

Acquisition Update: U.S. Achieves Highest Coverage Standard With Rescue 21 System

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The Coast Guard has analyzed the prime coverage zones of the coastal portion of its new search and rescue communications system and determined the system provides over 90 percent coverage for VHF distress communications and Direction Finding within 20 miles of the Atlantic, Pacific and Gulf coasts as well as the shorelines of Hawaii, Puerto Rico, Guam, the U.S. Virgin Islands and the Northern Marianas Islands of Saipan, Tinian and Rota.



The Coast Guard's Rescue 21 direction-finding communications system has achieved Sea Area A1 standards, indicating that radio communications coverage can be expected within 20 miles of most of the U.S. coast. Graphic courtesy of General Dynamics C4 Systems.

Based on the demonstrated performance of the Rescue 21 system, and applicable requirements of the International Convention for the Safety of Life at Sea, the Coast Guard has declared that specified areas off the coast of the United States, excluding Alaska, offer the highest level of radio communications coverage, Sea Area A1. Sea Area A1 is one of four designations defined by the SOLAS international maritime convention to describe the availability of communications coverage in a given area. The Sea Area A1 designation indicates that an area has nearly complete radio communications coverage. Although not included in this designation, the Coast Guard has deployed similar capabilities along the Great Lakes.

The Rescue 21 system consists of strategically placed VHF coast stations that provide a nearly continuous watch on Digital Selective Calling channel 70 for receiving and responding to digital distress alerts. Features that facilitate search and rescue operations include its direction-finding function and DSC alerting. The direction-finding function provides a line of bearing to the source of any radio transmission received by the system, giving rescue teams an idea of where to begin a search, even if the caller cannot provide a location. DSC alerting allows mariners that have previously registered their marine radios to voicelessly transmit vessel position and other vital information to the Coast Guard at the push of a button.

Rescue 21 also helps watchstanders understand garbled or weak transmissions by instantly re-playing radio calls, reducing background noise and sharpening sound quality.

After testing and analysis conducted in July 2014, the Coast Guard determined that Rescue 21 provides over 90 percent coverage for direction finding and 94 percent coverage for voice and DSC communications within 20 miles of the U.S. coastline if the caller is using a 1-watt handheld radio. The coverage increases to 95 percent or higher if the caller is using a stronger transmitter. Testing also found the Rescue 21 system to be extremely reliable. The report stated that the system is functional more than 99 percent of the time. As a result, missed calls due to system failure are unlikely.

The Coast Guard urges all mariners to be sure that they have obtained and are using a proper Maritime Mobile Service Identity, and that their DSC radios have built-in or are connected to Global Positioning System devices. Assuring that a DSC alert is accompanied by both a properly registered MMSI and a GPS location significantly enhances and expedites search and rescue efforts.