

Responding to a man overboard VHF DSC distress alert - advice for radio operators



Port authorities, offshore oil and gas companies and commercial marine operators are using the **Crewsafe V100 Maritime Survivor Locating Device** for fast location and self-rescue in a man overboard event.

This personal radio distress beacon operates differently to Personal Locator Beacons which transmit on 406 MHz to land-based Rescue Coordination Centres.

The Crewsafe V100 transmits a man overboard VHF DSC distress alert and MAYDAY voice message to all VHF receivers in range.¹ This provides the parent vessel and nearby vessels or stations with the casualty's GPS position, enabling rescuers to quickly locate, track and retrieve the man overboard.

This document answers questions about the device and recommends the action to take if you receive a man overboard VHF DSC distress alert.

¹ Profile dependent. In closed loop configuration, the Crewsafe V100 transmits VHF DSC distress relay alerts only to up to 8 pre-programmed radio destinations.



What is the Crewsafe V100? What does it do?

The Crewsafe V100 is a water-activated Maritime Survivor Locating Device (MSLD) that automatically transmits a man overboard's GPS position in a distress alert via VHF radio.

The Crewsafe V100 transmits the distress alert and updated GPS position every 5 minutes in the first 30 minutes after activation and then every 10 minutes for approximately 12 hours.

This gives rescuers continuously updated position reports, enabling them to track and locate the man overboard quickly and effectively.

What channels does the Crewsafe V100 transmit on?

The Crewsafe V100 transmits the man overboard distress alert to all VHF radios in range on:

- Channel 70 - DSC (Digital Selective Calling)
- Channel 16 - voice message¹

If your radio is not DSC-compatible, you will only receive the channel 16 voice message. VHF DSC radios will receive the DSC alert and Channel 16 voice message.

What type of DSC message does the Crewsafe V100 transmit?

The Crewsafe V100 DSC message is a “distress alert” meaning all stations will receive the message and be able to decode it.

What happens when my VHF radio receives a DSC distress alert?

Your VHF DSC radio will sound a loud repetitive alarm. Although a DSC distress alert does not contain specific instruction to change channel, most VHF DSC radios automatically switch to channel 16 on receipt of a distress alert (in order to be ready for the voice message) - this happens every time the radio receives a distress alert.

This will affect your routine communications.

What data is in the DSC distress alert?



The DSC distress alert includes a unique 9-digit MMSI number (starting 972 - the ITU has reserved this prefix for MOB devices), its position and the time of the alert. VHF DSC

radios store the MMSI number, position and time - accessible through the DSC menu. Manufacturers maintain a database of MMSI numbers to assist SAR authorities.

What does the voice message say?

You will hear a “Mayday, man overboard” message in a synthesized voice² with the MMSI number, latitude and longitude and time of the MOB event.

What is DSC, or Digital Selective Calling?

DSC is a semi-automated method of establishing contact between radio stations using a DSC message, which is a brief burst of data containing relevant information about the nature of the message and may include a GPS position.

There are many types of DSC message and each one determines which station or stations are able to decode the data and respond accordingly. On receipt of a DSC message, some DSC radios will automatically change channel to an associated channel or channel specified in the DSC message.

Can I automatically plot the position received in the distress alert on my chart plotter?

Many VHF DSC radios have a NMEA 0183 output which allows you to connect it to a chart plotter – check your radio operator’s manual. When your radio is connected to your chart plotter and you receive a DSC distress alert, the chart plotter displays the position and data on the screen. Multiple devices can be displayed on the chart plotter at the same time.



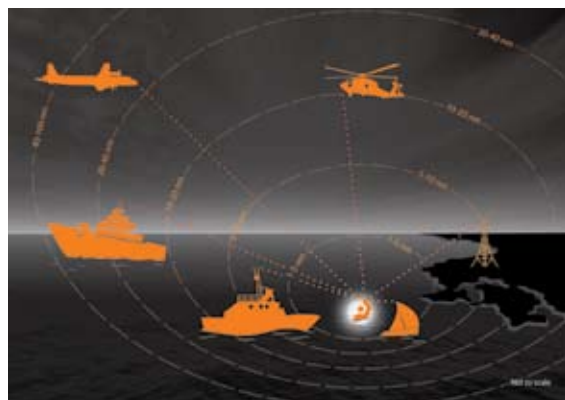
How accurate is the position data?

The GPS position received is accurate to $\pm 10\text{m}$.

How far away will the transmission be received? What is the alerting range?

This depends on sea state and the height or altitude of the receiving antenna. Surface to surface the range is typically 2 to 10NM.

The device’ power output is 1 watt from true sea level so coastal stations may not receive every transmission. However, vessels and aircraft within range will receive the distress alerts, as will any hilltop VHF antennas.



² Profile dependent.

What to do if you receive a man overboard VHF DSC distress alert and voice message



1. Note the MMSI number.
2. Note the latitude and longitude.
3. Note the time.
4. Plot the position.

If the distress alert is not acknowledged by the parent vessel, and you **are** in the vicinity of the MOB location:

5. Defer acknowledgement for a short interval to allow a limited coast or maritime communication station to acknowledge receipt.
6. If no station acknowledges the distress alert, acknowledge receipt of the distress alert.

The MOB will not receive acknowledgement, but other receivers will be aware that you are responding to the emergency.
7. Broadcast your position and estimated time to reach the MOB.
8. Launch Search & Rescue assets and commence appropriate man overboard recovery procedures.
9. Monitor Channel 16 for further transmissions and position reports.
10. When the MOB has been recovered, switch off the Crewsafe V100 and broadcast an ALL STATIONS message to cancel the distress alert.

If you are **not** in the vicinity of the MOB location, but you **can** assist:

- » Defer acknowledgement for a short interval to allow vessels nearer the MOB to acknowledge the distress alert.
- » If no vessel acknowledges the distress alert, acknowledge receipt of the distress alert and commence Search & Rescue.

If the distress alert is not acknowledged by other stations and you are **unable** to assist:

- » Broadcast a MAYDAY RELAY giving the position relative to a landmark as well as the latitude and longitude.

Want more?

- Visit our website for videos and information: www.mobilarm.com
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