

GMDSS Task Force  
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8 December 2011

**COMMENTS TO THE U. S. COAST GUARD**

In the Matter of

Proposed changes to Coast Guard Inspection )  
of Towing Vessels ) USCG docket No. USCG-2006-24412

**COMMENTS OF THE TASK FORCE FOR THE IMPLEMENTATION OF THE  
GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS)**

The GMDSS Implementation Task Force respectfully submits these Comments in response to USCG docket No. USCG-2006-24412 inviting comment regarding proposed changes to Coast Guard commercial towing vessel safety equipment regulations to enhance maritime safety as announced in the Federal Register 11 August 2011.

**The GMDSS Task Force:** The GMDSS Task Force was chartered by the U.S. Coast Guard to supplement government functions through outreach to the private sector and recommendation to regulatory authorities. The Task Force membership is broad based including more than 2500 representatives of commercial vessel operations, recreational boating interests, training institutions, service agents, manufacturers, and government authorities. The Task Force maintains a website at <http://www.navcen.uscg.gov/?pageName=maritimetelecomms> which contains numerous GMDSS Information Bulletins, records of Task Force meetings, various letters and petitions seeking regulatory action, and comments to pending regulatory proceedings.

**The Task Force Recommendations:** The Task Force generally supports the proposed regulations and offers comments on certain revisions in line with internationally recognized safety requirements include distress alerting, vessel to vessel emergency communications, receipt of Marine Safety Information (MSI) broadcasts, and enabling the vessels to be alerted by shore authorities when needed to assist other vessels.

**The Global Maritime Distress and Safety System (GMDSS):** GMDSS is an international radio safety system which has been in effect since 1999 when ships were required to be compliant. It consists of many sub-systems designed to provide global coverage, take advantage of new technology, provide for uniform radio equipment outfitting of vessels, training of operators and standardized response capability by shore authorities. The GMDSS organizes its carriage requirements by operating areas (Sea Areas 1-4 based on distance offshore and Inmarsat satellite coverage). GMDSS also requires equipment which will enable ships to comply with the following basic functional requirements, many of which can be performed by the same basic radio equipments:

- a. transmitting ship-to-shore alerts
- b. receiving shore-to-ship distress alerts
- c. transmitting and receiving ship-to-ship distress alerts
- d. transmitting and receiving search and rescue coordinating communications
- e. transmitting and receiving locating signals
- f. transmitting and receiving on-scene communications
- g. transmitting and receiving Maritime Safety Information

- h. transmitting and receiving ship-to-ship communications
- i. transmitting and receiving bridge-to-bridge communications.

**GMDSS Applied to Towing Vessels:** GMDSS is required for all commercial vessels over 300 tons sailing internationally but this has been extended by FCC regulations to include domestic vessels over 300 tons. The FCC Regulations require towing vessels over 300 tons to be fully GMDSS compliant.. The U.S. Coast Guard regulates towing vessels below 300 tons but is just now developing proposed safety standards. The current and the proposed U.S. Coast Guard regulations for towing vessels below 300 tons are considered deficient in several categories as described below to supplement those already in place in 33 CFR Part 164 and 46 CFR Part 25.

**Digital Selective Calling (DSC):** GMDSS standards for VHF, MF, and HF radio communications call for use of DSC techniques to enhance alerting with automatic identification and inclusion of an exact position from the navigation receiver. The U. S. Coast Guard has updated its HF coastal network for DSC and has been operating in that mode for several years. The U. S. VHF coastal network is presently being upgraded for DSC under the Rescue 21 Program which should be fully implemented (with few exceptions) by the time the Final Rules are effective. The U.S. MF coastal network has been upgraded with DSC capability but deficient coverage due to deteriorated antenna systems has led the Coast Guard to delay in declaring it operational. Satellite communications appear to be a superior option to MF at present for vessels operating more than 20 miles offshore. It is understandable that the towing vessel regulations have

not yet required the use of VHF-DSC and MF-DSC since the coastal and inland networks were not yet fully operational but now is the time to update the requirements. It should be noted that commercial shipping over 300 tons has been required to have DSC capability in all three systems since 1999 despite delays in completing coastal upgrades. All three DSC systems use the Maritime Mobile System Identity (MMSI) to uniquely identify the vessel. The MMSI number is issued by the FCC along with a Radio Station License which is required for all regulated towing vessels.

**Recommended VHF-DSC Radio Requirements:** All regulated U.S. towing vessels should be fitted with at least two fixed mount VHF radios, at least one of which must be DSC capable, in order to maintain required watches on the distress and calling channel and the bridge to bridge channel in addition to required operations channels. If more than one VHF-DSC radio is in use, at least one of the VHF-DSC radios at the watchstanding position must be capable of having the automatic channel switching feature disabled in order to maintain the bridge to bridge watch when a DSC alert is received. Those towing vessels operating outside VHF range should have long range MF/HF radio equipment or an Inmarsat or alternative satellite system as described in the following section. All DSC fixed mounted transceivers should be properly registered with the FCC and have the MMSI programmed into the radios. The VHF-DSC radios should be connected to a GNSS receiver so that a DSC distress message will include position data.

**Long Range Communications.** U.S. towing vessels operating outside VHF range (nominally 20 miles offshore) should have either an MF/HF-DSC Radio or a satellite

system which covers their area of operations. This is consistent with GMDSS rules except that the only satellite system currently recognized by IMO is several sub systems of the Inmarsat system. The Task Force believes this unnecessarily limiting and recommends the use of alternative satellite systems as long as they meet the basic functional requirements of the GMDSS. The substitution of a satellite system still requires the capability to receive Marine Safety Information (MSI) Broadcasts or weather forecasts and warnings and safety alerts of vessels needing assistance. There is a traditional regional arrangement for the use of 4125 KHz in Alaskan waters which is recognized by the Coast Guard in that they watch the frequency at Kodiak and 5 remote sites but its use is not reflected in the regulations. The Task Force feels that such widespread traditional use of a particular frequency should be reflected in the required watchstanding regulations.

**Required Reception of Maritime Safety Information (MSI) Broadcasts.** All regulated towing vessels should be capable of receiving Coast Guard MSI broadcasts on VHF radio and the NOAA continuous VHF weather broadcasts. Those towing vessels operating offshore should also carry Navtex receivers. Towing vessels operating on the high seas beyond Navtex coverage (average range 200 miles) should carry Inmarsat-C receivers programmed for the High Seas SafetyNET broadcasts or HF equipment to receive the Coast Guard long range HF-MSI broadcasts. Although not a GMDSS system, HF Facsimile receivers could be substituted for the HF-MSI broadcast reception.

In order to implement the preceding recommendations, the Task Force recommends the following revisions to proposed § 140.715:

**§ 140.715 Communications equipment.**

(a) \* \* \*

(b) Towing vessels must have at least two Very High Frequency-Frequency Modulated (VHF-FM) radios, at least one of which has Digital Selective Calling (DSC) functionality, installed at the operating station.

(i) The VHF-FM radios must be capable of monitoring VHF-FM Channels 13, 16, and any local navigational frequency, except when transmitting or receiving traffic on other VHF-FM channels, when participating in a Vessel Traffic Service (VTS), or when monitoring a channel of a VTS.

(ii) One of the VHF-DSC radios at the watchstanding position must be capable of having the automatic channel switching feature disabled in order to maintain the bridge to bridge watch when a DSC alert is received.

(iii) The VHF-DSC radios must be connected to the Global Navigation Satellite System (GNSS) receiver, or any other electronic navigational device capable of outputting vessel position if no separate receiver is carried, in order to receive position data. [This requirement does not apply to a vessel which does not carry a GNSS receiver or AIS.]

(c) Towing vessels which operate more than 20 miles offshore shall have a satellite ship-earth station operating on the Inmarsat system or other satellite system with coverage in the area where the vessel operates, which is capable of transmitting and receiving distress and safety communications from the position where the ship is

normally navigated. A system which is not capable of sending a distress message through the Inmarsat system, must have a pre-programmed function to communicate with a U.S. Coast Guard Rescue Coordination Center.

(d) As an alternative to the satellite communications capability under paragraph (c), the towing vessel may be provided with an MF/HF radio installation capable of selecting and maintaining a watch on 2187.5 kHz, and when operating in Alaskan waters, 4125 kHz.

The radio must be capable of transmitting and receiving from the position where the ship is normally navigated on all distress and safety frequencies in the bands between 1605 kHz and 4000 kHz, and between 4000 kHz and 27,500 kHz using -

- (i) DSC
- (ii) radiotelephony, and
- (iii) direct-printing telegraphy.

(e) Towing vessels operating on the high seas beyond Navtex coverage must carry Inmarsat-C receivers programmed for the High Seas SafetyNET broadcasts or HF-Marine Safety Information (MSI) equipment to receive the Coast Guard long range HF-MSI broadcasts. HF facsimile receivers may be substituted for the HF-MSI broadcast reception.

(f) All towing vessels must have at least one properly operating handheld VHF-FM radio in addition to the radios otherwise required. Unless being carried by a crew member, this radio or one of these radios must be kept at the primary operating station readily available for use in an emergency. If the radio is powered by a non-rechargeable battery, a fresh extra battery must be carried onboard. A radio provided for this purpose

after [the effective date of these rules] must have DSC capability, be waterproof, and be equipped with a GNSS processor for DSC distress message position data.

**Emergency Position Indicating Radio Beacons (EPIRBs).** The task force believes all US towing vessels that operate more than 3 nm from shore should carry an EPIRB fitted with an integral GNSS (GPS) receiver to permit automatic inclusion of position in the distress alert. This would be consistent with Recommendation M-10-1 of the National Transportation Safety Board.

In order to implement the preceding recommendation, the Task Force recommends the following revision to proposed § 141.380(a):

(a) Each towing vessel operating beyond 3 nautical miles from the baseline from which the territorial sea is measured, or beyond 3 miles from the shoreline of the Great Lakes, must carry a Category 1, 406 MHz satellite Emergency Position Indicating Radio Beacon (EPIRB) which meets the requirements of 47 CFR part 80. The EPIRB must be mounted in a location where it can float free of a sinking vessel. Each EPIRB installed after [the effective date of these rules] must be a type which includes a GNSS (GPS) position in its distress alert.

**Cellular Radios:** The proposed rules make no provision for cellular radios (telephones), and the Task Force supports this position. Coast Guard should not accept cellular radios as an alternative means to provide required communications functions. There are significant disadvantages in using cellular phones in lieu of VHF radios in that there is no

priority system for use in emergencies and that other nearby vessels will not hear a cellular distress call and will be unaware of the need to render assistance. Further, in the cellular radio system, reliable and accurate position information which is so vital for SAR prosecution, cannot be assured with any presently available cell phone systems. Personal use of cellular phones may also result in low battery capability for emergency use. Particular care must be exercised regarding personal cell phone use by watchstanders to ensure that they are not distracted. On balance, the Task Force feels that the use of cellular phones to substitute for VHF radios should be limited to areas where the Coast Guard does not have VHF coastal or inland river coverage.

**Other IMO Specified Systems.** The IMO has adopted several systems for GMDSS ships which are not technically part of the GMDSS system and some of these are being carried on smaller vessels either on a voluntary basis or as specified by the government. These include the Automatic Identification System (AIS), the Long Range Identification and Tracking system (LRIT), and the Ship Security and Alerting System (SSAS). The Task Force is not advocating that towing vessels below 300 tons should carry LRIT or SSAS unless they are on extended voyages beyond VHF coverage, but if the government has such a requirement for Maritime Domain Awareness, that need should be factored into a general review and updating of radio requirements.

We note that extended AIS carriage by towing vessels is being considered under a separate rulemaking. The Task Force recommends that towing vessels going beyond three nautical miles offshore or in line-haul service, should be equipped with AIS.

Unless transiting a VTS area or an otherwise regulated area, a Class B AIS should be accepted for this purpose.

While current regulations include radar requirements, the Task Force recommends that the new regulations reference current standards of the Radio Technical Commission for Maritime Services (RTCM).

**Emergency or Reserve Power requirements.** The Task Force recommends that all distress alerting communications equipment have independent or emergency (battery) power capability to provide operations following a primary power system failure. The emergency power should be sufficient to operate the radio installations and navigation lights for at least three hours. The independent or emergency power source should be physically separated from of the primary power system of the vessel and above the waterline. The emergency power system should have means of monitoring voltage available and be isolated from the vessels electrical system by a simple switch in the vicinity of the emergency distress alerting communications equipment. If the emergency power relies on a battery or batteries, it should have a means of automatically charging, and be capable of recharging them to minimum capacity within 10 hours. The emergency power system should be checked at regular intervals.

In order to implement the preceding recommendations, the Task Force recommends the following revisions to proposed § 140.715:

§ 143.340(b)(9)

(9) Other than excepted towing vessels, each towing vessel that relies on electricity for power must be arranged so that the loads identified in this subsection, can be energized from two independent sources of electricity. These sources of electricity must be physically separated, and one must be located above the waterline and serve as the emergency source of power for the installed radios, including any required AIS unit, and navigation lighting. The emergency power system should have means of monitoring voltage available and be isolated from the vessel's electrical system either by automatic switchover, or a simple switch in the vicinity of the emergency distress alerting communications equipment.

\* \* \*

(vii) If a battery is used as the second source of electricity required of this subsection, it must be capable of supplying the loads for at least three hours. The battery must have a means of automatically charging, and be capable of recharging to minimum capacity within 10 hours.

**Recommendations for Other Factors in the Regulations.** The current regulations fail to address other factors which are typically included in radio regulations. These include the following:

License and training requirements for operators

Maintenance and testing requirements for communication and navigation equipment should be covered in revised TSMS, Part 138.

**Equipment changes.** The communication equipment changes should be required when equipment is replaced, at first inspection, or no later than 5 years from the effective date of the Regulations, whichever comes first. As an exception, upgrade to VHF-DSC should be accomplished within one year of the date that Sea Area A1 is declared operational.

**Summary.** The Task Force believes advances in radio communication and navigation systems have made them attractive and affordable additions for towing vessel safety. Their incorporation into a more systematic set of safety regulations is now essential.

**Task Force Offer to Assist in Development of New Emergency Radio Requirements:**

The Task Force is pleased to submit these recommendations for updating the radio requirements for U.S. towing vessels below 300 tons and stands ready to assist the Coast Guard and/or the Towing Industry Safety Advisory Committee (TSAC) in refining the recommendations with input from the commercial towing community.

For the GMDSS Task Force

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