, the following formula shall be used:

(i) One-half the current consumption of the required transmitter at its rated output power; plus

(ii) Current consumption of the required receiver; plus

(iii) Current consumption of the electric light prescribed by § 83.547; plus

(iv) The sum of the current consumption of all other loads to which the auxiliary source of energy may supply power in time of emergency or distress;

(4) At the conclusion of the test specified in subparagraphs (1) and (2) of this paragraph, no part of the auxiliary source of energy shall have an excessive temperature rise, nor shall the specific gravity or voltage of any storage battery be below the 90 percent discharge point as determined from information (such as voltage curves or specific gravity tables) supplied by the manufacturer of the type of battery involved.

#### § 83.546 Radiating system.

The radiating system of the radiotelephone installation provided for use on each of the frequencies 2182 kc/s and 2003 kc/s shall comply with the following requirements:

(a) The antenna shall be adequately protected to ensure proper operation and so as not to endanger the vessel and the radio apparatus comprising the installation.

(b) The conductor or system of conductors comprising the antenna shall, consistent with the prevailing physical limitations affecting the antenna installation, be of such configuration and so located physically with regard to proximity to metallic objects and structures as to allow for the development of as uniform a vertically polarized ground wave in all directions as possible for a given antenna power.

(c) Wherever practicable the radiating system shall as a minimum be capable of converting at least 11.5 watts (unmodulated carrier power) of the power supplied to the system by the transmitting apparatus, on 2182 kc/s and 2003 kc/s respectively, into radiated power. A radiating system shall be deemed capable of meeting this requirement and also the requirements of paragraph (b) of this section if it is demonstrated to the satisfaction of the Commission that the radiotelephone installation is capable of developing an effective inverse distance radio field intensity of 19.9 millivolts per meter at 1 statute mile on each of the frequencies 2003 kc/s and 2182 kc/s, or if the product of the antenna current on 2182 kc/s in root mean square amperes measured at the base of the antenna and the maximum height of the antenna expressed in feet as measured from the cabin lead-in insulator is at least 41.4 for an antenna having a horizontal length of not less than one-half of its maximum height, or 70.5 in the case of any other antenna.

(d) When an electrical ground connection is used as a necessary element of the radiating system, such connection shall be made in an effective manner to the hull of a vessel having a metal hull or, in the case of a vessel not having a metal hull, to a bare plate or strips of a corrosion resistant metal of good electrical conductivity having a total area of at least 12 square feet in the aggregate, permanently attached to the hull

below the waterline and insofar as possible located directly under the antenna structure and radio apparatus.

#### § 83.547 Electric light.

Light from an electric source of energy shall be available and permanently arranged to so illuminate the operating controls of the radiotelephone installation at the principal operating position that the installation may be used at any time for quickly establishing and effectively carrying on radiotelephone communication in time of emergency or distress. If an auxiliary source of energy is required to be provided on board the vessel, arrangements shall be provided to utilize or to permit the use of such source of energy for such illumination within 1 minute after the need arises for its use.

#### § 83.548 Trial of radiotelephone installation.

At least once during each calendar day in which a vessel of the United States is navigated while subject to the Great Lakes Radio Agreement, a test communication on 2182 kc/s to demonstrate that the radiotelephone installation is in proper operating condition shall be made by a certified person who is required in accordance with § 8.158, unless the normal daily use of the equipment demonstrates that this installation is in proper operating condition for that purpose. Should the equipment be found at any time by a person other than the master not to be in proper operating condition, the master shall be promptly notified thereof. A record shall be made in the radio station log showing the operating condition of the equipment as determined by either the daily normal communication or the daily test communication referred to in this section, and showing that, if an improper operating condition was found, the master was properly notified thereof.

#### § 83.549 Failure of radiotelephone installation while en route.

If, while a United States vessel is subject to the Great Lakes Radio Agreement, the vessel's radiotelephone installation required by Article 8 of said Agreement ceases to be in effective operating condition, the master shall forthwith exercise due diligence to restore the radiotelephone installation to effective operating condition at the earliest prac-

ticable moment, and, in any event, the effective operating condition of the radiotelephone installation shall be restored at the destination on the Great Lakes of the vessel. In addition to the foregoing, the master shall within 12 hours after the time of arrival of the vessel at the destination, mail to the Secretary, Federal Communications Commission, Washington, D.C., 20554, an explanation of the full particulars of the matter in writing including the date the master became aware of the deficiency in the radiotelephone installation and the nature of such deficiency, a description of steps taken to correct such deficiency, and in the case of a vessel whose destination is on the Great Lakes, a statement that the radiotelephone installation has been, or will be, placed in effective operating condition before the ship leaves that port.

### Subpart V—Type Approval of Compulsory Shipboard Equipment

#### § 83.551 Scope of type approval.

(a) Approval by the Commission of a particular type of equipment in accordance with the provisions of any section or sections of this subpart, for use on board ships for the purpose of compliance with Part II of Title III of the Communications Act, is extended to all equipment of the same identical type, design, and construction, which is manufactured by the same person.

(b) For the purpose of determining compliance with sections 351 (a), 355 (c), (d), (e), and 358 (a) of the Communications Act, the term "transmitter" means a transmitter proper, together with all auxiliary equipment which is deemed necessary to make this unit operate efficiently as a main and/or emergency transmitter in a ship station at sea. For this purpose, each separate motor-generator, rectifier or other unit required to convert the power available as a primary source or sources on the ship, to the phase, frequency, and/or voltage necessary to energize the transmitter proper is construed to be a component of the transmitter.

#### § 83.552 Requirements for main transmitter.

(a) A main transmitter will be type approved by the Commission as capable of meeting the relevant requirements of

section 355 (c) and (d) of the Communications Act if it is demonstrated to the satisfaction of the Commission that the transmitter involved, or a transmitter of the same identical type, is capable of meeting the requirements of paragraphs (b), (c), and (d) of this section: *Provided*, That if deemed necessary, a demonstration of the capabilities of an individual main transmitter installed on board a ship may be required to determine compliance with any or all of the following provisions of this sec-

tion before initial or continued type approval of such transmitter will be given by the Commission.

(b) Tabulation of basic technical requirements (for the purpose of these specific requirements, the term "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 kilocycles, or an artificial (dummy) antenna having the same electrical characteristics):

Operating carrier frequency	Frequency tolerance (parts in 10%)	Class of emission	Percentage modulation (for amplitude modulation)	Modulation frequency (for amplitude modulation)	Antenna power
500 kc/s.....	1,000.....	A2	Not less than 70; not more than 100.	At least 1 frequency between 300 and 1250 cycles per second; except for transmitters installed after July 1, 1951, at least 1 frequency between 450 and 1250 cycles per second.	Not less than 200 watts into an average ship station antenna.
Do.....	do.....	A1			Not less than 160 watts into an average ship station antenna.
410 kc/s and 2 authorized working frequencies in the band 415 to 490 kc/s.	do.....	A2	Not less than 70; not more than 100.	At least 1 frequency between 300 and 1250 cycles per second; except for transmitters installed after July 1, 1951, at least 1 frequency between 450 and 1250 cycles per second.	Not less than 200 watts into an average ship station antenna.
Do.....	do.....	A1			Not less than 160 watts into an average ship station antenna.

(c) A main transmitter shall be capable of efficient operation at its required antenna power when adjusted to any required operating frequency and, when energized by the main power supply of the ship station in which it is installed or by a power supply equivalent thereto, shall be capable of being adjusted rapidly for operation on any one of its required operating frequencies, and shall conform with all other applicable rules of this part.

(d) A main transmitter shall be equipped with suitable indicating instruments of standard accuracy and reliability to measure (1) the current in the antenna circuit, (2) the potential of the heating current applied to the cathode or cathode heater of each electron tube or a potential directly proportional thereto, and (3) the anode current of the radio frequency oscillator

or amplifier which supplies power to the antenna circuit, or in lieu thereof, the anode current of such oscillator or amplifier plus the anode current of any other radio or audio frequency oscillator(s) or amplifier(s) normally employed as part of the transmitter.

(e) Measurements for the purpose of demonstrating compliance with the specific requirements of this section shall be made by methods acceptable to the Commission.

(1) The antenna power shall be determined by the product of the square of the antenna current and the antenna resistance at the operating carrier frequency, both measured at the same point in the antenna circuit and at approximately ground potential.

(f) Each transmitter which was not in existence prior to February 1, 1938, but which is installed after that date on

board a vessel in order to comply with the provisions of this section, shall be furnished with a durable name plate with the month and year of its completion permanently inscribed thereon.

(g) (1) A main transmitter, completed prior to January 1, 1952, shall be provided with an arrangement for conveniently reducing the plate input power of such transmitter to approximately one-half of its rated plate input power.

(2) A main transmitter, completed in construction subsequent to January 1, 1952, which is capable of a plate input power exceeding 450 watts, shall be provided with an arrangement readily permitting the use of a plate input power for telegraphy which is not in excess of 200 watts; unless there is available in the same station a duly authorized radiotelegraph transmitter capable of operation on the radio-channels required for a main transmitter, capable of being energized by a source of power other than the emergency power supply installed for compliance with applicable provisions of treaty or statute, and not capable of a plate input power in excess of 450 watts when operated on frequencies within the band 405 kc/s to 535 kc/s.

**§ 83.553 Requirements for reserve transmitter.**

(a) A reserve transmitter will be type approved by the Commission as capable

of meeting the relevant requirements of section 355 (c) and (f) of the Communications Act if it is demonstrated to the satisfaction of the Commission that the transmitter involved, or a transmitter of the same identical type, is capable of meeting the requirements of paragraphs (b), (c), and (d) of this section when energized for a period of at least six continuous hours by a power supply equivalent to the radio station reserve power supply which is, or will be, available on board the vessel on which the transmitter is, or will be, installed and operated: *Provided*, That if deemed necessary, a demonstration of the capabilities of an individual reserve transmitter installed on board a ship may be required to determine compliance with any or all of the following provisions of this section before initial or continued type approval of such transmitter will be given by the Commission.

(b) Tabulation of basic technical requirements (for the purpose of these specific requirements, the term "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 kilocycles, or an artificial (dummy) antenna having these same electrical characteristics):

Operating carrier frequency	Frequency tolerance (parts in 10 <sup>6</sup> )	Class of emission	Percentage modulation (for amplitude modulation)	Modulation frequency (for amplitude modulation)	Antenna power
500 kc/s.....	1,000 except for reserve transmitters whose use is confined solely to safety communications as defined in § 83.6(a). Such transmitters shall maintain a frequency tolerance of 3,000 parts in 10 <sup>6</sup> .	A2	Not less than 70; not more than 100.	At least 1 frequency between 300 and 1250 cycles per second; except for transmitters installed after July 1, 1951, at least 1 frequency between 450 and 1250 cycles per second.	Not less than 25 watts into an average ship station antenna.
410 kc/s and 1 authorized working frequency in the band 415 to 490 kc/s.	do.....	A2	do.....	do.....	Do.

(c) A reserve transmitter shall be capable of efficient operation at its required antenna power when adjusted to any required operating frequency and, when energized by the reserve power supply of the ship station in which it is installed or by a power supply equivalent thereto, shall be capable of being adjusted rapidly for operation on any one

of its required operating frequencies, and shall conform with all other applicable rules of this part.

(d) A reserve transmitter shall be equipped with suitable indicating instruments of standard accuracy and reliability to measure the current in the antenna circuit and, if completed by the manufacturer after January 1, 1944, the

potential of the heating current applied to the cathode or cathode heater of each electron tube or a potential directly proportional thereto.

(e) Measurements for the purpose of demonstrating compliance with the specific requirements of this section shall be made by methods acceptable to the Commission. The antenna power shall be determined by the product of the square of the antenna current and the antenna resistance at the operating carrier frequency both measured at the same point in the antenna circuit and at approximately ground potential.

(f) Each transmitter which was not in existence prior to February 1, 1938, but which is installed after that date on board a vessel in order to comply with the provisions of this section, shall be furnished with a durable name plate with the month and year of its completion permanently inscribed thereon.

#### § 83.554 Requirements for radiotelegraph auto alarm.

(a) To be type approved by the Commission pursuant to section 3(x) of the Communications Act subsequent to January 1, 1954, radiotelegraph auto alarms shall comply with the following requirements:

(1) *Basic technical requirements.* (i) The auto-alarm shall be capable of being operated by either three or four consecutive dashes when the dashes vary in length from 3.5 to as near 6 seconds as possible and the spaces vary in length between 1.5 seconds and the lowest practicable value, preferably not greater than 10 milliseconds.

(ii) In the absence of interference of any kind, without manual adjustment during operation, the auto-alarm shall be capable of positive and reliable operation with a minimum available signal of 100 microvolts from the antenna circuit. It shall be capable under these conditions of operation on signals of the following classes of emission:

(a) A2 (carrier modulated 30 percent at each modulation frequency from 300 to 1350 cycles per second, inclusive).

(b) B (at each tone frequency from 300 to 1350 cycles per second, inclusive).

(iii) The overload capacity must be sufficient to enable the auto-alarm to operate with inputs from the antenna circuit up to 1 volt, under normal operating conditions.

(iv) The auto-alarm shall respond to the alarm signal through interference

(provided it is not continuous) caused by atmospheric and powerful signals other than the alarm signal. In the presence of atmospheric or interfering signals, the auto-alarm shall automatically adjust itself so that within a reasonably short time it approaches, in so far as is practicable, the condition in which it can most readily distinguish the alarm signal.

(v) The auto-alarm receiver shall be capable of operating when the received auto-alarm signals have a radio frequency of 500 kilocycles with a sensitivity as set forth in subdivision (i) of this subparagraph and shall, in addition, respond without adjustment and with the same sensitivity to signals having any radio frequency from 492 to 508 kc/s, inclusive. With respect to the reception of signals having a radio frequency outside the band 492 to 508 kc/s, the sensitivity of the auto-alarm shall decrease as rapidly as possible, in conformity with the best engineering practice.

(vi) The auto-alarm must not be operated, so as to actuate the warning device, by atmospheric or by any signal from the antenna circuit other than the alarm signal: *Provided*, That received signals other than the alarm signal itself do not in fact constitute a signal falling within the tolerance limits indicated in subdivision (i) of this subparagraph.

(vii) When operated by an alarm signal, or in the event of failure of the auto-alarm apparatus, the auto-alarm shall cause a continuous audible warning to be given in the principal radiotelegraph operating room, in the radio operator's cabin, and on the bridge. In so far as may be practicable, the audible alarm shall also be given in the event of any failure of the auto-alarm system, as a whole, which results in the auto-alarm becoming inoperative.

(viii) For the purpose of regularly testing the auto-alarm, without connection to the antenna, the apparatus shall include a generator pre-tuned to the 500 kc/s distress frequency and a keying device by means of which an alarm signal of minimum strength approximately as indicated in subdivision (ii) of this subparagraph is produced solely for actuating the particular auto-alarm and is not radiated beyond the immediate area of the vessel.

(2) *Requirements as to construction.*

(i) The auto-alarm shall consist essentially of:

(a) A radio receiver capable of receiving emissions of classes A2 and B over the entire frequency range 492 to 508 kc/s, inclusive.

(b) A selector device capable of selecting the alarm signal specified under subparagraph (1) (i) of this paragraph.

(c) A suitable form of audible alarm (minimum of 3 units required).

(d) A testing device to determine locally that the auto-alarm system is effectively operative.

(ii) The auto-alarm may be constructed in one or more units, but must be independent of the ship's regular radio receiving apparatus.

(iii) A telephone jack shall be provided to permit reception, if desired, by a telephone receiver.

(iv) Tuning and tuning controls shall not be accessible to the exterior of the device and shall be so designed and housed as to permit adjustment with special tools only.

(v) Once set into operation the audible alarms must continue to function until switched off in the principal radiotelegraph operating room.

(vi) A nonlocking or momentary-throw switch shall 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.

(vii) The receiver and selector shall be of rugged construction throughout, capable of withstanding continuous and severe vibration equivalent to conditions that may be experienced on board a ship under the worst possible conditions and capable of continuous operation over long periods of time.

(viii) All units of the auto-alarm system shall be designed and constructed in accordance with generally accepted principles and practices of modern electronic engineering.

(ix) The auto-alarm system shall not be affected by sudden changes in ambient temperature between zero degrees centigrade and 50 degrees centigrade, shall not be affected by salt atmosphere, and by humidity conditions as high as 90 percent at a temperature of 40 degrees centigrade.

(x) Condensers, transformers, or other units shall not contain compounds which will flow at temperatures below 85 degrees centigrade, which will crack at temperatures above 0° centigrade, which are hygroscopic or which contain any corrosive substance.

(3) *Requirements as to testing and approval.* (1) Before an auto-alarm receiver will be approved by the Commission pursuant to paragraph (x) of section 3 of the Communications Act, a sample type of such auto-alarm receiver must be submitted for the purpose of demonstrating by means of suitable laboratory and field tests, that it complies with these requirements. Such tests will be conducted by the Commission, and other cooperating United States Government departments or agencies as may be appropriate, under the test specifications set forth under subparagraph (5) of this paragraph.

(i) Failure to pass any specified test may result, by order of the Commission, in the discontinuance of all tests on the unit or component involved and the immediate rejection of the entire apparatus.

(ii) Manufacturers' tests of the complete device and/or of any components thereof shall be conducted in the laboratory or shop of the manufacturer(s). These tests shall be carried out in accordance with the provisions of subparagraph (4) of this paragraph.

(iv) Laboratory tests conducted by the Commission and/or by any other cooperating United States Government department or agency as may be appropriate, under test specifications prescribed by the Commission shall be at the expense of the manufacturer or person submitting the device for approval. A report of the tests conducted by the Commission, and/or other Government department, will be available to the Commission only: *Provided*, That such reports will be made available to the manufacturer involved at a subsequent date to be determined by the Commission.

(4) *Requirements as to manufacturers' tests.* (i) The following tests shall be conducted by the manufacturer of the auto-alarm device, who shall submit data in a signed statement showing that such tests have been made as hereinafter required prior to submission of a working model for type tests: *Provided, however*, That data obtained from manufacturers of parts used in construction of the device may be submitted in lieu of the results of such tests conducted by the manufacturer of the complete device. The Commission may require that any or all of the prescribed tests be witnessed by its representative(s).

(a) The insulation resistance of the windings and terminals to case and core of transformers and electromagnet coils and the dielectric resistance of condensers shall be measured and data recorded for the information of the Commission.

(b) Transformers and/or electromagnet coils shall be energized continuously under normal conditions of operation for a period of one hour at an ambient temperature of 25 degrees centigrade. For purposes of making this test, maximum rated voltage at rated frequency with the secondary of transformers normally loaded and with the frame or enclosure grounded will be applied. Under these conditions the temperature of each transformer and/or electromagnet coil shall not be such as to affect injuriously any of the material used in construction and the temperature rise of the unit undergoing test shall not exceed 40 degrees centigrade at the end of one hour.

(c) Immediately after each transformer and/or electromagnet coil has been tested under (a) of this subdivision, a test for breakdown capability will be made by applying between windings and between each winding and the core or enclosure, for a period of five minutes, a potential ten times the maximum rated effective potential of the circuit in which the coil or winding is connected.

(d) All components containing wax or other sealing, insulating or electrolytic compounds shall be placed in an oven and the ambient temperature brought to 75 degrees centigrade and maintained for a period of 15 minutes. They shall then be placed in a refrigerator and the ambient temperature brought to zero degrees centigrade and maintained for a period of 15 minutes. If sealing, insulating or electrolytic compounds flow during this oven test or crack during this refrigerator test, these units will not be acceptable for use as components in the device. The electrical characteristics of each unit shall be measured at these temperatures and any deviations from their normal ratings that would adversely affect the operation of the auto-alarm device shall preclude the use of that component.

(5) *Requirements as to laboratory tests.* (i) The following tests shall be conducted at the Commission's Laboratory at Laurel, Maryland, and shall be at the expense of the manufacturer or person submitting the auto-alarm for

approval. The report of these tests will be furnished to the Commission only. Tests will be conducted as described in the following paragraphs with the auto-alarm connected to an artificial antenna consisting of a 20 microhenry inductance, a 500 picofarad capacitor and a 5 ohm resistor connected in series. The receiver will be tested with its internal sensitivity control (if provided) set at maximum sensitivity, except where otherwise specified.

(a) Test of sensitivity of the auto-alarm at the radio frequency 500 kc/s to determine operation of the aural warning device.

(1) Measurement of minimum alarm signal input, A2 emission, 30 per cent modulated with a 300 cycles per second tone, required to operate aural warning device.

(2) Test of operation using 100 microvolts alarm signal input, A2 emission, 30 percent modulated with a 300 cycles per second tone.

(3) Test of operation using 1 volt alarm signal input, A2 emission, 30 percent modulated with a 300 cycles per second tone.

(4) Using A2 emission, 30 percent modulated with a 1350 cycles per second tone, test as in (a) (1), (2), and (3).

(5) Test of aural warning device operation with 50 microvolts noise input and 100 microvolts alarm signal, A2 emission, 30 percent modulated with a 300 cycles per second tone.

(b) Test to determine operation of aural warning device from a 100 microvolts alarm signal, A2 emission, 30 percent modulated with a 300 cycles per second tone transmitted on any radio frequency or frequencies selected by the Commission from 492 to 508 kc/s, inclusive.

(c) Test of auto-alarm operation with internal receiver sensitivity control (if provided) set at minimum setting at which 100 microvolts input on the radio frequency 492 kc/s will operate aural warning device with simultaneous inputs of 100 microvolts auto-alarm signal, A2 emission, 30 percent modulation with an 800 cycles per second tone on 492 kc/s and 200,000 microvolts, A2 emission (800 cycles per second modulation) unkeyed signal on the frequency 350 kc/s; similar tests with the same alarm signal and a 25,000 microvolts, A2 emission (800 cycles per second modulation) unkeyed signal on the frequency 460 kc/s; similar test with internal receiver sensitivity con-

trol (if provided) set at minimum setting at which 100 microvolts input on the frequency 508 kc/s will operate aural warning device with simultaneous input of A2 emission (800 cycles per second modulation) unkeyed signal on the frequency 540 kc/s at 25,000 microvolts; and similar test with this latter signal on the frequency 650 kc/s at 200,000 microvolts.

(d) Test of selector response to dashes from 3.5 up to 6.0 seconds in duration when the spaces between the dashes have a duration from 10 milliseconds to 1.5 seconds. These tests shall be made on the radio frequency 500 kc with an input of 100 microvolts, A2 emission, 30 percent modulated with 300 cycles per second tone.

(e) [Reserved]

(f) Test of ability of the aural warning device to operate satisfactorily when the auto-alarm becomes inoperative under the following conditions:

(1) Filament burn-out of any electron tube in the apparatus;

(2) Failure of power supply.

(g) Tests to determine capability of proper operation of auto-alarm over long periods of time under any condition which may be expected on board ships while being navigated during extreme weather and sea conditions.

(1) The auto-alarm device shall be placed in operation for a period of one hour while subjected to each of the following conditions of temperature and relative humidity:

(i) 50 degrees centigrade and 50 percent relative humidity;

(ii) 30 degrees centigrade and 95 percent relative humidity;

(iii) Zero centigrade and 50 percent relative humidity.

(2) The auto-alarm device shall be placed in operation for a sufficient length of time under the following conditions to determine whether or not it will operate properly under such conditions:

(i) While the device is being rocked in such manner as to stimulate a roll and pitch of 45 degrees from the vertical.

(ii) When subjected to severe vibration comparable to that which might be experienced on board ship, as for example when subjected to vibrations having a period between 20 and 30 cycles per second and an amplitude (0.03 inch total excursion, i.e., 0.015 inch each side of the position of rest) of at least 0.03 inch in a direction at an angle of 30 to 45 degrees with the base of the device.

(h) Test of the testing device incorporated in the auto-alarm.

(i) Tests to determine satisfactory operation of the apparatus on a 500 kc/s alarm signal at temperatures of approximately 20 and 50 degrees centigrade. Tests to be made on the frequencies 500, 492 and 508 kc/s with an input of 100 microvolts, A2 emission, modulated 30 percent with a 300 cycles per second tone.

(j) General inspection of electrical and mechanical features.

(6) *Requirements as to field test.* (i) This test shall be conducted 24 hours a day for a period of not less than 30 consecutive days and shall be for the purpose of ascertaining the reliability of the auto-alarm and its freedom from false operation under practical interference conditions. For this test the auto-alarm shall be connected to an antenna typical of the average main antenna on shipboard and its operation shall be observed continuously during this period.

(ii) During this test period a minimum of 500 test alarm signals shall be transmitted locally while the test antenna is connected to the auto-alarm. The power used for the production of this test alarm signal shall be produced by a suitable radio frequency generator coupled to the antenna system. The receiver internal sensitivity adjustment (if provided) shall be set at the value designated by the manufacturer. During the official test period, adjustment of the auto-alarm shall not be made more than once in each 12 consecutive hours.

(iii) Tests for response to the alarm signal shall be made on at least the radio frequencies 492, 500, and 508 kc/s in a proportion on each frequency as determined by the Commission.

(b) No change shall be made in any auto-alarm under the type approval identification issued by the Commission, except upon specific authorization by the Commission to make such change(s). When it is desired to make any change, an application therefor, together with pertinent detailed information shall be submitted to the Commission for consideration and appropriate action.

(c) Type approval of an auto-alarm when given by the Commission, may be for a limited period of time only, and is subject to withdrawal if the device proves defective in service and cannot be relied upon under usual conditions of maintenance and operation encountered on board ships at sea. Withdrawal of ap-

proval means that no further devices of the particular model affected may be installed, but will not immediately apply to such devices already installed unless it is found that there has been an unauthorized change in design or construction, or the material or workmanship is defective.

**§ 83.555 Requirements for automatic-alarm-signal keying device.**

(a) To be approved by the Commission for use in compliance with § 83.508 and to be recognized as being capable of functioning in compliance with §§ 83.508 and 83.509, each type of automatic-alarm-signal keying device shall comply with the requirements set forth in this section.

(b) No change shall be made in any automatic-alarm-signal keying device under the type approval identification issued by the Commission, except upon specific authorization by the Commission to make such change(s). When it is desired to make any change, an application therefor, together with pertinent detailed information shall be submitted to the Commission for consideration and appropriate action.

(c) Type approval of an automatic-alarm-signal keying device when given by the Commission, may be for a limited period of time only, and is subject to withdrawal if the device proves defective in service and cannot be relied upon under usual conditions of maintenance and operation encountered on board ships at sea. Withdrawal of approval means that no further devices of the particular model affected may be installed, but will not immediately apply to such devices already installed unless it is found that there has been an unauthorized change in design or construction, or the material or workmanship is defective.

(1) *Basic technical requirements.* (i) The automatic-alarm-signal keying device may consist of one or more units, either separate and distinct from other units of the ship's radio installation or may be incorporated, if approved by the Commission, as part of any other unit.

(ii) The device shall be designed so as to properly operate, on board ships at sea, the normal keying circuits of any transmitter approved by the Commission for use as a main or as a reserve transmitter in compliance with section 355 of the Communications Act of 1934, as amended. A list of transmitters ap-

proved by the Commission for this purpose will be furnished upon request.

(iii) Timing-adjustment controls shall not be accessible from the exterior of the device and shall be designed and housed so as to prevent adjustment by unauthorized persons.

(iv) The keying mechanism shall operate so as to repeatedly transmit the alarm signal. For this purpose the dashes transmitted shall have a duration within the limits of 3.8 to 4.2 seconds, and spaces between each of the twelve dashes constituting a series shall have a duration within the limits of 0.8 to 1.2 seconds. Spaces between each series of twelve dashes shall have a duration within the limits of 0.8 second to one minute.

(v) A single control, protected so as to avoid accidental manipulation, shall be provided for placing the device itself into full operation within a maximum period of 30 seconds. Once set into operation, the device shall be capable of continuously and properly operating without further attention for a period of not less than one hour.

(vi) The automatic-alarm-signal keying device shall be capable of being energized solely by a source of power independent of the propelling power of the ship and independent of any other system: *Provided, however,* That the device may be energized by the radio station emergency power supply and any storage battery power supply regularly used for operating a required automatic alarm receiver.

(vii) When the proper operation of the device is dependent upon the maintenance of any inherent conditions of operating within relatively narrow limits, the Commission, as a provision of its approval, may prescribe such limits and require that the device shall include means for indicating to the operator when deviations from the conditions occur.

(viii) Instructions concerning the proper adjustment of the device and the correct indication of any instrument incorporated for the purpose of revealing improper operation, shall be inscribed in a durable manner on a plate mounted on the device in a position to be easily read by the operator.

(ix) Means shall be provided to insure that when the "on-off" control of the device is placed in the "off" position, the keying circuit to the radio transmitter(s) is automatically opened.

(2) *Requirements as to construction.*

(1) The design of the automatic-alarm-signal keying device shall be in accordance with the modern engineering practice and the device shall be capable of operating under conditions of constant and severe vibrations and extreme variations of temperature and humidity equivalent to those experienced on board ships at sea under the worst possible conditions. This requirement applies only to use of the device on board such types of vessels as are normally subject to Title III, Part II of the Communications Act.

(ii) A durable nameplate shall be mounted on each device showing the name of the manufacturer, the type and serial number and the month and year of completion by the manufacturer. However, this nameplate need not be provided on a working model submitted to the Commission for type testing and approval.

(3) *Requirements as to testing and approval.*

(i) Before an automatic-alarm signal keying device is approved by the Commission, a working model of the particular type for which approval is desired shall be submitted for inspection, and it shall be demonstrated by means of suitable type tests that it complies with these requirements. The model equipment will be operated in these tests in the same way and under conditions similar to those encountered in actual service. In connection with such tests, the manufacturer shall supply all instructions and/or services which are intended to be supplied to the purchaser of the equipment, including a proposed instruction book and a tentative list of spare parts as would normally be supplied with shipboard installations.

(ii) Failure to pass any specified test may result, by order of the Commission, in the discontinuance of all tests on the particular device involved and in the immediate rejection thereof: *Provided*, That the Commission, within its discretion, may relax to a reasonable extent the provisions of subparagraph (4) of this paragraph with respect to an automatic-alarm-signal keying device which is included as an integral part of any automatic-alarm receiver approved by the Commission and completed by the manufacturer prior to the effective date of these requirements and type tests.

(iii) Manufacturers' tests of the complete device and/or of any components thereof shall be conducted in the labora-

tory or shop of the manufacturer(s). These tests shall be carried out in accordance with the following requirements under the heading "manufacturers' tests" and at the expense of the manufacturer or person submitting the device for approval.

(iv) Laboratory tests shall be conducted by the Commission, and/or by any other cooperating United States Government department as may be appropriate, under test specifications prescribed by the Commission and shall be at the expense of the manufacturer or person submitting the device for approval. A report of the tests conducted by the Commission, and/or other government department, will be available to the Commission only: *Provided*, That such reports will be made available to the manufacturer involved at a subsequent date to be determined by the Commission.

(v) Field tests, as deemed necessary or desirable.

(4) *Requirements as to manufacturers' test.*

(i) Tests shall be conducted by the manufacturer of the automatic-alarm-signal keying device, who shall submit proof in a signed statement that they have been made as required, together with supporting data: *Provided, however*, That data obtained from manufacturers of parts used in the construction of the device may be submitted in lieu of the results of such tests conducted by the manufacturer of the complete device.

(ii) Sufficient tests shall be applied to all components to determine the durability of materials, character of workmanship, and that the electrical and/or mechanical characteristics are those required for efficient operation of the device.

(5) *Requirements as to laboratory tests.*

(i) The automatic-alarm-signal keying device shall be capable of operating the keying circuit of any transmitter approved by the Commission for use as a main transmitter or as a reserve transmitter in compliance with section 355 of the Communications Act of 1934 (a list of the types of transmitters approved by the Commission for this purpose will be furnished upon request). For the purpose of demonstrating compliance with this requirement the transmitter keying circuit of the device shall be tested for a direct current carrying capacity of two amperes through a non-inductive resistance of 115 ohms. Ter-

minals, electrical conductors and keying contacts shall be of sufficient size and properly spaced and insulated for these values of current and for the voltage which will necessarily be applied in this test. During this test, arcing shall not occur when the keying contacts are operated which would unduly affect the duration of the dashes and spaces between dashes, or which would otherwise adversely affect the operation of an approved radiotelegraph transmitter keyed by the device.

(ii) The automatic-alarm-signal keying device, if electrically driven, shall be capable of operation when the required electrical energy is furnished solely by an independent power supply. For the purpose of demonstrating compliance with this requirement, the following tests are prescribed:

(a) The device shall be operated continuously for a period of one hour from a power supply equivalent to the radio station emergency power supply or the required automatic alarm receiver storage battery power supply of vessels on which the device is to be used. (Radio station emergency power supplies having potentials of 12, 24, and 110 volts are commonly used on board vessels of the United States. Twelve volt emergency power supplies are most common on these vessels. Some of the approved automatic alarm receivers used on board United States ships to date are energized by a storage battery power supply of either 6 or 24 volts, or from a separate and independent source of power furnished as an integral part of the device.) For this operation test the potential of the electrical power supply, if used, shall be varied over a voltage range of plus or minus 15 per cent of the rated potential of such power supply, during which the transmitted dashes shall have a duration within the limits of 3.8 to 4.2 seconds, and spaces between dashes shall have a duration within the limits of 0.8 to 1.2 seconds.

(b) The electrical circuits of the device shall be inspected and tested as may be necessary to determine whether or not they are properly fused for adequate protection of the device and the power supply.

(iii) The automatic-alarm-signal keying device shall be capable of properly operating the keying circuit of an approved radiotelegraph transmitter so as to transmit the alarm signal for a con-

tinuous period of one hour, under any condition which may be expected on board ships while being navigated during extreme weather and sea conditions. For this purpose the following tests are prescribed in addition to the test prescribed in subdivision (ii) of this subparagraph.

(a) The keying device shall be placed in operation for a period of one continuous hour while subjected to each of the following conditions of temperature and relative humidity:

(1) 50 degrees centigrade and 50 percent relative humidity.

(2) 30 degrees centigrade and 95 percent relative humidity.

(3) Zero centigrade and 50 percent relative humidity.

(b) The keying device shall be placed in operation for a sufficient length of time under the following conditions to determine whether or not it will operate properly under such conditions:

(1) While the keying device is being rocked in such a manner as to simulate a roll and pitch of 45 degrees from the vertical, that is, over an arc of 45 degrees in two planes normal to the horizon and perpendicular to each other.

(2) When subjected to severe vibration comparable to that which might be experienced on board ship, as for example when subjected to vibrations having a period between 20 and 30 cycles per second and an amplitude (0.03 inch total excursion, i. e., 0.015 inch each side of the position of rest) of at least 0.03 inch in a direction at an angle of 30 to 45 degrees with the base of the device.

(3) The keying device shall be inspected to determine whether or not all delicate parts are properly enclosed and protected from moisture and from mechanical injury and whether or not components are accessible as may be necessary for inspection and repair, when in service.

(4) The keying device shall be inspected and tested as may be necessary to determine the effectiveness of adjustment controls and means for making these adjustments under service conditions, together with precautions taken to prevent tampering with adjustments.

(5) Indicating instruments (when provided) and operating controls shall be inspected to determine whether indication is given that the device is in satisfactory operation when the starting control is placed in the "on" position and

to determine that a single control for starting and stopping is provided, capable of placing the device in full operation within 30 seconds from the time the control is placed in the "on" position.

**§ 83.556 General requirements for survival craft radio equipment.**

To be type approved by the Commission pursuant to § 83.469 or 83.472, survival craft radio equipment shall comply with the following general requirements in addition to the applicable specific requirements set forth in §§ 83.557 and 83.558.

(a) The design and construction of the radio equipment shall be such that no tools are required to place it in operation for routine tests or for emergency communication.

(b) The components and assembly of the entire survival craft radio equipment shall insure the utmost dependable operation and the design shall be such that heavy vibration and physical shocks to which a survival craft is subject will cause no damage. Components shall be housed and treated to withstand saline dampness and to minimize the adverse effect of prolonged exposure to salt water or salt spray.

(c) A durable nameplate shall be mounted on the equipment or made an integral part thereof showing at least the type or model number, the name of the manufacturer, and the month and year of manufacture.

(d) Each survival craft equipment shall be provided with a copy of an instruction manual covering the design, installation, operation, and maintenance of the equipment.

(e) Simple instructions suitable for the guidance of unskilled persons shall be durably imprinted on a card, which shall be prominently and permanently attached to the equipment. These instructions shall contain information together with sketches covering the erection of the antenna(s) and the operation of the equipment for automatic transmission; also information as to manual transmission of the international radiotelegraph distress signal and the international radiotelegraph alarm signal, and a statement that the latter signal is effective only if transmitted on the frequency 500 kc/s.

(f) An artificial antenna for test purposes shall be provided.

**§ 83.557 Requirements for survival craft portable radio equipment.**

(a) There shall be provided as a single unit a portable buoyant apparatus consisting of a transmitter, receiver including headphones, power supply, grounding conductor, a collapsible rod antenna or in lieu thereof a collapsible mast, a single-wire antenna, and a line for lowering the apparatus.

(1) The apparatus, as a single unit, shall be of sufficient buoyancy to float in sea water and shall be sufficiently rugged in construction to withstand physical shocks and rough handling. The apparatus shall be deemed to comply with this requirement if, after being dropped into sea water in various positions from a height of at least 20 feet, it can be operated immediately without any repair or adjustment (other than normal antenna circuit tuning) and without departure from required performance. Suitable protection shall be provided for the operating controls, indicating devices and instruments, including the head receiver, against physical harm from accidental or inadvertent blows and from the adverse effects of prolonged exposure to the weather. Operational parts of the apparatus adversely affected by immersion in sea water shall be enclosed so as to provide the necessary protection. Any such enclosure shall be deemed to be water-tight if it can be submerged in sea water so that no part is less than two inches below the surface of the water for a continuous period of two hours without leaking.

(2) The apparatus, as a unit, shall be fitted with durable handles or grips. These shall be so arranged and the distribution of the weight of the apparatus shall be such as to provide for convenient carrying by either one or two persons.

(3) Provision shall be made for securely fastening components of the apparatus, by lashing or other acceptable means, to a lifeboat thwart as may be necessary to enable easy and convenient operation of the lifeboat portable radio equipment.

(4) The apparatus exclusive of the line for lowering shall not weigh more than sixty pounds.

(5) The line for lowering shall consist of not less than 40 feet of 9 thread manila or sisal rope, or the equivalent thereof, which shall be in good condition

and securely attached to the apparatus at all times.

(6) Components of the apparatus subject to loss by detachment from the unit for operation or test of the equipment shall be so arranged as to insure their availability at all times.

(7) Each apparatus shall be equipped with a durable removable plate showing clearly the survival craft radio call sign in letters and digits and in characters of the International Morse Code.

(b)(1) The radio transmitter shall comply with the following requirements:

Operating frequencies (kilocycles)	Frequency tolerance	Type of emission	Modulation percentage (average of modulation percentage of positive and negative peaks)	Modulation frequency	Power output (into specified artificial antenna)	Artificial antenna
500.....	<i>Parts in 10<sup>6</sup></i> 5,000	A2	Not less than 70.	Not less than 450 nor greater than 1350 cycles per second.	Not less than 0.25 watt.	1 ohm resistance, 75 picofarads capacitance.
500.....	5,000	A2	.....do.....	.....do.....	Not less than 2 watts. <sup>1</sup>	15 ohms resistance, 100 picofarads capacitance.
8364.....	200	A2	.....do.....	.....do.....	Not less than 4 watts.	40 ohms resistance.

<sup>1</sup> In the case of equipment type approved prior to the effective date of the Safety Convention, 1960, the power output may be 1.7 watts into an artificial antenna of 10 ohms resistance and 75 picofarads capacitance.

(2) The transmitter radio frequency and modulation frequency control circuits shall be pretuned to the required frequencies and shall be of such design and construction that the operating frequencies are maintained within the prescribed tolerances under varying voltages, antenna circuit characteristics, and other normal conditions of adjustment. The frequency control circuit adjustment(s) shall be securely locked to prevent detuning as a result of shock or vibration and shall not be readily available to the person using the transmitter.

(3) Controls shall be provided on the operating panel for efficient transfer of radio frequency energy at each required operating radio frequency to the required antenna. An initial adjustment of these controls shall effectively resonate the antenna circuit at each required operating radio frequency and this condition shall be maintained without further adjustment of these controls during a normal operating period of the transmitter.

(4) Simple and reliable controls shall be provided so that the operator of the transmitter can quickly and conveniently place it in use for: Manual operation on 500 kc/s, manual operation on 8364 kc/s, and automatic operation alternately on these two frequencies: *Provided*, That not more than one manual switch adjustment shall be necessary to place the transmitter in operation for automatic

transmission. For manual radiotelegraphy the transmitter and receiver, including their controls, shall be arranged mechanically and electrically so that they can be operated efficiently and conveniently from the same operating position for communication on the required operating frequencies and so that the time necessary to change from transmission to reception, and vice versa, on these frequencies is as short as possible and in no event more than two seconds. For automatic operation provision shall be made as follows:

(i) On 500 kc/s for transmission of 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 kc/s for transmission of 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) For transmission of the specified signals by automatically changing the operating frequency of the transmitter from 500 kc/s to 8364 kc/s and vice versa with a transfer time interval not to exceed one second.

(iv) For completely de-energizing the receiver during such operation of the transmitter.

(v) For testing the required automatic keying arrangement without the generation of radio frequency energy.

(vi) The speed of the automatic transmission of the international radio-telegraph distress signal shall be at a rate not in excess of 16 words per minute nor less than 8 words per minute. The alarm signal dashes shall 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 shall have a duration within the limits of 0.8 to 1.2 seconds.

(5) The transmitter shall be equipped with a reliable visual indicator or indicators as may be necessary (such as neon tubes) to indicate antenna circuit resonance at each operating frequency with any antenna provided. Failure of the indicator(s) shall have no adverse effect on the actual operation of the transmitter.

(c) The receiver shall comply with the following requirements:

(1) The receiver shall, when used with headphones, be capable without manual tuning of receiving A2 emission over the band 492–508 kc/s, and shall be capable when manually tuned of receiving A1 and A2 emission on any frequency in the band 8320–8745 kc/s.

(2) The sensitivity of the receiver shall be such that at least 1 milliwatt of audio power is developed in a noninductive load resistor having an ohmic value substantially equal to the value of the impedance of the head receiver at 1,000 cycles per second 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:

Frequency (kilo-cycles)	Signal strength (microvolts)	Modulation factor	Modulation frequency (cycles per second)	Artificial antenna
500.....	200	1.3	400	15 ohms resistance and 100 picofarads capacitance. <sup>1</sup>
8364.....	1000	.3	400	40 ohms resistance

<sup>1</sup> In the case of equipment type approved prior to the effective date of the Safety Convention, 1960, the artificial antenna may be 10 ohms resistance and 75 picofarads capacitance.

The noise power present in the output of the receiver when the receiver is adjusted for the reception of type A2 emission on the frequencies 500 kc/s and 8364 kc/s shall be determined with an unmodulated input signal of the indicated strength.

(3) The selectivity of the receiver preceding the final detector shall be such that response uniform to within 6 db is obtained over the frequency range 492 to 508 kc/s.

(4) The audio frequency response of the receiver shall be electrically uniform to within 6 decibels over the range of frequencies between 400 and 1400 cycles per second.

(5) The receiver shall be equipped with only one manually operated volume control.

(d) The power supply shall comply with the following requirements:

(1) The source of power shall be a manually operated electric generator capable of efficiently 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 shall not exceed a maximum of 0.15 horsepower for any required condition of operation of the survival craft radio installation at any temperature of the generator and its associated driving mechanism between minus 30 degrees and plus 125 degrees Fahrenheit. Under these conditions the speed of rotation of the crank handle(s) shall not be greater than 70 revolutions per minute nor shall the cycles of operation of the propelling lever(s) be greater than 70 cycles per minute. The voltages applied to the radio installation shall not vary from their normal values more than 20 per cent at any generator speed in excess of the normal operating speed which can be manually developed.

(e) The single wire antenna and the collapsible rod antenna or the collapsible mast provided in lieu thereof shall comply with the following requirements:

(1) The collapsible rod antenna shall be of the maximum practicable height as approved by the Commission for each particular type of survival craft radio apparatus. The collapsible mast provided in lieu of the collapsible rod antenna shall be of the maximum practicable height as approved by the Commission for each particular type of survival craft radio apparatus and capable

of supporting the required single wire antenna.

(2) The single wire antenna shall consist of a length of at least 40 feet of extra-flexible stranded copper wire having a cross-sectional area of not less than 10,000 circular mils together with means for effective insulation of the antenna, means for fastening the wire to the antenna supports, and means for making electrical connection to the transmitter.

(f) The grounding conductor shall comply with the following requirements:

(1) The grounding conductor shall consist of a length of not less than 20 feet of No. 10 bare stranded copper wire or equivalent copper braid effectively weighted at one end for immersion in the sea. This conductor shall be securely fastened to an effective ground terminal on the apparatus.

(g) The artificial antenna shall comply with the following requirements:

(1) The artificial antenna shall provide a reliable load for the transmitter for test purposes, at the frequencies 500 kc/s and 8364 kc/s, of approximately the same electrical characteristics as the single wire antenna required by this section.

(2) The artificial antenna shall be housed in a single container and provided with appropriate terminals. If more than two terminals are provided on the artificial antenna, all the terminals shall be properly labeled.

§ 83.558 Requirements for lifeboat non-portable radio equipment.

(a)(1) The radio transmitter shall comply with the following requirements:

Operating frequencies (kilocycles)	Frequency tolerance	Type of emission	Modulation percentage (average of modulation percentages of positive and negative peaks)	Modulation frequency	Power output (into specified artificial antenna)	Artificial antenna
500.....	<i>Parts in 10<sup>6</sup></i> 5,000	A2	Not less than 70.	Not less than 450 nor greater than 1350 cycles per second.	Not less than 30 watts	10 ohms resistance and 100 picofarads capacitance.
8364.....	200	A2	do.....	do.....	Not less than 40 watts.	40 ohms resistance.

(2) The transmitter radio frequency and modulation frequency control circuits shall be pretuned to the required frequencies and shall be of such design and construction that the operating frequencies are maintained within the prescribed tolerances under varying voltages, antenna circuit characteristics, and other normal conditions of adjustment. The frequency control circuit adjustment(s) shall be securely locked to prevent detuning as a result of shock or vibration and shall not be readily available to the person using the transmitter.

(3) Controls shall be provided on the operating panel for efficient transfer of radio frequency energy at each required operating radio frequency to the required antenna. An initial adjustment of these controls shall effectively resonate the antenna circuit at each required operating radio frequency and this condition shall be maintained without further adjustment of these controls during

a normal operating period of the transmitter.

(4) Simple and reliable controls shall be provided so that the operator of the transmitter can quickly and conveniently place it in use for: Manual operation on 500 kc/s, manual operation on 8364 kc/s, and automatic operation alternately on these two frequencies; provided that not more than one manual switch adjustment shall be necessary to place the transmitter in operation for automatic transmission. For manual radiotelegraphy the transmitter and receiver, including their controls, shall be arranged mechanically and electrically so that they can be operated efficiently and conveniently from the same operating position for communication on the required operating frequencies and so that the time necessary to change from transmission to reception, and vice versa, on these frequencies is as short as possible and in no event more than two seconds.

For automatic operation provision shall be made as follows:

(i) On 500 kc/s for transmission of 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 kc/s for transmission of 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) For transmission of the specified signals by automatically changing the operating frequency of the transmitter from 500 kc/s to 8364 kc/s and vice versa with a transfer time interval not to exceed one second.

(iv) The speed of the automatic transmission of the international radiotelegraph distress signal shall be at a rate not in excess of 16 words per minute nor less than 8 words per minute. The alarm signal dashes shall 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 shall have a duration within the limits of 0.8 to 1.2 seconds.

(v) For testing the required automatic keying arrangement without the generation of radio frequency energy.

(5) The transmitter shall be equipped with a radio frequency ammeter of suitable range and scale, connected so as to indicate the current in the antenna circuit for each operating frequency.

(b) The receiver shall comply with the following requirements:

(1) The receiver shall, when used with headphones, be capable without manual tuning of receiving A2 emission over the band 492–508 kc/s, and shall be capable when manually tuned of receiving A1 and A2 emission on any frequency in the band 8320–8745 kc/s.

(2) The sensitivity of the receiver shall be such that at least 1 milliwatt of audio power is developed in a non-inductive load resistor having an ohmic value substantially equal to the value of the impedance of the head receiver at 1,000 cycles per second 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:

Frequency (kilo-cycles)	Signal strength (micro volts)	Modulation factor	Modulation frequency (cycles per second)	Artificial antenna
500.....	25	0.3	400	10 ohms resistance and 100 picofarads capacitance.
8364.....	100	.3	400	40 ohms resistance.

The noise power present in the output of the receiver when the receiver is adjusted for reception of type A2 emission on the frequencies 500 kc/s and 8364 kc/s shall be determined with an unmodulated input signal of the indicated strength.

(3) The selectivity of the receiver preceding the final detector shall be such that response uniform to within 6 db is obtained over the frequency range 492 to 508 kc/s.

(4) The audio frequency response of the receiver shall be electrically uniform to within 6 decibels over the range of frequencies between 400 and 1400 cycles per second.

(5) The receiver shall be equipped with only one manually operated volume control.

(6) The receiver shall be capable of developing a useful audio power for the purpose of the reception of type A2 emission of at least 6 milliwatts into the non-inductive load resistor prescribed in subparagraph (2) of this paragraph.

(c) The artificial antenna shall comply with the following requirements:

(1) The artificial antenna shall provide a reliable load for the transmitter for test purposes at the frequencies 500 kc/s and 8364 kc/s, of approximately the same electrical characteristics as the antenna required by paragraph (d) of § 83.469;

(2) The artificial antenna shall be housed in a single container and provided with appropriate terminals. If more than two terminals are provided on the artificial antenna, all the terminals shall be properly labeled.

## Subpart W—Violations

## § 83.601 Answers to notice of violation.

(a) Any person receiving official notice of a 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, shall, 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 shall be made at the earliest practicable date with a satisfactory explanation of the delay. The answer to each notice shall be complete in itself and shall not be abbreviated by references to other communications or answers to other notices. The answer shall contain a full explanation of the incident involved and shall set forth the action taken to prevent a continuation or recurrence thereof. If the notice relates to lack of attention to, or improper operation of the station, or to log or watch discrepancies, the answer shall 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 as issued by a representative of the Commission are at variance with the content of paragraph (a) of this section, then the instructions issued by the Commission's representative shall supersede those set forth in paragraph (a) of this section.

## § 83.602 Reports of infringements of the International Radio Regulations.

In the event that infringement of the International Radio Regulations by a foreign station is detected, report thereof may be made by the submission to the Commission of a form similar to that set forth in Appendix 7 to the International Radio Regulations.

## Subpart X—[Reserved]

## Subpart Y—Frequency Tables and Exemption Orders

## § 83.801 Tables of ship radiotelegraph frequencies from 2 Mc/s to 27.5 Mc/s.

(a) *Table 1a.* High traffic ship radiotelegraph working frequencies.

(b) *Table 1b.* Ship radiotelegraph calling frequencies.

(c) *Table 1c.* Low traffic ship radiotelegraph working frequencies.

(d) *Table 2.* Ship radiotelegraph frequency assignment plan.

(e) *Procedures and tables.* The following procedures and tables may be used in applying for license for the frequencies listed in Tables 1a, 1b, and 1c insofar as these frequencies are consistent with the provisions of this chapter. Frequencies, assigned in accordance with this section to a station on a particular vessel, may be retained at the option of the applicant despite subsequent relicensing of the station to a different licensee. Frequencies appearing in the tables may only be used in the manner and to the extent permitted elsewhere in this part.

(f) *Radiotelegraph, 2 Mc/s to 27.5 Mc/s.* The applicant must consult Table 2 to determine the frequency column symbols which are available for assignment. The frequencies designated by the symbols shown in Table 2 may be determined from Tables 1a, 1b, and 1c which list all of the frequencies in each series.

(g) *Calling frequencies.* Application may be made for one calling frequency column symbol from the "C" series, which represents one frequency in each of the 2, 4, 6, 8, 12, 16 and 22 Mc/s bands, for each ship. If more than one symbol of the "C" series is allocated for a particular licensee, the general principle to follow is to apply for the first vessel under the first symbol, the second symbol for the second vessel, etc., until the allocated symbols are exhausted. The procedure is then repeated, beginning again with the first symbol.

(h) *Low traffic ship working frequencies.* Application may be made for one low traffic working frequency symbol from the "L" series for each low traffic ship, which will include one frequency from the 2 Mc/s and two frequencies from the 4, 6, 8, 12, 16, and 22 Mc/s bands. A primary frequency to be used for work-

ing in each frequency band having two frequencies available must be indicated by suffixing the frequency symbol with the letter "A" for the lower frequency in each band and the letter "B" for the higher frequency in each band. If more than one symbol of the "L" series is allocated for a particular licensee, the frequency symbols, to include the suffix "A" or "B", should be applied for in rotation for successive vessels as for calling frequencies, otherwise either "A" or "B" may be applied for.

(i) *High traffic ship working frequencies.* High traffic ship working frequencies are normally available only to passenger ships but may be assigned to whaling factory vessels, tankers above 40,000 gross tons, and cargo ships above 12,500 gross tons in lieu of low traffic frequencies if a satisfactory showing is submitted indicating that the vessel concerned handles a large volume of traffic. Application may be made for the number of passenger ship working frequencies which, in the best judgment of the applicant, will be essential for the traffic volume of the particular vessel. Frequency column symbols shall be taken from the "H" series, with a minimum of two symbols: If more than two symbols of the "H" series are allocated for a particular licensee, the frequency symbols should be applied for in rotation for successive vessels as for calling frequencies, except that the first symbol for each vessel must be the one after the last of the series of two or more symbols of the previous vessel.

TABLE 1a—HIGH TRAFFIC SHIP RADIOTELEGRAPH WORKING FREQUENCIES (kc/s)

H1: 2080.5, 4161, 6241.5, 8322, 12474, 12478.5, 12483, 16626, 16632, 16638, 16644, 22151, 22157.

H2: 2081.25, 4162.5, 6243.75, 8325, 12474, 12478.5, 12487.5, 16626, 16632, 16638, 16650, 22151, 22163.  
 H3: 2082, 4164, 6246, 8328, 12474, 12478.5, 12492, 16626, 16632, 16638, 16688, 16690, 22151, 22169.  
 H4: 2082.75 4165.5, 6248.25, 8331, 12474, 12478.5, 12496.5, 16626, 16632, 16638, 16662, 22151, 22175.  
 H5: 2083.5, 4167, 6250.5, 8334, 12474, 12478.5, 12501, 16626, 16632, 16638, 16668, 22151, 22181.  
 H6: 2084.25, 4168.5, 6252.75, 8337, 12474, 12478.5, 12505.5, 16626, 16632, 16638, 16674, 22151, 22187.  
 H7: 2085, 4170, 6255, 8340, 12474, 12478.5, 12510, 16626, 16632, 16638, 16680, 22151, 22193.  
 H8: 2085.75, 4171.5, 6257.25, 8343, 12474, 12478.5, 12514.5, 16626, 16632, 16638, 16686, 22151, 22199.  
 H9: 2086.5, 4173, 6259.5, 8346, 12474, 12478.5, 12519, 16626, 16632, 16638, 16692, 22151, 22205.  
 H10: 2087.25, 4174.5, 6261.75, 8349, 12474, 12478.5, 12523.5, 16626, 16632, 16638, 16698, 22151, 22211.  
 H11: 2088, 4176, 6264, 8352, 12474, 12478.5, 12528, 16626, 16632, 16638, 16704, 22151, 22217.

TABLE 1b—SHIP RADIOTELEGRAPH CALLING FREQUENCIES (kc/s)

C1: 2089, 4178, 6267, 8356, 12534, 16712, 22225.  
 C2: 2089.5, 4179, 6268.5, 8358, 12537, 16716, 22230.  
 C3: 2090, 4180, 6270, 8360, 12540, 16720, 22235.  
 C4: 2090.5, 4181, 6271.5, 8362, 12543, 16724, 22240.  
 C5: 2091.  
 C6: 2091.5, 4183, 6274.5, 8366, 12549, 16732, 22250.  
 C7: 2092, 4184, 6276, 8368, 12552, 16736, 22255.  
 C8: 2092.5, 4185, 6277.5, 8370, 12555, 16740, 22260.  
 C9: 2093, 4186, 6279, 8372, 12558, 16744, 22265.

TABLE 1c—LOW TRAFFIC SHIP WORKING FREQUENCIES<sup>1</sup> (kc/s)

L1	2094	4188 4212.5	6282 6318.75	8376 8425	12564 12637.5	16752 16850	22272.5 22335
L2	2094.25	4188.5 4213	6282.75 6319.5	8377 8426	12565.5 12639	16754 16852	22272.5 22335
L3	2094.5	4189 4213.5	6283.5 6320.25	8378 8427	12567 12640.5	16756 16854	22275 22337.5
L4	2094.75	4189.5 4214	6284.25 6321	8379 8428	12568.5 12642	16758 16856	22275 22337.5
L5	2095	4190 4214.5	6285 6321.75	8380 8429	12570 12643.5	16760 16858	22277.5 22340
L6	2095.25	4190.5 4215	6285.75 6322.5	8381 8430	12571.5 12645	16762 16860	22277.5 22340
L7	2095.5	4191 4215.5	6286.5 6323.25	8382 8431	12573 12646.5	16764 16862	22280 22342.5

See footnote at end of table.

TABLE 1c—LOW TRAFFIC SHIP WORKING FREQUENCIES<sup>1</sup> (kc/s)—Continued

L8.....	2095.75	4191.5 4216	6287.25 6324	8383 8432	12574.5 12648	16766 16864	22280 22342.5
L9.....	2096	4192 4216.5	6288 6324.75	8384 8433	12576 12649.5	16768 16866	22282.5 22345
L10.....	2096.25	4192.5 4217	6288.75 6325.5	8385 8434	12577.5 12651	16770 16868	22282.5 22345
L11.....	2096.5	4193 4217.5	6289.5 6326.25	8386 8435	12579 12652.5	16772 16870	22285 22347.5
L12.....	2096.75	4193.5 4218	6290.25 6327	8387 8436	12580.5 12654	16774 16872	22285 22347.5
L13.....	2097	4194 4218.5	6291 6327.75	8388 8437	12582 12655.5	16776 16874	22287.5 22350
L14.....	2097.25	4194.5 4219	6291.75 6328.5	8389 8438	12583.5 12657	16778 16876	22287.5 22350
L15.....	2097.5	4195 4219.5	6292.5 6329.25	8390 8439	12585 12658.5	16780 16878	22290 22352.5
L16.....	2097.75	4195.5 4220	6293.25 6330	8391 8440	12586.5 12660	16782 16880	22290 22352.5
L17.....	2098	4196 4220.5	6294 6330.75	8392 8441	12588 12661.5	16784 16882	22292.5 22355
L18.....	2098.25	4196.5 4221	6294.75 6331.5	8393 8442	12589.5 12663	16786 16884	22292.5 22355
L19.....	2098.5	4197 4221.5	6295.5 6332.25	8394 8443	12591 12664.5	16788 16886	22295 22357.5
L20.....	2098.75	4197.5 4222	6296.25 6333	8395 8444	12592.5 12666	16790 16888	22295 22357.5
L21.....	2099	4198 4222.5	6297 6333.75	8396 8445	12594 12667.5	16792 16890	22297.5 22360
L22.....	2099.25	4198.5 4223	6297.75 6334.5	8397 8446	12595.5 12669	16794 16892	22297.5 22360
L23.....	2099.5	4199 4223.5	6298.5 6335.25	8398 8447	12597 12670.5	16796 16894	22300 22362.5
L24.....	2099.75	4199.5 4224	6299.25 6336	8399 8448	12598.5 12672	16798 16896	22300 22362.5
L25.....	2100	4200 4224.5	6300 6336.75	8400 8449	12600 12673.5	16800 16898	22302.5 22365
L26.....	2100.25	4200.5 4225	6300.75 6337.5	8401 8450	12601.5 12675	16802 16900	22302.5 22365
L27.....	2100.5	4201 4225.5	6301.5 6338.25	8402 8451	12603 12676.5	16804 16902	22305 22367.5
L28.....	2100.75	4201.5 4226	6302.25 6339	8403 8452	12604.5 12678	16806 16904	22305 22367.5
L29.....	2101	4202 4226.5	6303 6339.75	8404 8453	12606 12679.5	16808 16906	22307.5 22370
L30.....	2101.25	4202.5 4227	6303.75 6340.5	8405 8454	12607.5 12681	16810 16908	22307.5 22370
L31.....	2101.5	4203 4227.5	6304.5 6341.25	8406 8455	12609 12682.5	16812 16910	22310 22372.5
L32.....	2101.75	4203.5 4228	6305.25 6342	8407 8456	12610.5 12684	16814 16912	22310 22372.5
L33.....	2102	4204 4228.5	6306 6342.75	8408 8457	12612 12685.5	16816 16914	22312.5 22375
L34.....	2102.25	4204.5 4229	6306.75 6343.5	8409 8458	12613.5 12687	16818 16916	22312.5 22375

See footnote at end of table.

TABLE 1c—LOW TRAFFIC SHIP WORKING FREQUENCIES<sup>1</sup> (kc/s)—Continued

L35-----	2102.5	4205 4229.5	6307.5 6344.25	8410 8459	12615 12688.5	16820 16918	22315 22377.5
L36-----	2102.75	4205.5 4230	6308.25 6345	8411 8460	12616.5 12690	16822 16920	22315 22377.5
L37-----	2103	4206 4230.5	6309 6345.75	8412 8461	12618 12691.5	16824 16922	22317.5 22380
L38-----	2103.25	4206.5 4231	6309.75 6346.5	8413 8462	12619.5 12693	16826 16924	22317.5 22380
L39-----	2103.5	4207 4231.5	6310.5 6347.25	8414 8463	12621 12694.5	16828 16926	22320 22382.5
L40-----	2103.75	4207.5 4232	6311.25 6348	8415 8464	12622.5 12696	16830 16928	22320 22382.5
L41-----	2104	4208 4232.5	6312 6348.75	8416 8465	12624 12697.5	16832 16930	22322.5 22385
L42-----	2104.25	4208.5 4233	6312.75 6349.5	8417 8466	12625.5 12699	16834 16932	22322.5 22385
L43-----	2104.5	4209 4233.5	6313.5 6350.25	8418 8467	12627 12700.5	16836 16934	22325 22387.5
L44-----	2104.75	4209.5 4234	6314.25 6351	8419 8468	12628.5 12702	16838 16936	22325 22387.5
L45-----	2105	4210 4234.5	6315 6351.75	8420 8469	12630 12703.5	16840 16938	22327.5 22390
L46-----	2105.25	4210.5 4235	6315.75 6352.5	8421 8470	12631.5 12705	16842 16940	22327.5 22390
L47-----	2105.5	4211 4235.5	6316.5 6353.25	8422 8471	12633 12706.5	16844 16942	22330 22392.5
L48-----	2105.75	4211.5 4236	6317.25 6354	8423 8472	12634.5 12708	16846 16944	22330 22392.5
L49-----	2106	4212 4236.5	6318 6354.75	8424 8473	12636 12709.5	16848 16946	22332.5 22395

<sup>1</sup> The frequency symbols are suffixed by the letters "A" or "B" to indicate the primary working frequency in each band. [See §§ 83.324(e) and 83.701(h).]

TABLE 2—SHIP RADIOTELEGRAPH FREQUENCY PLAN

[For columns of frequencies designated by these symbols, see tables 1a, 1b, and 1c]

	Calling frequency column symbols	High traffic ship working frequency column symbols	Low traffic ship working frequency column symbols
RCA Communications, Inc.-----	C3, C5, C7, C9	H1, H3, H5, H7, H9	L1, L3, L5, L7, L9, L11, L13, L15, L17, L19, L21, L23, L25, L27, L29, L31, L33, L35, L37, L39, L41, L43, L45, L47, L2, L6, L8, L10, L14, L18, L20, L24, L28, L32, L34, L36, L40, L42, L48, L49
Mackay Radio & Telegraph Co., Inc.	C2, C4, C5, C6	H4, H6, H8, H10	
Tropical Radio Telegraph Co.-----	C1, C5, C8	H2, H11	L4
Matson Navigation Co.-----	do	do	L12
Globe Wireless Co.-----	do	H4, H6, H8, H10	L16
Other applicants: <sup>1</sup>			
A-C-----	do	H2, H11	L22
D-L-----	do	do	L26
M-----	do	do	L30
N-R-----	do	do	L38
S-----	do	do	L44
T-Z-----	do	do	L46

<sup>1</sup> Applicants other than the companies listed must apply for the frequency column symbols shown, in alphabetic groups according to the first letter of their name. As an example, if the applicant's name begins with A, B, or C, he may apply only for frequency column symbols C1, C5, or C8, H2, and H11 for a high traffic ship, or C1, C5, or C8 and L22 for a low traffic ship. For this purpose, the alphabetic group of first letters of the name will be selected by using the first word of a trade name omitting "The"; the last name of a personal name; or the last name of the first person appearing in a series of personal names. As examples, the following names would all apply for the third, or "M", group: Marine Communications, Inc.; A. B. Miller and Co.; C. D. Muncey; E. F. Murphy, Alfred Abrams, et al.

**§ 83.803 General exemption orders issued exempting ships from compulsory radio provisions.**

(a) Order, May 8, 1957, granting exemption, pursuant to section 352(b)(3) of the Communications Act of 1934, as amended, to all United States passenger vessels of less than 100 gross tons, not subject to the radio provisions of the Safety Convention, from the radiotelegraph provisions of Title III, Part II of the Communications Act of 1934, as amended: *Provided*, That the vessels are equipped with a radiotelephone installation fully complying with the provisions of Part III of Title III of the Communications Act of 1934, as amended, and the Commission's rules and regulations made pursuant thereto including the requirements with respect to certificates, operators, and listening watches: *And provided further*, That during the course of the voyages the vessels are not navigated more than 50 nautical miles from the nearest land.

(b) Order, April 8, 1959, granting exemption pursuant to section 383 of the Communications Act of 1934, as amended, to all United States vessels subject to Title III, Part III of said Act which are of less than 50 gross tons and are navigated not more than 1,000 feet from the nearest land at mean low tide in the coastal waters and tidewaters of the Gulf of Mexico in the area between the Rio Grande River and Cape Sable, East Cape, Florida, from the provisions of Title III, Part III of the Communications Act of 1934, as amended.

(c) These exemptions may be terminated at any time without hearing if, in the Commission's discretion, the need for such action arises.

**PART 85—PUBLIC FIXED STATIONS AND STATIONS OF THE MARITIME SERVICES IN ALASKA**

NOTE: See Commission Order (FCC 61-1492) of Dec. 20, 1961, 26 F.R. 12519, Dec. 27, 1961, providing for the modification of licenses of coast and ship stations in Alaska and on the Mississippi River by the addition of certain frequencies. The general authorization shall be for a period which shall extend from December 22, 1961, until termination of the present license authority, of coast and ship stations affected, by the issuance of a modified or renewal license in response to an application therefor. All provisions in Part 85 which are inconsistent with the above authorization are hereby waived for the period specified.

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