



SHIP SAFETY BULLETIN

Bulletin No.: 04/2002
Date: 2002-04-29
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Subject: **IMPENDING REQUIREMENT FOR A VHF RADIO INSTALLATION WITH DIGITAL SELECTIVE CALLING (VHF-DSC RADIO)**

By **August 1, 2003** the following vessels when engaged on foreign or home-trade voyages must be equipped with a VHF-DSC Radio:

- **Ships of closed construction that are more than 8 m in length;**
- **Ships carrying more than six passengers; and**
- **Towing vessels.**

Please note, however, that the above does not apply to ships on inland water voyages nor to ships on home-trade voyages, Class IV that are within a Vessel Traffic Services (VTS) zone. This date coincides with the date that the Canadian Coast Guard intends to declare the A1 Sea Area fully operational. The complete A1 sea area will be available on a test basis during the 6 month trial phase beginning February 1, 2003.

Since February 1st, 1999, commercial vessels over 300 tons and vessels carrying more than 12 passengers, on international voyages have fitted this equipment in accordance with the requirements of SOLAS Chapter IV as part of the International Maritime Organization's (IMO) Global Maritime Distress and Safety System (GMDSS) initiative.

Since April 1st, 2001, domestic Canadian vessels over 300 tons and vessels of 20 m or more in length carrying more than 12 passengers on Home Trade voyages outside of Vessel Traffic Services Zones have been required to carry VHF-DSC equipment.

The annex to this Bulletin contains important and helpful information that mariners should be aware of when purchasing VHF-DSC radios and when operating the radio such as:

- What is a VHF-DSC radio and why is it important?
- What classes of VHF-DSC radios are acceptable?
- Maintaining watch on VTS and working frequencies;
- Ensuring the VHF-DSC has a proper 'identity' – MMSI;
- Importance of continuous position input;
- Some important installation reminders;
- Canceling false alerts; and
- Operator Certification Requirements (ROC-MC).

Keywords:

1. Ship Station
2. GMDSS
3. VHF DSC

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ANNEX

What is VHF- DSC and why is it important?

VHF-DSC is an internationally recognized standard that operates on channel 70 of the VHF maritime mobile band. Aside from functioning as a VHF radiotelephone, a VHF-DSC (digital selective calling) radio permits the selective reception of digital calls from other VHF-DSC radios on ships and at CCG MCTS centres. The important safety feature of the VHF-DSC radio is that it allows a ship in distress to transmit a rapid distress alert at the push of a button. When connected to a GPS or other suitable navigation receiver, the distress alert will include an accurate up-to-date position of the distressed vessel.

What classes of VHF-DSC radios are acceptable?

There are a variety of VHF-DSC radios available that are built to comply with different standards; however not all standards are acceptable for regulatory compliance. For domestic commercial vessels, an operator can choose between VHF-DSC radios certified as complying with either the European standard EN301 025, or the IMO (SOLAS) performance standard. Mariners should note that a new standard with many technical updates is being developed by the International Electrotechnical Commission (IEC), and is expected to be completed by the end of this year. Radios certified to this new standard, IEC 62238, will also be accepted.

Commercial vessels over 300 tons and vessels carrying more than 12 passengers making international voyages must fit Class A or Class B VHF-DSC radios complying with IMO requirements.

VHF-DSC radios built to meet the U.S. RTCM SC-101 standard are not permitted for compulsorily-fitted ship stations, as these radios are intended for the pleasure craft market, and do not allow for simultaneous reception of Channel 70 DSC calls and calls on other channels i.e., channel 16, VTS sector or other working frequencies.

A list of GMDSS equipment known to comply the with above standards can be viewed on the Internet at:

<http://www.tc.gc.ca/MarineSafety/Ships-and-operations-standards/nav-saf-rad-com/gmdss-equipment.htm>

Maintaining Watch on VTS and Working Frequencies

VHF-DSC equipment, after having received a distress, urgency or safety broadcast on channel 70 will automatically switch to VHF channel 16 for subsequent voice announcements. This was a designed safety feature to help ensure critical distress communications are not missed. However, mariners required by the *VTS Zones Regulations* and the *VHF Practices and Procedures Regulations* to monitor a specific VTS sector frequency must ensure that they return the radio to the appropriate frequency after determining the impact of the VHF-DSC alert on their operations.

Vessels maintaining watch on a VTS sector frequency per the requirements of the *VTS Zones Regulations* may, if navigating in congested waters, temporarily discontinue DSC watchkeeping on channel 70 until the required manoeuvre has been completed.

Also, vessels temporarily engaged in operations where even a momentary break in the working channel frequency could be a concern should consider maintaining their existing VHF radiotelephone in addition to the VHF-DSC radio. VHF-DSC equipment that is approved to the new IEC 62238 standard for Class D DSC radios may incorporate features that will help to minimize disruptions in channel monitoring.

Ensuring the VHF-DSC has a proper ‘identity’ – MMSI

The correct identity of a VHF-DSC radio is critical for distress alerting and effective communications. VHF-DSC radios must be programmed with this identity called a Maritime Mobile Service Identity (MMSI). To ensure identities are unique and available for search and rescue purposes, MMSI numbers are issued by Industry Canada – Spectrum Management and are available free-of-charge. A list of Spectrum Management offices can be viewed on the Internet at: <http://strategis.ic.gc.ca/SSG/sf01742e.html>.

Importance of continuous position input.

Ships equipped with VHF-DSC radios, and when fitted with a navigation receiver (GPS or LORAN C) with a NMEA 0183 data port, must connect the VHF-DSC radio to the navigation receiver. This will ensure that any distress alerts sent will have an accurate position contained within the distress alert. An accurate, automatic position will help to ensure the search time is minimal when responding to an emergency.

Some important installation reminders

Currently, most VHF-DSC radios require two antennas, one of which is for the channel 70 dedicated watchkeeping receiver. Care should be taken to ensure they are mounted with sufficient separation to avoid mutual interference.

Ships required to fit a VHF radiotelephone or a VHF radio with DSC and using batteries as the primary source of energy should fit these batteries in the upper part of the ship, and in compliance with Transport Canada’s Ship Electrical Standards (TP127).

Canceling false alerts

Operators should only use the distress button in an emergency; the distress button should never be pushed just to test it. In the event that a distress call is inadvertently or accidentally transmitted on VHF-DSC, it must be cancelled immediately. This is done by:

1. switching off the transmitter immediately, if detected during transmission;
2. switching equipment on and set to Channel 16; and
3. making a broadcast to "All Stations" giving the ship's name, call sign and DSC number, and cancel the false distress alert.

Intentionally sending a false distress alert carries penalties under the Canada Shipping Act, the Radiocommunications Act, and the Criminal Code.

Operator Certification Requirements

The *Crewing Regulations* require that persons in charge of a radio watch onboard vessels which are compulsorily-fitted with Digital Selective Calling or INMARSAT equipment hold, at a minimum, a Radio Operator's Certificate – Maritime Commercial (ROC-MC). This includes all ships required to fit VHF-DSC equipment on August 1st, 2003. Due to the large numbers of vessels that will be fitting this equipment, ship owners and operators are encouraged to enroll in an approved ROC-MC course well in advance of this date.

Where to Find Additional Information on VHF-DSC

Additional information respecting Digital Selective Calling and the Global Maritime Distress and Safety System can be found on the Internet at:

<http://www.ccg-gcc.gc.ca/eng/CCG/Mcts/>

http://www.ccg-gcc.gc.ca/sar/gmdss_e.pdf

<http://www.navcen.uscg.gov/marcomms/gmdss/dsc.htm>

http://www.imo.org/Safety/index.asp?topic_id=390