

GREAT LAKES VESSEL INSPECTION CHECKLIST

HOW TO CONDUCT A GREAT LAKES VESSEL INSPECTION OF US FLAGGED VESSELS

By definition, small passenger vessels are vessels that are less than 100 gross tons and carry more than six passengers for hire. A “passenger for hire” is defined as a person who pays money or any other kind of material goods or services as compensation for being carried on a vessel.

Small passenger vessels that sail on the Great Lakes must meet the radio carriage requirements of the Great Lakes Agreement. This is a treaty between the United States and Canada governing radio carriage requirements for ships navigating on the Great Lakes¹. Those rules are contained in Subpart T of Part 80 of FCC Rules, Sections 80.951 through 80.971. The U.S. Coast Guard also requires carriage of an EPIRB compliant with current regulations if the vessel sails more than 3 miles from shore on the Great Lakes.

47 CFR Part 80.951 - Applicability

The agreement between the United States of America and Canada for the Promotion of Safety on the Great Lakes by Means of Radio, 1973, (“Great Lakes Radio Agreement”) applies to vessels of all countries when navigated on the Great Lakes. The Great Lakes Radio Agreement defines the Great Lakes as “all water of Lakes Ontario, Erie, Huron (including Georgian Bay), Michigan, Superior, their connecting and tributary waters and the River St. Lawrence as far east as the lower exit of the St. Lambert Lock at Montreal in the Province of Quebec, Canada,” but does not include such of the connecting and tributary waters as may be specified in the Technical Regulations. The Technical Regulations do not include any connecting and tributary water except the St. Mary’s River, the St. Clair River, Lake St Clair, the Detroit River and the Welland Canal. A vessel to which the Great Lakes Radio Agreement applies and which falls into the specific categories listed in paragraph (a), (b) or (c) of this section and not otherwise exempted must comply with this subpart while navigated on the Great Lakes.

- (a) Every vessel 20 meters (65 feet) or over in length (measured from end to end over the deck, exclusive of sheer).

- (b) Every vessel engaged in towing another vessel or floating object, except:
 - (1) Where the maximum length of the towing vessel, measured from end to end over the deck exclusive of sheer, is less than 8 meters (26 feet) and the length or breadth of the tow, exclusive of the towing line, is less than 20 meters (65 feet);
 - (2) Where the vessel towed complies with this subpart;
 - (3) Where the towing vessel and tow are located within a booming ground (an area in which logs are confined); or
 - (4) Where the tow has been undertaken in an emergency and neither the towing vessel nor the tow can comply with this part.

¹ The surveyor should have a copy of the US/Canada Great Lakes Agreement
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- (c) Any vessel carrying more than six (6) passengers for hire.
- (d) The requirements of the Great Lakes Radio Agreement do not apply to:
 - (1) Ships of war and troop ships;
 - (2) Vessels owned and operated by any national government and not engaged in trade.
- (e) The Commission may if it considers that the conditions of the voyage or voyages affecting safety (including but not necessarily limited to the regularity, frequency and nature of the voyages, or other circumstances) are such as to render full application of the Great Lakes Agreement unreasonable or unnecessary, exempt partially, conditionally or completely, any individual vessel for one or more voyages or for any period of time not exceeding one (1) year.

47 CFR Part 80.953 - Inspection and certification.

- (a) Each U.S. flag vessel subject to the Great Lakes Agreement must have an inspection of the required radio telephone installation at least once every 13 months. This inspection must be made while the vessel is in active service or within not more than one month before the date on which it is placed in service.
- (f) (b) An inspection and certification of a ship subject to the Great Lakes Agreement must be made by a technician holding one of the following: a General Radiotelephone Operator License, A GMDSS Radio Maintainer's License, a Second Class Radiotelegraph Operator's Certificate, or a First Class Radiotelegraph Operators Certificate. Additionally, the technician must not be the vessel's owner, operator, master, or an employee of any of them. The results of the inspection must be recorded in the ship's radiotelephone log and include:
 - (1) The date the inspection was conducted;
 - (2) The date by which the next inspection needs to be completed;
 - (3) The inspector's printed name, address, class of FCC license (Including the serial number);
 - (4) The results of the inspection, including any repairs made;And
 - (5) The inspectors signed and dated certification that the vessel meets the requirements of the Great Lakes Agreement and the Bridge-to-Bridge act contained in subpart T and U of this part and has successfully passed the inspection.
- (c) The vessel owner, operator, or ship's master must certify that the inspection required by paragraph (b) was satisfactory.
- (d) The ship's log must be retained on-board the vessel for at least two (2) years from the date of inspection.

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SUGGESTED EQUIPMENT LIST TO CONDUCT INSPECTION

TEST EQUIPMENT USED

COMMUNICATIONS TEST SET (to test RECEIVER SENSITIVITY) _____ YES / NO

WATT METER FOR THE APPROPRIATE FREQUENCIES _____ YES / NO

AMPMETER _____ YES / NO

VOLT/OHM METER _____ YES / NO

HYDROMETER OR CAPACITY METER (Battery Test) _____ YES / NO

FREQUENCY COUNTER _____ YES / NO

DEVIATION METER _____ YES / NO

DUMMYLOAD _____ YES / NO

SIGNAL GENERATOR _____ YES / NO

EPIRB READER _____ YES / NO

LIST MAKE AND MODEL OF ALL TEST EQUIPMENT USED BELOW

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VESSEL PARTICULARS

Vessel Name _____

Date of inspection ____/____/____

Inspection location _____

Expiration Date of Ships Radio Station License _____

Date of last inspection _____

Name of last inspector _____

Class of last inspector license _____

Serial Number of last inspector License _____

Port of registry _____

Gross Tonnage _____ GRT _____

Type of Vessel: Passenger, Cargo, Towing _____

Number of passengers _____

Length of vessel _____

MMSI Number _____

USCG Doc Number _____

State Registration number _____

Operates more than 3 miles from shore YES / NO

A copy of the FCC Rules, 47 CFR PART 80 on board _____ (47 CFR PART 80.401)

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VESSEL SOURCE OF ENERGY

The batteries used for mains and reserve power must supply the required equipment for a minimum of three (3) hours. [47 CFR Part 80.915, 80.917, 80.919, 80.963, 80.965]

There must be readily available for use under normal load conditions a main power supply sufficient to simultaneously energize the radiotelephone transmitter at its required antenna power, and the required receiver. Under this load condition the potential of the main power supply at the power input terminals of the radiotelephone installation must not deviate from its rated potential by more than 10 percent on vessels completed on or after March 1, 1957, nor by more than 15 percent on vessels completed before that date.

When the main power supply consists of batteries, they must be installed as high above the bilge as practicable, secured against shifting with motion of the vessel, and accessible with not less than 26 cm (10 in.) head room.

Means must be provided for adequately charging any batteries used as a main power supply. There must be a device which gives a continuous indication of the rate and polarity of the charging current during charging. [47 CFR Part 80.915, 80.959, 80.963]

1. Check main source of energy available in accordance with requirements –

(a) Turn off charger and record reading: _____ [12.5 VDC OR MORE – PASSED].

(b) Check all condition of wiring, connections, switches and batteries _____

(c) Key radio down for 10 min into dummy load and record reading: _____
[11.5VDC OR MORE – PASSED].

(d) VHF radiotelephone output power between 10 and 25 watts – PASSED.

(e) Calculate the reserve time for the battery bank: _____ [3 or more hrs – PASSED].

(f) Test charging circuits, charger 13.8 VDC, power plant 13.8 VDC - PASSED

Reserve power supply

Each passenger vessel of more than 100 gross tons and each cargo vessel of more than 300 gross tons must be provided with a reserve power supply independent of the vessel's normal electrical system and capable of energizing the radiotelephone installation and illuminating the operating control at the principal operating position for at least 2 continuous hours. When meeting this 2 hour requirement

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such reserve power supply must be located on the bridge level or at least one deck above the vessel's main deck.

- (a) Turn off charger and record reading: _____ [12.5 VDC or more – PASSED].
- (b) Check all condition of wiring, connections, switches and batteries _____
- (c) Key radio down for 10 min and record reading: _____ [11.5 VDC OR MORE – PASSED].
- (d) VHF radiotelephone output power between 10 and 25 watts – PASSED.
- (e) Calculate the reserve time for the battery bank: _____ [2 hrs or more – PASSED].

[For generator reserve power supply see 47 CFR Part 80.965 (2)]

VHF RADIO TEST

If this vessel requires Bridge To Bridge refer to 47 CFR Part 80.159, 80.163, 80.177, 80.1005, 80.1013

Required frequencies and use:

Each VHF radiotelephone installation must be capable of transmitting and receiving G3E emission as follows:

- (1) Channel 16—156.800 MHz Distress, Safety and Calling
- (2) Channel 6 ---156.300 MHz primary inter ship
- (3) Channel 22A (1022) 157.100 U.S. Coast Guard and maritime safety information broadcast
- (4) Channels 1A (1001), 5A (1005), 6, 11, 12, 13, 14, 67, 73, 74 Bridge-to-bridge, Intership safety and VTS
- (5) The radiotelephone station must have additional frequencies as follows
- (6) Those ship movement frequencies appropriate to the vessel's area of operation: channel 11—156.550 MHz, channel 12---156.600 MHz, or channel 14---156.700 MHz
- (7) The navigational bridge-to-bridge frequency, 156.650 MHz - channel 13
- (8) Such other frequencies as required for the vessel's service.
- (9) One channel for receiving marine navigational warnings for the area of operation
- (10) Every radio telephone station must include one or more transmitters, one or more receivers, one or more sources of energy and associated antennas and control equipment. The radio telephone station, exclusive of the antennas and source of energy, must be located as high as practicable on the vessel, preferably on the bridge, and protected from water, temperature, and electrical and mechanical noise. [47 CFR Part 80.956]

- 1. Receiver sensitivity of 2 μ v across 50 ohms for a 20 db SINAD. Reading _____

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2. Transmitter TEST [47 CFR Part 80.959]

Frequency error reading: _____ [10Hz or less per MHz – PASSED]

Modulation deviation reading: _____ [less than 5 kHz and more than 3.5 kHz - PASSED]

Power output into a 50 ohm dummy load – reading: _____

[@ 12.5 volts or higher output, reading between 15 to 25 watts on channels 6, 13, 16 – PASSED]

The operating controls are illuminated – PASSED.

The installation is clean and all wiring meets code.

TEST on all marine channels.

Check that all controls work.

Operate from voltage sources main and reserve.

ANTENNA

1. Check condition of antenna, transmission line, and mounting.

2. Check SWR reading: _____ [LESS than 1.5 to 1 (5% of fwd reading) - PASSED]

ELECTROMAGNETIC INTERFERENCE

1. Confirm absence of VHF interference with LED navigation and other above decks lighting activated (see note) _____ [No discernable interference – PASSED]

NOTE: Use of a VHF handheld near AIS VHF antenna is suggested. Turn off LED light(s). Tune the radio to a weak NOAA weather radio station. Turn on the LED light(s) one at a time, and then all on. If the NOAA channel vanishes after a lamp is energized, it's generating RF interference.

As an alternative to tuning to a weak NOAA weather channel, tune the VHF radio to some quiet channel. Adjust the VHF radio's squelch control until the radio outputs audio noise. Re-adjust the squelch until the audio noise is quiet, only slightly above the noise threshold. If the radio does now output audio noise, then the LED light(s) have raised the noise floor.

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CATEGORY 1 406 MHZ EPIRB (ALL VESSELS BEYOND 3 NM FROM SHORE)

Small passenger vessels that sail on the Great Lakes must meet the radio carriage requirements of the Great Lakes Agreement. This is a treaty between the United States and Canada governing radio carriage requirements for ships navigating on the Great Lakes. Those rules are contained in Subpart T of Part 80 of FCC Rules, Sections 80.951 through 80.971. The Coast Guard also requires carriage of an EPIRB if the vessel sails more than 3 miles from shore on the Great Lakes.

<u>406 MHZ EPIRB Checklist</u>	<u>YES</u>	<u>NO</u>	<u>N/A</u>
#1 EPIRB Make and Model: _____			
#2 EPIRB(if fitted) Make and Model: _____			
1. Checked position and mounting for float free operation. Verified that EPIRB is installed in an easily accessible position and is ready to be manually released and capable of being carried by one person into a survival craft.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Location(s): _____			
2. Verified that the lanyard is firmly attached, in good condition, neatly stowed, and not tied to the vessel or the mounting bracket.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Carried out visual inspection for defects.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Carried out the self-test routine.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Checked that the EPIRB ID and other information (include call sign and MMSI of the ship) is clearly marked on the outside of the equipment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Decoded the EPIRB identity number and other information confirming it is correct and the same as that marked on the EPIRB.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15 Digit Hexadecimal Number: _____			
7. Checked the registration through documentation (sticker) or directly with NOAA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Checked battery expiry date(s): _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Checked hydrostatic release(s) expiration dates(s): _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Checked the emission in the 406 MHz band using the self-test mode or an appropriate device to avoid transmission of a distress call to satellites.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. If possible, checked emission on the 121.5 MHz frequency using the self-test mode or an appropriate device to avoid activating the satellite system.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Checked that no transmission has been started after the test and remounting of the EPIRB in its bracket.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. The presence of beacon operating instructions was verified.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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RADIO TECHNICIAN'S REMARKS:

[LIST ALL FAILURES AND ANY CORRECTIONS TAKEN. NOTE IF INSPECTION PASSED AND IF NOT WHAT HAS TO BE CORRECTED.]

ONE COPY OF THIS IS LEFT WITH THE VESSEL AND ONE COPY IS KEPT BY THE INSPECTOR.

LOGBOOK ENTRY TO BE MADE BY THE INSPECTOR ALONG WITH THE MASTER AND SIGNED.

THIS DOCUMENT WILL BE PRESENTED TO THE USCG FOR GREAT LAKES INSPECTION.

MASTER'S SIGNATURE

RADIO INSPECTOR SIGNATURE

RADIO INSPECTOR PRINTED NAME AND LICENSE NUMBER

RADIO INSPECTOR ADDRESS

DATE AND LOCATON OF INSPECTION

DATE OF NEXT INSPECTON

Technician must initial bottom of each page
