

GMDSS TASK FORCE INFORMATION BULLETIN

SMALL COMMERCIAL VESSELS LESS THAN 300 TONS

Scope of this Information Bulletin

The Global Maritime Distress and Safety System (GMDSS) as mandated by the Safety of Life at Sea (SOLAS) Treaty of 1974 applies to cargo vessels over 300 gross tons, passenger vessels carrying more than 12 passengers and Mobile Offshore Drilling Units (MODUs) on International voyages.

This bulletin is an overview of the Radio Regulations affecting small commercial vessels as well as summaries about the GMDSS equipment that have trickled down to these smaller (non SOLAS) vessels. These vessels include cargo ships, tow boats & fishing vessels less than 300 gross tons plus vessels trading in the Great Lakes. Certain passenger vessels are also exempted from GMDSS (details below).

Regulations affecting smaller Commercial Vessels

The Bridge-to-Bridge Act – a USCG regulation regarding intership navigational communications whose compliance is checked by approved surveyors during periodic FCC Radio Inspections. This rule and its details can be found in 47 CFR 80.1001 (Subpart U) and applies to the following vessels:

- (a) Every power-driven vessel of 20 meters or over in length while navigating;
- (b) Every vessel of 100 gross tons and upward carrying one or more passengers for hire while navigating;
- (c) Every towing vessel of 7.8 meters (26 feet) or over in length, measured from end to end over the deck excluding sheer, while navigating; and
- (d) Every dredge and floating plant engaged, in or near a channel or fairway, in operations likely to restrict or affect navigation of other vessels. An unmanned or intermittently manned floating plant under the control of a dredge shall not be required to have a separate radiotelephone capability.

The VHF channels used for Bridge to Bridge communications are Channel 13 for most of the U.S. and Channel 67 for the Lower Mississippi River.

The Great Lakes Radio Agreement – This rule and its details can be found in 47 CFR 80.951 (Subpart T) and applies to the following vessels:

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

Small Passenger Vessel Regulation – This rule and its details can be found in 47 CFR 80.901 (Subpart S) and applies to the following vessels:

The provisions of Part III of Title III of the Communication Act require United States vessels which transport more than six passengers for hire while such vessels are being navigated on any tidewater within the jurisdiction of the United States adjacent or contiguous to the open sea, or in the open sea to carry a radiotelephone installation complying with this subpart.

The provisions of Part III do not apply to vessels which are equipped with a radio installation for compliance with Part II of Title III of the Act, or for compliance with the SOLAS Convention **(the preceding two references require a full GMDSS Radio Station)** or to vessels navigating on the Great Lakes.

Small passenger vessels less than 100 gross tons are covered by Subpart S regulations plus an exception exists for Small Passenger Vessels over 100 gross tons which do **NOT** carry more than 12 passengers (USCG regulation).

ALL OF THE VESSELS COVERED UNDER THE ABOVE REGULATIONS ARE REQUIRED TO HAVE A FCC ISSUED RADIO STATION LICENSE AND OPERATOR LICENSES

GMDSS Equipment Background

Maritime Mobile Service Identity (MMSI) Numbers

The DSC calling identity is a nine-digit Maritime Mobile Service Identity (MMSI) number that is assigned by the FCC to vessels required to use DSC in the VHF, MF, and HF maritime radio bands.

The MMSI number must be programmed into the DSC equipment and the way to get an MMSI number assigned is to apply to the FCC. In the case of new station licenses, the MMSI is automatically assigned and, for existing licenses, by applying for an upgrade of the station license.

If a station license is **not** required for your vessel because you use VHF only, you can apply to one of the authorized organizations that have been permitted by the FCC to make MMSI assignments. These organizations are:

BoatUS - <https://www.boatus.com/MMSI/MMSI/ObtainMMSI#!>

U.S. Power Squadron - www.usps.org/php/mmsi/

Digital Selective Calling (DSC)

DSC uses digital radio techniques to send Distress, Urgency, Safety and Routine priority alerts calls to indicate a requested communication between ships, ship to shore and shore to ship or to all stations. Once contact has been established on the digital calling channel, follow-on communications continue on normal analog channels by voice.

Distress calls in all DSC systems transmit the MMSI number, except the EPIRB which uses its 15-digit unique identification code for U.S. flag ships.

There are three classes that apply to DSC Radios for the sake of this bulletin – Class A, Class D and Class E.

Class A DSC radios are the required GMDSS versions of VHF and MF/HF units with full functionality as required by IMO's SOLAS regulations. Class D and E DSC radios are units for VHF and MF/HF radios (respectively) with lesser capabilities but with all the needed safety alerts and functions.

The FCC has allowed the use of Class D VHF-DSC radios for non-SOLAS vessels in domestic service within 20 nautical miles of the coast of the USA.

MF/HF-DSC

Ships which elect the MF/HF option for medium & long-range communications have to be equipped with the DSC scanning receiver option which automatically watches all six (6) MF/HF DSC frequencies. At minimum, the frequencies 2187.5 kHz, 8414.5 kHz and one other DSC channel in the HF band must be continuously monitored.

The Coast Guard watches the DSC distress and calling channels in all of the HF frequency bands and also watches a few selected HF voice frequency channels for calls from shipping. The USCG no longer monitors any 2 MHz frequencies. For more details refer to the Coast Guard maritime communications website at <https://www.navcen.uscg.gov/?pageName=maritimeTelecomms>

Satellite Communications

SOLAS compliant vessels typically use Inmarsat Ship Earth Stations (SES) as their primary long-range communications system. The Inmarsat Standard C units are capable of telex/email communications along with the ability to receive Maritime Safety Information (MSI) broadcasts (see the MSI section below).

Non-SOLAS commercial vessels are not required to use long-range systems unless they operate on the high seas (see Subpart S for further details).

*Editor's Note: The Iridium system has been approved for GMDSS compliance, however, as of this writing (April 2020) the approved equipment is not yet on the market.

Satellite EPIRBs and SARTs

Satellite **E**mergency **P**osition **I**ndicating **R**adio **B**eacons (EPIRBs) are used for distress alerting and are required on SOLAS vessels and small commercial vessels traveling past three (3) miles off the U.S. coast. These satellite EPIRBs should be float free types and self-activating in the event of a sudden sinking. They are also capable of being enabled manually.

Search **A**nd **R**escue **T**ransponders (SARTs) are also required on SOLAS vessels and some Small Passenger Vessels. The SARTs are used for close-in location of survivors and can either be Radar transponders or AIS transmitters (AIS SART) when activated.

Maritime Safety Information (MSI) Broadcast Systems

MSI includes messages seeking assistance for other vessels in distress or urgent warnings affecting safety of navigation. The majority of the messages are safety weather warnings & forecasts.

The coastal Navtex system broadcasts on 518 kHz have a coverage zone of about 250 to 500 miles offshore. Navtex MSI notices are broadcast to the coastal areas affected by the subject matter. Small commercial vessels may wish to use one of the new paperless Navtex receivers.

The high seas SafetyNET system broadcasts MSI via the Inmarsat C system with Enhanced Group Calling (EGC) capability. SafetyNET MSI notices are directed to one of 16 global Nav/Met areas by the local authorities. Both Navtex and SafetyNET receivers have processors which block printing of MSI messages already received. There are 5 new Navareas for the Arctic Ocean for vessels on polar voyages.

The coastal NOAA Weather Radio on VHF is not a GMDSS system but is a valuable VHF continuous

voice broadcast along the coasts of the U.S. At the present time, reception of MSI broadcasts is a GMDSS requirement but is optional for non-SOLAS vessels. All prudent mariners should monitor MSI broadcasts.

*Editor's Note: The Iridium system has been approved for GMDSS compliance which includes automatically monitoring for MSI, however, as of this writing (May 2020) the approved equipment for Iridium "SafetyCast" is not yet on the market.

Watchkeeping on Marine Radios

The FCC Rules require that all users of marine radios, including voluntary users, should keep **all** of their communications equipment turned on and watching the appropriate emergency channel at all times when underway and not working on another channel.

In the case of VHF radios, one of the radios should be watching channel 16 at all times except when communicating on another channel and, for VHF-DSC radios, the watch is also being maintained automatically & concurrently on channel 70. See the U.S. Coast Guard's recommended procedures on channel 70 DSC distress calls at <https://www.navcen.uscg.gov/?pageName=DSCDistress>.

All power driven vessels over 20 meters and towing vessels over 7.6 meters are required to stand watch on either VHF channel 13 or 67 (the Bridge to Bridge safety channels) when operating inside the navigable waters of the U.S. and out to the 12 mile offshore limit (territorial waters). This radio is to be separate from the one watching Channel 16.

The FCC Rules for Small Passenger Vessels found in 80.905(a)(5) require the installation of a GPS receiver and references 80.1085(c) which states that the receiver should be connected to all the distress alerting equipment for accurate position transmissions.

The Task Force recommends that voluntary vessels should follow suit if fitted with a GPS.

The GMDSS Task Force

This Information Bulletin was initially approved on 14 October 1997 and most recently updated on 14 May 2020 by the GMDSS Task Force, a U.S. Coast Guard sponsored group established to coordinate implementation problems, recommend their resolution, and disseminate GMDSS information.