

## REVIEWERS GUIDE – CREWSAFE V100



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# SUMMARY

Based in Perth, Western Australia, Mobilarm is the world leader in electronic marine safety products that protect and save lives in man overboard events.

Available online and through a global network of resellers, Mobilarm's award-winning safety equipment is specifically designed to improve the safety of all mariners and mitigate workplace risks by providing an instant alert to vessel and crew in the event of man overboard.

This reviewer's guide provides an overview of the Crewsafe V100, the first fully automated VHF DSC Maritime Survivor Locating Device designed specifically for offshore oil and gas companies and their service providers, maritime defence forces and commercial marine operators, to ensure a quick and effective rescue of casualties in the water.

## **Our Vision**

Mobilarm is the world's leading brand in offshore safety solutions.

Our vision will be achieved when leading global offshore energy, commercial marine and defence organisations turn to us to keep their personnel and assets safe.

As a result, we reduce workplace risk and save lives.

# THE CREWSAFE V100

## Introduction

The Crewsafe V100 protects mariners like no other product available on the market today. It is the first fully automated Maritime Survivor Locating Device to use VHF DSC (Digital Selective Calling) and synthesized voice to automatically transmit an emergency radio distress call from the casualty in a man overboard incident.

The Crewsafe V100 utilises the VHF marine radio band to transmit a “Mayday – Man Overboard” distress alert and real-time position coordinates of the person in the water. Within seconds of the person entering the water, the distress message is automatically broadcast and received by all vessels in range.

This localised MAYDAY notifies the parent vessel directly that a man overboard incident has occurred. By directly alerting the people in the best position to carry out a rescue – the crew on board the closest vessel – a rescue team can be deployed almost immediately. This quick response vastly improves the man overboard casualty’s chances of being found, and found alive, providing a greater level of safety at sea for mariners in a man overboard emergency.

## Radio Technology at Sea

Since the early 1900s, radio has helped to save tens of thousands of lives and become the key element in marine search and rescue. The introduction of the Global Maritime Distress and Safety System (GMDSS) in 1999 has automated marine radio calling by the use of a data signal technology – Digital Selective Calling (DSC) - which removes the requirement for manual watch-keeping on marine radio distress channels.

## DSC Technology in Use

All DSC messages automatically indicate the identity and position of the sender, as well as the priority and purpose of the call. On receiving a DSC distress call, the DSC equipment will automatically sound an alarm which must be manually acknowledged by the radio operator, making it impossible to miss or ignore.

## Swift Notification in a MOB Incident

406 MHz Personal Locator Beacons must be manually activated to send a distress signal - as mandated by regulatory authorities. This may be difficult or impossible to do if an MOB is injured or unconscious. In addition, these devices transmit their emergency signal to an onshore location, which may introduce unnecessary delay to recovery and reduce their chances of survival.

The Crewsafe V100 is automatically activated from the READY position when the device detects the wearer has gone overboard, ensuring that the device will broadcast a distress alert regardless of the physical condition of the user. The device can also be manually activated.

The alerting radius of the Crewsafe V100 is 2 to 10 nautical miles depending on sea state and the altitude or height of the receiving antenna, though aircraft will detect the emergency signal at longer distances.

Many other Maritime Survivor Locating Devices require dedicated receiving base stations, specialised 121.5 MHz Direction Finding equipment or costly satellite subscription; with the Crewsafe V100, so long as a VHF radio is on board, no other equipment need be installed. The technology interfaces with the existing industry-standard VHF marine radio network and VHF DSC-compatible equipment, making it cost-efficient and practical as a life-saving device.

### **Greater Chances of Survival**

The Crewsafe V100 uses this existing GMDSS and VHF radio structure to signal to multiple stations at the same time that a man overboard incident has occurred. All shipping in the immediate vicinity of the person in distress will be rapidly alerted and can assist in a coordinated search and rescue operation with the minimum of delay.

Since the probability of survival is directly related to the length of time in the water, crew utilising the Crewsafe V100 in a man overboard event can expect vastly improved recovery times which will reduce the likelihood of a fatality.

## CREWSAFE V100 DESIGN



The Crewsafe V100 is a portable device that can be easily implemented and incorporated with existing safety measures.

The device can be integrated with lifejackets to provide the user with the necessary equipment to stay afloat and provide detection, tracking and location information to rescuers.

The design, size and weight of the unit means it can be comfortably clipped onto harness or webbing without interfering with day-to-day activity or hindering a person's movement or flexibility while wearing it.

At just 153g (5.4oz) and measuring 12 x 7.8 x 3cm (4.7 x 3 x 1.22in), it is the smallest and lightest device of its kind currently available.

The device has been specifically designed for use in offshore energy, defence and commercial marine environments, and as such, is intrinsically safe, fully waterproof and extremely tough.

As a stand-alone, personal device, the Crewsafe V100 requires no dedicated on board infrastructure or services, such as direction finding equipment or satellite rental, to be effective in an emergency.

Mariners can choose to purchase and wear their own Crewsafe V100 regardless of where they are working and take responsibility for their own safety. Even if the vessel has no official MOB alarm system it will have a VHF radio, so by carrying a Crewsafe V100, individual mariners have the best possible chance of rescue should they go overboard.

# HOW IT WORKS

When the Crewsafe V100 detects the wearer has gone overboard, it automatically transmits the initial man overboard MAYDAY message as a VHF DSC distress alert on channel 70. Meanwhile, the device searches for a GPS signal and once it acquires a lock, typically in 45 to 60 seconds, it will transmit the alert again via DSC, complete with the current latitude and longitude coordinates of the person in the water. It then broadcasts the message in a synthesised voice on channel 16, the marine radio emergency channel.<sup>1</sup>

The DSC and voice message is repeated at regular intervals, meaning that the man overboard casualty's first known position is marked, frequently updated and tracked as they drift, providing rescuers with valuable information about where to perform the search.

Messages will continue until the device is deactivated. The V100 battery will support transmission for a minimum of 12 hours at -10°C (14°F) and longer in warmer conditions.

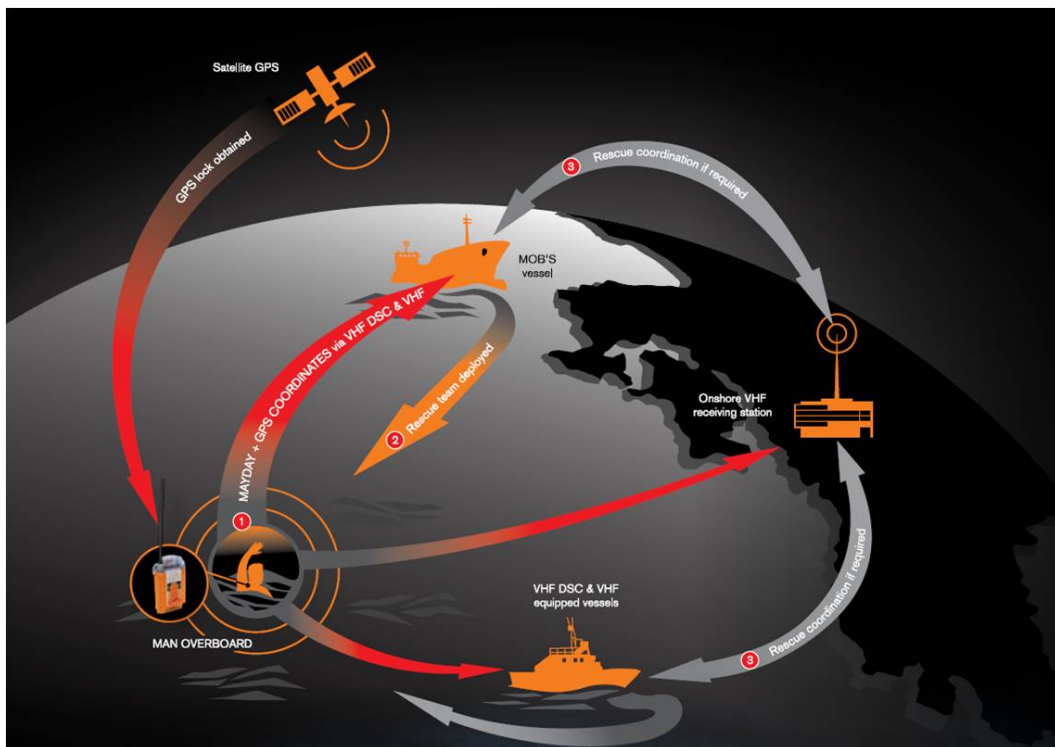


Figure 1: Crewsafe V100 Rescue Diagram

<sup>1</sup> Device is language programmable and non-DSC transmission channels can be configured as required.

## Who can receive a distress message?

All marine Search and Rescue authorities and all SOLAS-compliant commercial vessels are equipped with VHF DSC radios, many leisure or recreational craft also have a VHF radio on board. This ensures that the distress alert transmitted by the Crewsafe V100 can be received by a wide range of vessels and rescue personnel simultaneously.

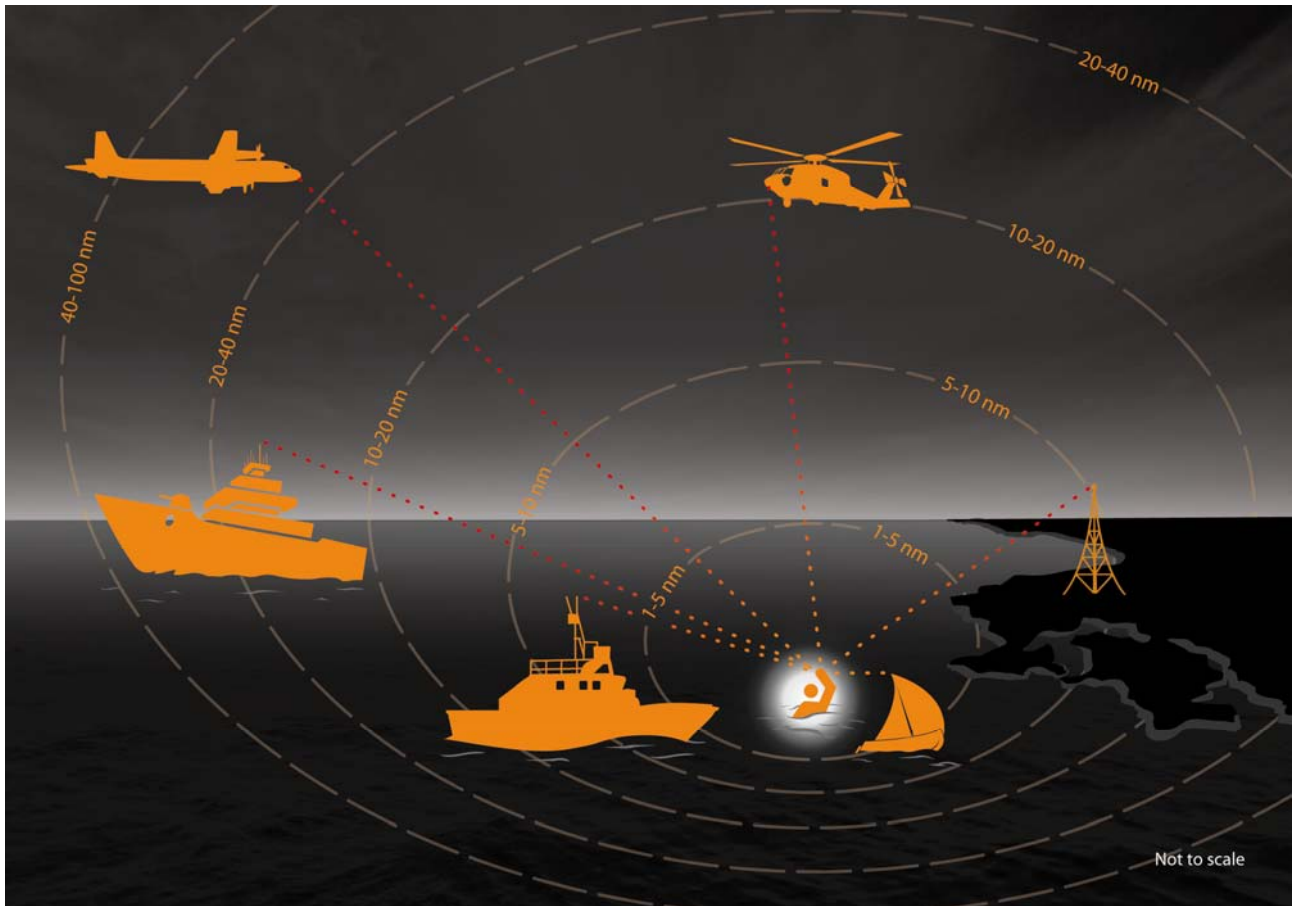


Figure 2: Crewsafe V100 Alerting Radius

Unlike older alerting technologies that are unable to send unique positioning and identification information, the Crewsafe V100 alert includes real-time GPS coordinates of the person in the water and the device's unique identification number.

The transmission delivers the following information directly to the radio operator:

- Nature of the distress – man overboard
- MMSI number - the device's unique 9-digit Maritime Mobile Service Identity (MMSI)
- Time – when the message was sent
- Current position - latitude and longitude coordinates

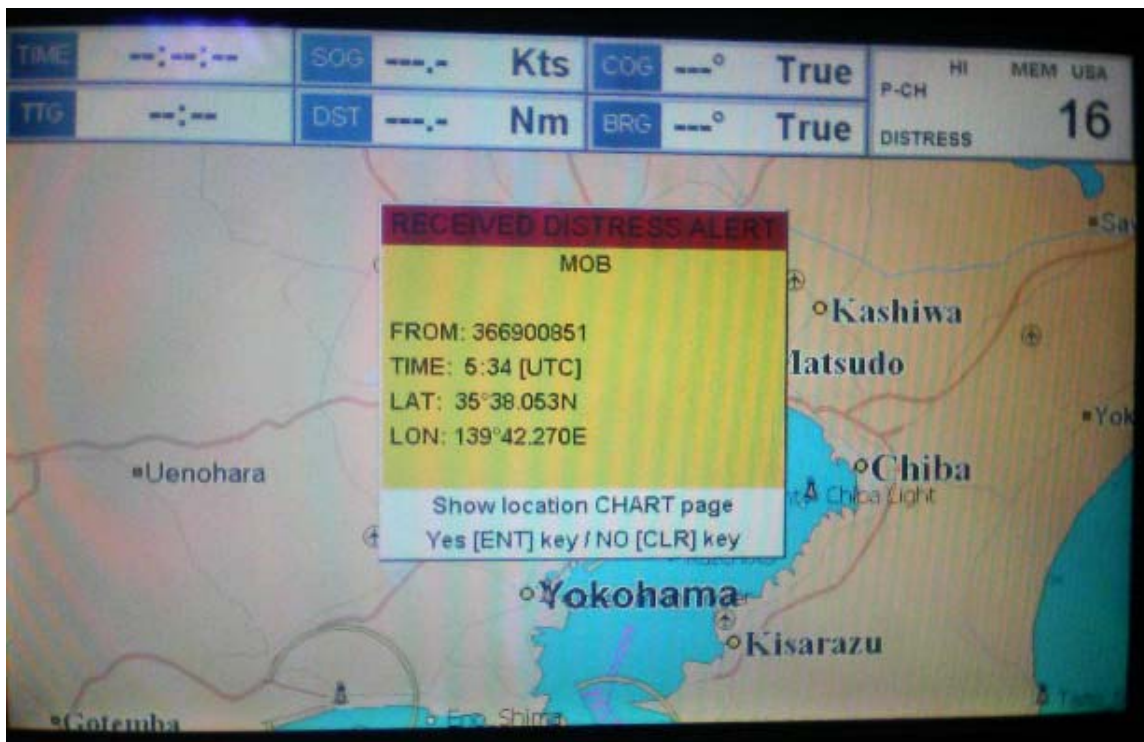


Figure 3: Position output to a connected chart plotter

Once the distress alert has been received, the radio operator should follow normal acknowledgement and response procedures.

# USING THE CREWSAFE V100



Figure 4: Crewsafe V100 features and controls

## Arming the Crewsafe V100 for Water Activation

1. Slide the Arming Switch down to the READY position.
2. (Optional) Place the Switch Lock over the Arming Switch to lock it in the correct position for automatic water activation.

The Crewsafe V100 is now ready for use and the water sensors on the base of the unit will activate the device if submerged in water for 5 seconds.

## Activating the Crewsafe V100 from the READY Position

The device is automatically activated from the READY position after submersion in water for 5 seconds.

- The in-built voice enunciator warns the wearer that the V100 has been activated.
- The delay from initial activation to transmission of the initial distress alert is approximately 10 seconds to enable the device to be turned off if it has been inadvertently activated.

If the device has been inadvertently activated;

- 1. Return the Arming Switch to the OFF position to deactivate the device and prevent any emergency message from being transmitted.**
- 2. Re-arm the device by sliding the Arming Switch down to the READY position.**

## Manually activating the Crewsafe V100

The Crewsafe V100 can also be manually activated from the OFF position to transmit the man overboard distress alert and position coordinates.

- 1. Press and slide the Arming Switch down to the ON position.**

This can be performed when the Arming Switch is in the OFF or READY position.

- The in-built voice enunciator warns the wearer that the V100 has been activated.
- The delay from initial activation to transmission of the initial distress alert is approximately 10 seconds to enable the device to be turned off if it has been inadvertently activated.

- 2. Release the Flexible Antenna**

This increases the effective range of the distress alert.

- Each distress message transmission is preceded by a beep from the internal piezo sounder and is accompanied by a short message from the voice enunciator, reassuring the user that the distress messages are being transmitted.

The strobe light flashes once per second when the device is active to assist the visual locating of the casualty.

## **Turning Off or Deactivating the Crewsafe V100**

1. Return the Arming Switch to the OFF position at any time to deactivate the alarm.

## **Testing the V100**

The Crewsafe V100 Test Button allows the user to perform test functions such as check battery life, GPS signal reception, water activation and radio transmitter functions and these should be tested every 12 months.

Annual service options are also available to fully inspect and recertify the Crewsafe V100.

# **FIND OUT MORE ABOUT MOBILARM**

**[www.mobilarm.com](http://www.mobilarm.com)**

Visit the Mobilarm website for more detailed information about the Crewsafe V100 and the other man overboard and crew safety systems available from Mobilarm.

Product images and marketing material: [www.mobilarm.com/page/media\\_centre.html](http://www.mobilarm.com/page/media_centre.html)