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NVIC 3-99

NAVIGATION AND VESSEL INSPECTION CIRCULAR NO. 3-99

Subj: GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS) AND EMERGENCY POSITION INDICATING RADIOBEACON (EPIRB) EQUIPMENT REQUIREMENTS FOR COMMERCIAL VESSELS

- Ref:** (a) November 1988 Amendments to the 1974 Safety of Life at Sea (SOLAS) Convention
 (b) Federal Communications Commission (FCC) Regulations on GMDSS (47 CFR Part 80, Subpart W, as amended)
 (c) Coast Guard Regulations on Lifesaving Equipment and Arrangements (46 CFR Part 199)

1. PURPOSE. This Circular provides guidance on GMDSS equipment requirements for all GMDSS applicable vessels by the final implementation date of February 1, 1999, and is applicable to both U.S. and non-U.S. flagged vessels. The information in this Circular reflects the final phase-in for GMDSS, and summarizes EPIRB requirements that are now published in Coast Guard and FCC regulations. Only EPIRB requirements are summarized for non-GMDSS applicable vessels; communication requirements not covered by GMDSS are not explained in this Circular.

2. DIRECTIVES AFFECTED. NVIC 9-93 is cancelled.

3. DISCUSSION.

- a. The November, 1988 SOLAS Amendments (reference (a)), established international requirements for GMDSS. GMDSS is a worldwide, marine radio communications system based on satellite communications, digital data transfer, and other modern communications technologies. The final regulations to implement GMDSS for U.S. registered vessels were published by the FCC in 1992 (reference (b)).

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- b. Coast Guard and FCC regulations formerly overlapped in the area of radio lifesaving equipment, and consequently contained conflicting regulations. With the re-write of Coast Guard regulations in the last few years, and the publishing of a new Subchapter W (reference (c)), the only current, overlapping radio lifesaving equipment requirement in both the FCC and CG regulations concerns the carriage of EPIRBs.
 - c. This Circular is not intended to address FCC required radio installations on U.S. flagged vessels, other than GMDSS equipment (reference (b)). FCC regulations for other required radio installations can be found in 47 CFR Part 80, and more information on these regulations can be found on the FCC's Compliance and Information Bureau website at:

<http://www.fcc.gov/cib/>
 - d. The information contained in this circular does not apply to non-U.S. flagged fishing vessels, because SOLAS regulations do not apply to commercial fishing vessels. Non-U.S. flagged fish processing or fish tender vessels are considered cargo ships by SOLAS, and must comply with GMDSS.
 - e. In the U.S., the FCC has treated commercial fishing vessels as cargo vessels for the purpose of FCC regulations, because the Communications Act only differentiates between vessels that carry passengers, and those that don't. Because the FCC has been urged to revisit the applicability of GMDSS to fishing vessels, a temporary, conditional waiver has been granted to fishing and fish processing vessels. The equipment described in Tables 4 or 5 of Enclosure (3) is required in lieu of the complete GMDSS requirements that are described in Table 1 of Enclosure (3). U.S. flag fish tender vessels were not specified in the temporary, conditional waiver. Therefore, U.S. flag fish tender vessels, 300 GT and over, must either equip their vessels with the equipment described in Table 1 of Enclosure (3), or request an individual FCC exemption. With some exceptions, the FCC will likely require these vessels to carry the same equipment as fishing and fish processing vessels.
 - f. Non self-propelled MODUs will not be required to install GMDSS equipment on their vessels. However, any vessel owner that requests an IMO MODU Code Certificate for a voyage to a signatory country, will be responsible for installing all communications equipment required by the Code prior to receiving a Certificate.
4. **IMPLEMENTATION.** This Circular is effective on the final date of the international GMDSS implementation, February 1, 1999. U.S. and non-U.S. flagged vessels may have exemptions for GMDSS, EPIRB, or other radio equipment which are still valid. These vessels will not be required to carry GMDSS, EPIRB, or other radio equipment that has been specifically exempted by the FCC, USCG, or a non-U.S. flag Administration, as applicable. Enclosures (1) through (3) provide definitions of GMDSS terms, a ship finding aids table and specific ship requirements for GMDSS and EPIRBs.

5. ACTION.

- a. OCMI's shall ensure that EPIRB or GMDSS required equipment is properly installed aboard U.S. flag vessels when performing flag State responsibilities, such as inspections for certification or voluntary dockside examinations. Operational testing of GMDSS equipment is not the responsibility of the Coast Guard. The technical adequacy of the radio installation, the suitability of electrical wiring to interconnect radio components, and the proper maintenance and efficient operation of the equipment are determined by the FCC. The suitability of power leads from the main power supply to the main GMDSS installation is the responsibility of the Coast Guard.
- b. It is expected that a large number of vessels from 300 GT to 1600 GT will not have complete GMDSS installations prior to February 1, 1999. There is also a strong possibility that manufacturers will not have the equipment or technicians available to install the equipment before this date, if the vessel owner has not already begun the installation process. After February 1, 1999, applicable vessels must have a current Radiotelephony Certificate, which certifies that the vessel is GMDSS compliant, or an FCC exemption to remain in compliance. Vessel operators may direct requests for FCC emergency exemptions or extensions to the appropriate FCC field office, and the addresses of these offices can be found by following the link in paragraph 3.c to the FCC's Compliance and Information Bureau website. Requests for long term exemptions should be directed to the FCC's Wireless Telecommunications Bureau.
- c. Non-U.S. flag vessels with GMDSS equipment deficiencies, and with no flag State authorized exemption or extension, shall be required to have the equipment installed prior to the vessel's next U.S. port call, or May 1, 1999, whichever is earlier (1 trip extension). Short term extensions issued by the Flag State to the vessel for the installation of GMDSS equipment will be accepted in the U.S. until May 1, 1999. This extension will not apply to EPIRBs. All non-U.S. flag vessels that are missing a required EPIRB shall be detained until the EPIRB is installed. Boarding officers will not require GMDSS equipment testing during routine Port State Control exams. In the future, the vessel targeting matrix will recognize vessels with high false alert transmissions, and properly trained personnel will augment boarding teams to perform STCW competency exams.
- d. The Commercial Fishing Vessel Safety (CFVS) Program has provided a number of EPIRB test kits to selected Marine Safety Offices (MSOs) throughout the country. These EPIRB test kits will be used to operationally test EPIRBs during voluntary dockside examinations of commercial fishing vessels, as well as during various education and outreach efforts. If this program is successful with the commercial fishing industry, EPIRB testing may be expanded to other, inspected and uninspected, U.S. flag commercial vessels at a later date. Currently, the use of EPIRB test kits on non-U.S. flag vessels is prohibited.

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- e. The C.G. does not have the authority to grant extensions or waivers, nor issue CG-835s for GMDSS deficiencies found on U.S. flag vessels, as these are FCC regulations. COIs should not be issued or endorsed unless a vessel is in compliance with FCC regulations. Small Passenger Vessels may be restricted to domestic voyages, until compliance with the requirements of this Circular can be demonstrated. U. S. flag commercial fishing vessels shall not be issued CFVS decals, and fish processing vessels and fish tender vessels shall not be issued certificates of compliance, if such vessels do not meet the radio lifesaving equipment requirements of this Circular.

R. C. NORTH
Rear Admiral, U. S. Coast Guard
Assistant Commandant for Marine Safety and
Environmental Protection

Encl: (1) Definitions and Acronyms table
(2) Applicable Ship Finding Aids
(3) GMDSS and EPIRB ship requirements

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Definitions and Acronyms table

Cargo ship: A commercial vessel propelled by machinery and not carrying passengers for hire. A U.S. flag, Offshore Supply Vessel that carries no more than 36 offshore workers on domestic voyages, or no more than 12 offshore workers on international voyages, is considered a cargo ship. See below definitions for fishing, fish processing, and fish tender vessels for applicability with the requirements of this Circular.

DSC: Digital Selective Calling. A technique using digital codes which enables a radio station to establish contact with, and transfer information to, another station or group of stations.

EPIRB: Emergency Position Indicating Radio Beacon.

FCC: Federal Communications Commission.

Fishing Vessel: A vessel that commercially engages in the catching, taking or harvesting of fish, or an activity that can reasonably be expected to result in the catching, taking or harvesting of fish. See tables 4 or 5 (U.S. flag only).

Fish Processing Vessel: A vessel that commercially prepares fish or fish products other than by gutting, decapitating, gilling, skinning, shucking, icing, freezing, or brine chilling. See tables 4 or 5 (U.S. flag), or tables 1 or 3 (foreign flag).

Fish Tender Vessel: A vessel that commercially supplies, stores, refrigerates, or transports fish, fish products, or materials directly related to fishing or the preparation of fish to or from a fishing, fish processing or fish tender vessel or a fish processing facility. See tables 1 or 4 (U.S. flag), or tables 1 or 3 (foreign flag).

GMDSS: Global Maritime Distress and Safety System.

INMARSAT: International Mobile Satellite Organization. Three types of ship-earth station terminals (INMARSAT A, B and C), recognized by GMDSS, and that provide satellite communication services.

MODU: Mobile Offshore Drilling Unit. A vessel capable of engaging in drilling operations for the exploration or exploitation of subsea resources.

NAVTEX: International, automated system for distributing maritime navigational warnings, weather forecasts and warnings, search and rescue notices and similar information to ships.

Non self-propelled MODU: A vessel capable of engaging in drilling operations for the exploration or exploitation of subsea resources, and not equipped with propulsion machinery that provides for independent underway navigation.

Definitions and Acronyms table (continued)

Offshore Worker: Refer to 46 CFR 125.160.

* Passenger Ship: A U.S. flag vessel 100 GT and over carrying more than 12 passengers (see 46 CFR 70.10-35), or a foreign flag vessel of any size carrying more than 12 passengers.

Passenger: Refer to 46 CFR 70.10-34, 114.400, or 175.400, as appropriate.

SART: Search and Rescue Transponder. A radar transponder that assists rescuing vessels and aircraft locate distressed vessels by transmitting a radar signal that creates a series of dots on a rescue craft's radar, identifying a distressed vessel's location.

Sea Area A1: Within range of VHF coast stations in which DSC is continuously available (about 20 NM to 30 NM from shore). As of February 1, 1999, Sea Area A1 has not been established in the U.S.

Sea Area A2: Beyond Sea Area A1, but within range of MF coastal stations in which DSC is continuously available (about 100 NM from shore). As of February 1, 1999, Sea Area A2 has not been established in the U.S.

Sea Area A3: Beyond Areas A1 and A2, but within INMARSAT coverage areas. This covers the area between roughly 70 degrees latitude north and 70 degrees latitude south.

Sea Area A4: The remaining sea areas (polar regions).

Small Passenger Vessel: A U.S. flag vessel less than 100 GT and carrying more than 6 passengers or offshore workers (46 CFR Subchapters T and K).

SOLAS: International Convention for the Safety of Life at Sea, 1974, and current amendments.

U.S. uninspected commercial vessels: Self-propelled vessel engaged in commercial operations, and not required to be inspected under any of the applicable subchapters under Title 46, Code of Federal Regulations (includes fishing, fish processing, and fish tender vessels less than 300 GT).

* For the purpose of the Communications Act, the FCC defines a U.S. flag passenger ship as: Any ship that carries more than 12 passengers on a voyage on the open sea.

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Ship Finding Aids

U. S. Flag Vessels Applicable Table in Encl (3)

Cargo Ships, 300 GT and over	1
Cargo Ships, Great Lakes voyages	3
Cargo Ships, < 300 GT	3
Self-propelled MODU, 300 GT and over	1
Self-propelled MODU, < 300 GT	No requirement
Non self-propelled MODU	No requirement
Passenger Ships	1
Passenger Ships, Great Lakes voyages	3
Small Passenger vsls > 12 pass, unrestricted int'l voyages	1
Small Passenger vsls > 12 pass, restricted int'l voyages	2
Small Passenger vsls, domestic voyages	3
Small Passenger vsls ≤ 12 pass, int'l voyages	3
Uninspected commercial vsls, Great Lakes voyages	4
Uninspected commercial vsls < 300 GT, ocean voyages	4
Fishing vsls < 300 GT	4
Fishing vsls, 300 GT and over	5
Fish Processing vsls < 300 GT	4
Fish Processing vsls, 300 GT and over	5
Fish Tender vsls < 300 GT	4
Fish Tender vsls, 300 GT and over	1

Non U. S. Flag Vessels

Cargo Ships, 300 GT and over	1
Cargo Ships, < 300 GT	3
Self-propelled MODU, 300 GT and over	1
Self-propelled MODU, < 300 GT	No requirement
Non self-propelled MODU	No requirement
Passenger Ships	1
Passenger Ships, < 100 GT, restricted int'l voyages	2
Fishing vsls	No requirement
Fish Processing vsls < 300 GT	3
Fish Processing vsls, 300 GT and over	1

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Fish Tender vsls < 300 GT	3
Fish Tender vsls, 300 GT and over	1

Table 1. GMDSS EQUIPMENT REQUIREMENTS FOR THE FOLLOWING U.S. AND FOREIGN FLAGGED VESSELS:

- SMALL PASSENGER VESSELS CARRYING MORE THAN 12 PASSENGERS ON UNRESTRICTED INT'L VOYAGES (U.S. FLAG);
- ALL PASSENGER SHIPS ON OCEAN, COASTWISE, OR INT'L VOYAGES (**See Note #1**) (U.S. AND FOREIGN FLAG);
- ALL CARGO SHIPS 300 GT AND OVER (U.S. FLAG, OCEAN/COASTWISE VOYAGES, AND FOREIGN FLAG);
- ALL SELF-PROPELLED MODUS 300 GT AND OVER (U.S. AND FOREIGN FLAG); AND
- FISH TENDER VESSELS (U.S. AND FOREIGN FLAG), AND FISH PROCESSING VESSELS (FOREIGN FLAG) 300 GT AND OVER.

Ship EPIRB	Satellite EPIRB capable of transmitting a distress alert in the 406 MHz Band (47 CFR 80.1085/SOLAS Ch IV/Reg 7).
Survival Craft EPIRBs	No requirement: However, the Coast Guard recommends that vessels carry Class B or Category 2 EPIRBs in survival craft.
SART (Note #2)	Two, 9 GHz radar transponders (one on each side of the vessel, ready to be taken to survival craft)(SOLAS Ch III/Reg 6.2.2).
Survival Craft Radiotelephones (Note #3)	Three transceivers that operate on VHF channel 16 (156.8 MHz) and one other channel (channel 6 recommended). A transceiver permanently installed in a survival craft may count toward this requirement (47 CFR 80.1095 and SOLAS Ch III/Reg 6.2.1.1).
VHF Installation	(1) A transceiver capable of operating on VHF channels 6 (156.3 MHz), 13 (156.65 MHz) and 16 (156.8 MHz). (2) Capability to maintain continuous DSC watch, and transmit on, VHF channel 70; (3) Capability to initiate DSC distress alert transmissions. (47 CFR 80.1085 and SOLAS Ch IV/Reg 7)
MF/HF Installation (Note #4)	Transceivers capable of operating on: (1) 2182 kHz using radiotelephony; and (2) 2187.5 kHz using DSC; and all distress and safety frequencies using radiotelephony or radiotelegraphy between 1605-27,500 kHz (47 CFR 80.1091 and SOLAS Ch IV/Reg 9)
NAVTEX	One NAVTEX receiver required. If service is not available, vessel must have INMARSAT enhanced group calling system, or HF direct printing telegraphy.

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(47 CFR 80.1085 and SOLAS Ch IV/Reg 7)

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INMARSAT (Notes #5 and #6) One INMARSAT ship earth station capable of transmitting and receiving distress and safety telegraphy, initiating and receiving distress priority calls, maintaining watch for shore to ship distress alerts, and transmitting and receiving general radio communications by radiotelephony or telegraphy.
(47 CFR 80.1085 and SOLAS Ch IV/Reg 7)

MAINTENANCE Ships must have a combination of 2 of the following 3 maintenance methods:
(U.S. flagged vessels operating within 100 NM from shore may be exempted by the FCC from A3 maintenance requirements)

1. Duplicate equipment
2. Shore based maintenance
3. At Sea maintenance

(U.S. Flag – The National Maritime Center will be publishing further policy guidance on GMDSS mariner certification requirements)

(Foreign Flag - At least one person in the crew must have documents that authorizes the person to maintain GMDSS equipment. This may be an STCW certificate endorsement.)

OPERATORS 2 GMDSS operators
(U.S. Flag – The National Maritime Center will be publishing further policy guidance on GMDSS mariner certification requirements)
(Foreign Flag – Until February 1, 2002, radio certificates or licenses that qualifies them to operate GMDSS equipment)

Note #1: U.S. flagged passenger vessels on voyages less than 20 NM from land or, alternatively, do not go more than 200 NM between consecutive ports, may receive individual exemptions from certain GMDSS requirements from the FCC (47 USC 352).

Note #2: Cargo ships/MODU's $\geq 300 < 500$ GT are only required to carry one, 9 GHz radar transponder (47 CFR 80.1085 and SOLAS CH IV/Reg 7)

Note #3: Cargo ships/MODU's $\geq 300 < 500$ GT are only required to carry two VHF transceivers.

Note #4: Ships without INMARSAT must have MF/HF DSC watch receivers with the capability of receiving frequencies 2187.50 kHz and 8414.5 kHz, and at least one other HF DSC frequency (4207.5, 6312, 12,577 or 16,804.5 kHz).

Note #5: Once the U.S. has declared A1 and A2 capability, ships engaged exclusively in Sea Areas A1 and A2 will not be required to carry INMARSAT.

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Note #6: In lieu of INMARSAT, ships may carry a HF direct printing safety broadcast receiver. This equipment is also known as NBDP (Narrow Band Direct Printing) or SITOR (Simplex Teletype over Radio).

Table 2. GMDSS EQUIPMENT REQUIREMENTS FOR THE FOLLOWING U.S. AND FOREIGN FLAGGED VESSELS:

- SMALL PASSENGER VESSELS CARRYING MORE THAN 12 PASSENGERS ON RESTRICTED (See Notes #7 & 8) INT'L VOYAGES (U.S. FLAG);
- PASSENGER VESSELS LESS THAN 100 GT ON RESTRICTED INT'L VOYAGES (See Note #7) (FOREIGN FLAG)

Ship EPIRB	Satellite EPIRB capable of transmitting a distress alert in the 406 MHz Band (When navigating more than 3 miles from nearest land).
VHF Installation	U.S. Flag - Radiotelephone installation that meets Subpart S of 47 CFR Part 80 Foreign Flag - A transceiver capable of operating on VHF channels 6 (156.3 MHz), 13 (156.65 MHz) and 16 (156.8 MHz).
SART	Two, 9 GHz radar transponders (one on each side of the vessel, ready to be taken to survival craft)
Survival Craft Radiotelephones	Three transceivers that operate on VHF channel 16 (156.8 MHz) and one other channel (channel 6 recommended). A transceiver permanently installed in a survival craft may count toward this requirement.
NAVTEX	One NAVTEX receiver required.
MF Installation (Note #8)	Transceiver capable of operating on all distress and safety frequencies using radiotelephony between 1605-2850 kHz.

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Note #7: For U.S. flag vessels, the FCC has granted general exemptions from GMDSS requirements (extended by FCC order FCC 98-296, adopted November 6, 1998) to small passenger vessels on restricted int'l voyages (47 CFR 80.933) that are described below. Table 2 represents the equipment that is required with the general exemption. Foreign flagged vessels of equivalent size, and engaged on similar voyages to that of a U.S. flag vessel exempted under 47 CFR 80.933, will not be required to carry any more equipment than the similarly exempted U.S. flagged vessel. The following are the operating restrictions for a U.S. flag small passenger vessel to be eligible for the general exemption:

- a. The ship remains within communications range of U.S. Coast Guard or public coast stations operating in the band 156-162 MHz;
- b. The routes of the voyage are never more than 20 NM from the nearest land or, alternatively, not more than 200 NM between two consecutive ports, and are limited to the following int'l voyages:
 - (1) In waters contiguous to the Bahama Islands and the islands in the Caribbean Sea, including the Greater Antilles, Lesser Antilles, and the coastal waters of Venezuela between the Mouth of the Orinoco River and the Gulf of Venezuela;
 - (2) In waters contiguous to the coast of Southern California from Point Conception south to Cape San Lucas, Mexico; the islands of San Miguel, Santa Rosa, Santa Cruz, Anaxcopa, San Nicolas, Santa Barbara, Santa Catalina, and San Clemente are considered to be within these waters; and
 - (3) In waters of the Pacific Northwest between Tacoma, Washington and the waters of British Columbia, Canada, as far north as Queen Charlotte Strait, never in open sea.

Note #8: A vessel that engages in voyages no more than 20 NM from the nearest land or, alternatively, not more than 100 NM between two consecutive ports, and is limited to int'l voyages between Florida and the Bahama Islands must carry this additional MF radio equipment.

Table 3. EPIRB REQUIREMENTS FOR THE FOLLOWING U.S. AND FOREIGN FLAGGED VESSELS (See 47 CFR Part 80 for required radio installation requirements):

- SMALL PASSENGER VESSELS ON DOMESTIC OCEAN VOYAGES (**See Note #9**) (U.S. FLAG);
- SMALL PASSENGER VESSELS ON GREAT LAKES VOYAGES (**Note #9**) (U.S. FLAG);
- PASSENGER VESSELS ON GREAT LAKES VOYAGES (**Note #9**) (U.S. FLAG);
- CARGO SHIPS IN GREAT LAKES SERVICE (**Note #9**) (U.S. FLAG);
- CARGO SHIPS LESS THAN 300 GT ON OCEAN OR COASTWISE VOYAGES (U.S. AND FOREIGN FLAG – **Note #10**);
- FISH TENDER VESSELS AND FISH PROCESSING VESSELS (FOREIGN FLAG) LESS THAN 300 GT.

Ship EPIRB Category 1, automatic float free, Satellite EPIRB capable of transmitting a distress alert in the 406 MHz Band.
(46 CFR 117.64, 133.60, 180.64, and 199.510)

Note #9: Small passenger vessels operating on the high seas or more than 3 miles from land on Great lakes voyages must carry the EPIRB. Passenger vessels and cargo ships on Great Lakes voyages must carry an EPIRB if engaging on voyages more than 3 miles from land (46 CFR 199.610(a)).

Note #10: As of February 1, 1999, all vessels subject to the Code of Safety for Caribbean Cargo Ships (CCSS Code), and all U.S. flagged cargo vessels under 300 GT on voyages more than 3 miles from land, must have a Cat 1, Satellite EPIRB. Therefore, all other foreign flagged cargo ships less than 300 GT, on voyages more than 3 miles from land, must have a Cat 1, Satellite EPIRB in order to protect the crew from unreasonable harm (IMO Resolution A.787(19), Ch I, sec 1.5.2).

Table 4. EPIRB REQUIREMENTS FOR THE FOLLOWING U.S. FLAGGED VESSELS (See 47 CFR Part 80 for required radio installation requirements)(**See Note #11**):

- UNINSPECTED COMMERCIAL VESSELS ON GREAT LAKES VOYAGES (MORE THAN 3 NM FROM LAND);
- UNINSPECTED COMMERCIAL VESSELS LESS THAN 300 GT OPERATING ON OCEAN WATERS (MORE THAN 3 NM FROM LAND);

Ship EPIRB (> 3NM from land) Category 1, automatic float free, Satellite EPIRB capable of transmitting a distress alert in the 406 MHz Band. (46 CFR 25.26)

Ship EPIRB (See Note #12) Category 2 (manual), Satellite EPIRB capable of transmitting a distress alert in the 406 MHz Band.

Note #11: Does not include uninspected passenger vessels (6 packs), nor non-emergency assistance vessels (assistance towing).

Note #12: For vessel < 11M (36 ft) in length – OR – For vessel’s with a builder’s certification that the vessel is constructed with sufficient inherently buoyant material to keep the vessel afloat when flooded.

Table 5. RADIO LIFESAVING EQUIPMENT REQUIREMENTS FOR THE FOLLOWING U.S. FLAGGED VESSELS (WITH FCC WAIVER):

- ALL FISHING AND FISH PROCESSING VESSELS, 300 GT AND OVER (U.S. FLAG) (**Note #15**).

Ship EPIRB	Satellite EPIRB capable of transmitting a distress alert in the 406 MHz Band (47 CFR 80.1085(a)(6)).
Survival Craft EPIRBs	No requirement: However, the Coast Guard recommends that vessels carry Class B or Category 2 EPIRBs in survival craft.
SART (Note #13)	Two, 9 GHz radar transponders (one on each side of the vessel, ready to be taken to survival craft)(47 CFR 1095).
Survival Craft Radiotelephones (Note #14)	Three transceivers that operate on VHF channel 16 (156.8 MHz) and one other channel (channel 6 recommended). A transceiver permanently installed in a survival craft may count toward this requirement (47 CFR 80.1095).
VHF Installation	A transceiver capable of operating on VHF channels 6 (156.3 MHz), 13 (156.65 MHz) and 16 (156.8 MHz).
MF Installation	A transceiver capable of operating on 2182 kHz and two other frequencies between 1605-3500 kHz. (47 CFR 80.855)
NAVTEX	One NAVTEX receiver required. (47 CFR 80.1085(a)(4))

Note #13: Fishing vessels $\geq 300 < 500$ GT are only required to carry one, 9 GHz radar transponder (47 CFR 80.1085).

Note #14: Fishing vessels $\geq 300 < 500$ GT are only required to carry two VHF transceivers.

Note #15: Fishing and Fish Processing Vessels, 1600 GT and over, shall have radiotelegraph installations and radio officers, or FCC exemptions. As of February 1, 1999, all of these vessels have been exempted from this requirement by the FCC.