



GMDSS

The Benefits of Digital Selective Calling

What is Digital Selective Calling?

DSC is simply a tone signalling system, which operates on VHF Channel 70 and is similar to the tone dialling on a phone, but with the ability to include data such as the vessel's identification number, the purpose of the call, the vessel's position, and the channel for further voice communications. In other words, vessels can call each other direct by use of their MMSIs (rather like a telephone number) without bothering other vessels or shore stations unless of course it is a Distress/Urgency call. The VHF radiotelephony system requires users to listen on channel 16 until someone speaks and to determine whether the call is for them more often than not, it won't be.

Shipping increasingly listens on VHF Channel 13 which is the designated "bridge to bridge" channel and although required, when practicable, to monitor VHF Channel 16, there is evidence that this practice is reducing as GMDSS allows distress, urgency, safety and routine messages to be received without the need for a dedicated listening watch. The UK Coastguard maintains a Channel 16 listening watch via loudspeaker. There are a lot of myths about GMDSS for smallboat users, in particular that it is just a more expensive VHF radio, and that it causes lots of false alarms to the Coastguard. In fact, the UK Coastguard actively encourages the fitting of VHF DSC.

VHF DSC radios with integrated GPS receivers are available for under £200.

Further advice can be found at www.gov.uk/mca or email infoline@mca.gov.uk

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Maritime &
Coastguard
Agency

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A typical VHF with DSC. Picture courtesy of SIMRAD

The Global Maritime Distress and Safety System (GMDSS) is a maritime communications system for all vessels. However, it is not just for emergencies and can be used for vessel-to-vessel, vessel-to-shore and shore-to-vessel routine communications. Commercial vessels over 300 gross tonnage and certain smaller vessels, including some fishing boats, must fit GMDSS equipment. Most of the well-known offshore yacht races insist yachts are GMDSS equipped.

There are several elements that make up the total GMDSS communications package, including Digital Selective Calling (DSC) via radio. The other elements include satellite communications, Navtex for weather and navigation information, Search and Rescue Radar Transponders (SARTs), AIS-Search and Rescue Transmitters (AIS-SARTs) and Emergency Position Indicating Radio Beacons (EPIRBs). A private leisure craft operating close to shore around the U.K., will not need all of these, but it is recommended that, at the very least, leisure craft should fit VHF DSC and this leaflet addresses VHF DSC and private leisure craft. All UK Coastguard Operations Centres are GMDSS VHF DSC equipped.



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Benefits of DSC

Distress alerting

By pressing the Distress Alert button, you can send your boat's identity, your position¹, and the nature of distress. The position given will be precise, and the alert will be heard immediately by all DSC equipped vessels and shore stations within range. The distress message will be automatically repeated every 4 minutes, until it is acknowledged either by a Coastguard Operations Centre or ship within radio range. If circumstances allow, the distressed vessel is required to follow-up the alert with a Mayday voice message on Channel 16 to give further details and alert any non-DSC equipped vessels in the vicinity.

Safety broadcasts

Non-scheduled Maritime Safety Information (MSI) broadcasts from coast stations and Sécurité messages from ships automatically generate an alert (ring tone) to ensure this vital information is not missed.

Routine calls

To call another vessel, simply input their dedicated number – (MMSI), select your chosen VHF working channel and send the call – it's like using a telephone. Both your radio and the one you are calling automatically switch to the chosen channel for subsequent conversation. In the case of calls to coast stations e.g. Operations Centres, the procedure is similar, but the coast station determines the working radio-telephone channel.

Group calls

When groups of vessels need the same information (yacht races, club rallies etc.), a special group-call identity can be used to facilitate restricted broadcast messages.

¹ To transmit precise positions, the DSC must be interfaced to GPS. Otherwise, regular manual position updating is required.

Equipment specifications

The minimum standard for small craft for fixed VHF DSC radios in Europe is EN 301 025. Make sure that any equipment you purchase complies with this standard, which approximates the international 'Class D' DSC specification. For portable VHF DSC radios they should comply with EN 302 885 which follows the international specification for such equipment. Check that the equipment is marked as compliant with the European Radio and Telecommunications Terminal Equipment or Radio Equipment Directive. (See marking above right).



VHF range can be 30–50 nautical miles from a coast station antenna, but much less if your antenna height is less than 4m above sea level or if you use a portable radio. Outside VHF range MF/HF DSC allows you to contact vessels and Coastguards around you directly and at considerable distances – HF in suitable conditions has global reach.

Frequently asked questions

Q: My VHF is working perfectly – why should I upgrade it to DSC?

A: GMDSS DSC could save your life. It means that distress alerts with the precise position² of your boat can be sent in seconds.

Q: I have held a VHF (restricted) operator's licence for years – why do I have to sit an update course for GMDSS?

A: Whilst it is true that the voice operating procedures have not changed, DSC alerting requires additional knowledge and it is important that operators know which alert is relevant to a situation.

² To transmit precise positions, the DSC must be interfaced to GPS. Otherwise, regular manual position updating is required.

Q: Can my crew use the radio if they have not been GMDSS trained?

A: Yes – under the supervision of a qualified GMDSS operator. It is very easy to train your crew to 'push the red button if anything happens to me'.

Q: If I have DSC, do I need to monitor Channel 16?

A: Yes, when practicable. However, as routine (vessel to vessel) calling is automated, you no longer need to listen for your vessel's name on VHF Channel 16 – calls for you "ring" only on your radio.

Q: Why do I need a VHF at all if I sail in range of mobile phone coverage?

A: There are several practical reasons:

- It may not be possible for the Coastguard to re-establish contact if, for any reason, the connection is lost. Rescue resources are equipped to communicate with vessels by VHF.
- Coverage is not reliable off-shore.
- As a "closed channel", other vessels in the vicinity will not be aware of the incident.
- Mobile phones are not designed for the marine environment.
- Limited battery life.

All big ships and almost all European Coastguards are fully equipped for DSC and should respond if called. GMDSS is a worldwide system, which can be used anywhere. Being fully automatic, it avoids possible language barriers. Using DSC will help you, others in distress, and the Coastguard.