

Taking the Search out of Search and Rescue: Digital Selective Calling

You are five miles southeast of Cattle Pass in the Strait of Juan De Fuca. Your 15-year-old son has just noticed smoke curling out of the engine room. You open the hatch and discover that your engine compartment is in flames. While you reach for the fire extinguisher, you send your son to press the DISTRESS button on your new VHF radio. Because you took the time to configure it properly, the signal going out to the U.S. Coast Guard station at Port Angeles contains the name of your vessel, your identification, and your exact location in latitude/longitude coordinates. Within minutes, the Coast Guard is hailing you on Channel 16 to determine the severity of the problem and assure you that help is on the way.

If you've purchased a marine VHF radio in recent years, you've probably noticed the red button that is marked "Distress" and protected by a cover to prevent accidental activation. The "DSC" or "Digital Selective Calling" feature on your new radio is one of two important new developments in radio technology for recreational boaters. (The other—AIS or Automatic Identification System—will be covered in an upcoming article.)

DSC dramatically improves a boater's chance of surviving an emergency IF the boater does three things:

- Makes sure that the VHF radio is connected to the vessel's GPS via the NMEA output.
- Applies for a Maritime Mobile Service Identity (MMSI) number and programs it into the radio. (Each vessel must have its own unique 9-digit MMSI number.)
- Opens the radio's User Manual and learns how to use the DSC features.

A DSC radio that has been properly configured (connected to the GPS and programmed with the vessel's unique MMSI number) provides an automated and virtually foolproof method of sending a MAYDAY or Distress Call to all DSC-equipped boats in VHF range. All you have to do is press the button for five seconds, and a digital signal will be broadcast containing your vessel's name, your identification, and your vessel's latitude/longitude coordinates. The signal will repeat every three or four minutes until received by the Coast Guard or other boats in VHF range, freeing you and your crew to pump out water, fight a fire, or prepare to abandon ship. Once the signal is received, your radio will automatically switch from Channel 70, which is constantly monitored for DSC calls, to Channel 16, where rescuers can contact you to establish voice-to-voice communications.

Especially when boating in the Puget Sound and San Juan Islands, where the U.S. Coast Guard has recently implemented its new Command, Control and Communications System called “Rescue 21”, your properly configured DSC radio will take the “search” out of search and rescue, and increase your odds of survival.

How to Apply for an MMSI

If you have obtained a Federal Communication Commission (FCC) ship radio station license in the last few years, an MMSI number has already been assigned to your vessel. If you plan to operate in international waters (such as Canada), you should apply for an FCC ship radio license and FCC-assigned MMSI number. Call 1-888-225-5322 and select option 2. An FCC employee will guide you through the process. If you do not plan to boat in Canadian waters, you may contact BoatU.S. to obtain your MMSI number free of charge: [HYPERLINK "http://www.boatus.com/mmsi/" http://www.boatus.com/mmsi/](http://www.boatus.com/mmsi/).

Note: MMSI numbers assigned by BoatU.S., along with associated data (vessel description and emergency contact information), are stored in the U.S. Coast Guard Search and Rescue database only. They are not shared with the International Search and Rescue database. If you frequently cruise in Canadian or other international waters, you should seriously consider jumping through the hoops to obtain an FCC license with an MMSI number. If you need to use the MAYDAY function of your DSC radio in international waters, the search and rescue effort will be dramatically enhanced if information about you and your vessel is available to your rescuers.

What Else is DSC Good For?

A DSC-equipped VHF radio has all the features of a traditional VHF radio, and more. In addition to Distress Calls, it automates Urgent (Pan-Pan) calls, Security (Sécurité) calls, and a variety of calls associated with pleasure cruising, such as hailing a buddy boater, determining a boat’s position, or hailing an entire group of boats. It enables a boater to send a digital signal directly to another DSC-equipped vessel or shore station, much like a person-to-person telephone call. Here’s how it works:

John enters Sally’s MMSI number into his VHF radio, along with the working channel he wants Sally to turn to—in this case Channel 68. (Note that most DSC radios allow you to enter MMSI numbers into memory, similar to a cell phone, for easy selection and call initiation.)

Sally's VHF radio "rings" on Channel 70, the channel that is exclusively dedicated to DSC communications.

Sally's radio displays John's MMSI number, vessel name, and Channel 68.

Sally then switches to Channel 68 to begin a conversation using normal VHF radio practices. Note that Channel 70 is reserved for digital signaling only, not for voice-to-voice communication.

Cautions

Depending on the make and model of your DSC radio, you need to be very careful when programming your MMSI number. Typically, you will have two (2) opportunities to program the number into your radio before you are locked out, forcing you to send the unit back to the manufacturer to reset the radio. If you don't feel comfortable programming the MMSI number yourself, contact a marine electronics professional to do it for you.

Do not attempt to test the Distress Call feature. Doing so will result in a false Distress Call, which the U.S. Coast Guard seriously frowns on. (It's illegal in Canada.) Instead, it would be a good idea to exchange MMSI numbers with a fellow boater and practice connecting for non-emergency purposes. If you are able to make contact, you will know that the system works.

Be sure to read your owner's manual to learn the basic DSC functions of your particular radio.

One last word of caution: after taking the time to integrate the radio with the vessel's GPS, apply for an MMSI number, program the MMSI number into the radio, and learn how to use the new features, it is important to keep your information current with either the FCC or BoatsU.S. Your rescuer will use that information to find you!

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