

GEAR

Nautilus Lifeline

Let no diver be left behind.

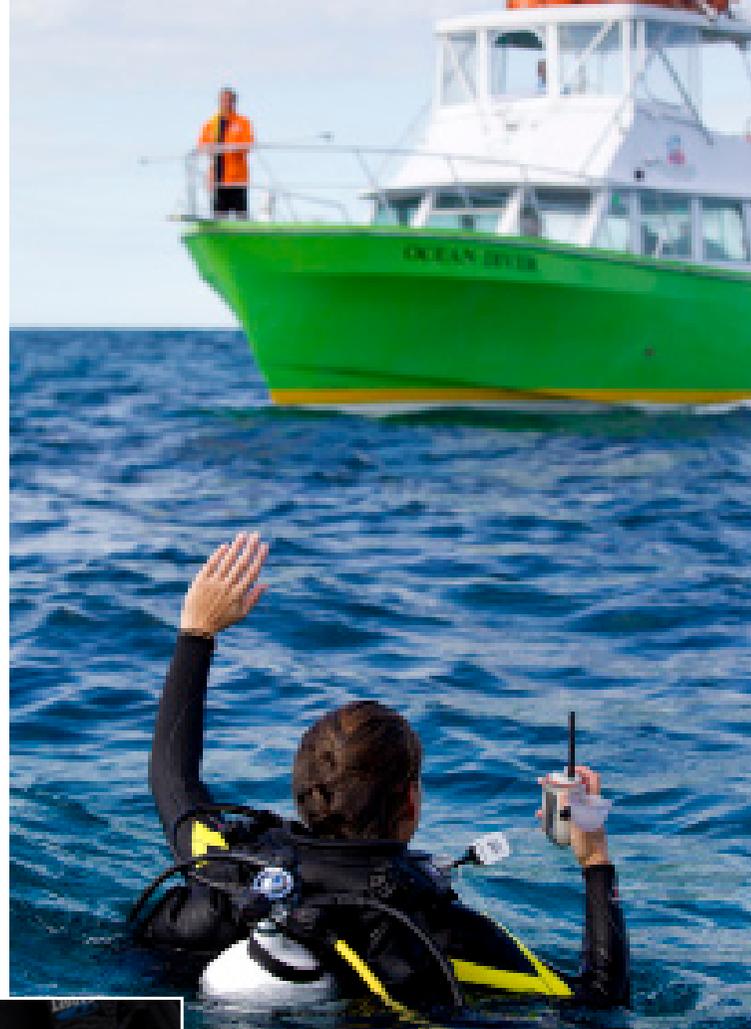
TEXT AND PHOTOS
BY STEPHEN FRINK

Of all the things divers fear, none looms more frightening than the prospect of being stranded at sea. It's not an idle concern, for no matter how many safety precautions are taken by boat operators, it happens. Hollywood even made a 2004 movie about it, *Open Water*; its story is loosely based on a true-life incident about two divers left behind by their dive boat, never to be found again.

In the Summer 2010 issue of *Alert Diver*, we looked at all of the surface signaling options available to divers. But in November 2010, a revolutionary new safety product was introduced to the market that offers divers the ability to send a GPS-specific distress signal and stay in two-way contact with responding boats. It is called the Nautilus Lifeline.

Its inventor is Mike Lever, a liveaboard boat captain with more than 19 years experience running operations in the sometimes-challenging conditions of British Columbia and offshore Pacific islands. Lever is relentless when it comes to safety, yet the thought of leaving a diver behind keeps him awake at night.

"I know that despite all the best intentions, stuff happens," said Lever. "When it does, it's usually the result of something painfully simple. Maybe a diver is just 100 feet from the stern, but the seas are a bit too bumpy to see him or a



current too strong for him to fight. If the diver is able to signal the boat, it's an easy fix. If not, things get dire quickly."

Lever spent years examining potential solutions to lost-diver scenarios, yet every one of them fell short. Transmitters sending signals to a base unit severely restricted potential options because not every boat able to render assistance would receive the signal. Transmissions to satellites created a delay that rendered the information useless by the time it was received. Lever's eureka moment occurred when he finally asked himself one very simple question: What is common to virtually every commercial boat in the world?

"A VHF radio!" said Lever. "Almost every commercial boat on the water has a VHF radio. If the diver can use that to communicate in real-time with boats in a given area, the odds of him being picked up quickly are exponentially improved."

The revelation became the idea behind the Nautilus Lifeline.

TECHNOLOGY MEETS OPPORTUNITY

The idea was one on which Lever worked for years, but the final piece that would bring all boats together eluded him. That piece came close when the Federal Communications

Commission (FCC) required that digital selective calling (DSC) protocols be included in all new VHF radios. The piece fell fully into place in February 2009, when DSC compliance became the international standard, required by law by the International Telecommunication Union (ITU).

Why was this critical? By the time the technology became law, the FCC requirement had been in place for years, meaning that any radio purchased in the last seven or eight years is almost certainly DSC-compliant. Each DSC radio is encoded with a unique nine-digit ID called a Maritime Mobile Service Identity (MMSI) that functions much like a cell phone number. Once registered, the information is entered into the U.S. Coast Guard's national distress database. DSC radios are capable of sending emergency "mayday" signals that identify the radio, and if the radio is GPS-enabled, it can also send its precise location. Lever knew that if he could find a way to utilize that technology for divers, they'd have an unprecedented ability to communicate with not only the boat from which they dive, but any area boat in the event of an emergency.

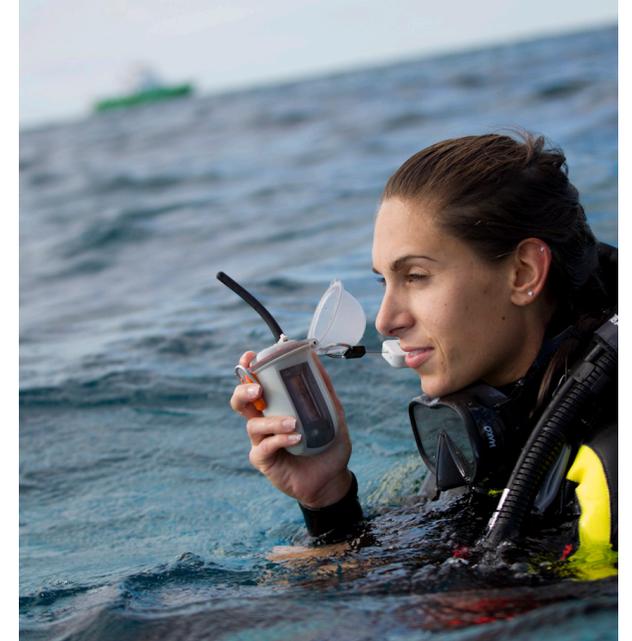
It was from this remarkable seed a very sophisticated personal safety device grew: the Nautilus Lifeline.

HOW DOES IT WORK?

The Nautilus Lifeline incorporates a personal DSC-version VHF radio into a compact, waterproof enclosure not much larger than a smartphone. With the clamshell latched, the unit can be taken as deep as 425 feet. On the surface, it can be opened to access the radio and GPS-beacon controls, all still waterproof to surface splash. The antenna pops up, and robust push-button controls engage the various functionalities, allowing divers to talk to their base boat with the two-way radio or, in an emergency, alert boats for miles around to their situation and location.

It accomplishes this remarkable communication through several built-in functions:

- **Chat button.** This can be preselected to a given VHF frequency to allow for two-way communication between divers or between divers and the boat.
- **Boat button.** This button also allows communication with the boat, but it automatically uses Channel 16, the international hail-and-distress channel.
- **Distress button.** Pressing the button for 3 seconds initiates a DCS transmission of distress, sending and displaying an emergency message and your GPS coordinates on other vessels' marine radios within an eight-mile radius.
- **LCD display.** On the side of the unit is a clearly legible readout for GPS position, signal lock, the channel in use, remaining battery power and other important information.
- **Speaker and microphone.** Used to send and receive



messages while floating on the surface, these features are actually submersible to 3 feet without the clamshell closed.

- **USB port.** Used for charging, downloading software updates, logging dive sites onto Google maps or other advanced options.
- **Battery.** Powered by an 1850 MAh lithium-ion battery, it provides 24 hours of power in distress mode.

In use, the Nautilus Lifeline will likely be tethered to a diver's BCD for easy reach and the prevention of losing it while in use. It is small and virtually weightless underwater. Maintenance is simple; since the unit is waterproof, a postdive, freshwater rinse should keep it in working order (though, of course, you should conduct a pre-dive check like you would any piece of equipment).

The Nautilus Lifeline charges via the USB port, which conveniently uses either a standard 110/220-volt AC adapter, or it can be plugged directly into a PC or Mac laptop. The GPS display is easy to read, and the radio's audio is excellent, whether transmitting or receiving. The ergonomics of the clamshell latch, antenna deployment and button navigation are logical and reliable.

The Nautilus Lifeline is unlike any other safety device on the market today. It utilizes modern marine-safety technology and makes it available to every person in and on the water. Divers and boaters are no longer reliant on someone else to send a distress signal in the event of an emergency; that ability can now rest in each individual's hand.

For more information, see www.nautiluslifeline.com; to order a Nautilus Lifeline, visit www.DAN.org/lifeline. AD

SPECIAL OFFER

The Nautilus Lifeline will be available for sale in April 2011, and DAN is offering all divers a special pre-purchase price on all orders placed by March 15. Don't miss it; pre-order your Nautilus Lifeline at www.DAN.org/lifeline.