

## **Boeing Combat Search and Rescue System Moved to U.S. Navy 'Procure' Status Following Recent Demonstration**

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The Boeing Combat Survivor Evader Locator (CSEL), a revolutionary new combat search and rescue communications system, is one step closer to operational reality following a recent live demonstration of the system to key U.S. Navy and Marine Corps decision makers.

The CSEL system's unique capabilities were recently demonstrated to members of the Aircrew Systems Operational Advisory Group (OAG). The OAG, comprised of Navy and Marine Corps fleet requirements officers, program managers and engineering/logistics technical personnel, identifies and prioritizes fleet requirements for the U.S. government agencies that are responsible for the development of aircrew systems.

The system performed "flawlessly," according to CSEL Program Manager Bruce Major. A UHF base station in Anaheim monitored message traffic between handheld radios (HHRs), a satellite 23,000 miles above Guam and a portable base station, demonstrating CSEL's unique over-the-horizon (OTH) capability to pass secure text messages between a survivor/evader on the ground and rescue forces.

"The attendees have a much better understanding of the system's capabilities and have seen evidence that we are making excellent progress towards fielding a system that will meet their requirements," Major said.

As a result of the demonstration, the OAG has moved CSEL from "monitor" to "procure" status - an important step that is likely to put CSEL in the hands of Naval and Marine Corps aviators and special warfare units sooner than originally planned.

The decision to move CSEL to procure status was based in part on the group's observation of the system's effectiveness in meeting all stated requirements, according to Lt. Cmdr. Tracy Conroy, a program officer from Space and Naval Warfare Systems Center, San Diego (SSC San Diego), the program office responsible for U.S. Navy technical involvement with CSEL.

"Many questions the OAG had were alleviated," Conroy said. "Seeing a radio unit in hand that worked as advertised was very helpful."

The first of 200 second-generation handheld radio units, a critical component of the CSEL system, were delivered to the U.S. Air Force in April. The remaining units will be delivered over the next two months. The radios will be used for development, field and logistics testing this summer. Fielding of the system is scheduled for fiscal year 2002.

The need for an improved combat search and rescue capability grew out of deficiencies identified in Bosnia as well as in previous operations in Southeast Asia and Desert Storm where inaccurate situational awareness information contributed to loss of personnel and equipment. The Boeing Company and the U.S. Air Force's Space & Missile Systems Center began CSEL development in 1996 as a fast-track acquisition reform initiative. The system is designed to take the search out of search and rescue by reducing time and uncertainty in combat search and rescue missions.

Current survival radios are only effective if friendly forces are within line-of-sight (LOS) and offer little to counter the possibility of enemy intercept or jamming. The three-tiered CSEL system is comprised of OTH relay, ground and user equipment segments that provide downed aircrew members or isolated personnel the ability to communicate over the horizon with search and rescue forces around the globe.

CSEL features a precise military Global Positioning System (GPS) receiver that is integrated with the OTH module in a battery-powered, handheld unit. This combination enables the downed crewmember to transmit his or her precise GPS location to rescue forces.

The system connects joint rescue centers in every theater through a secure data network that integrates existing rescue resources, including Search and Rescue Satellite-Aided Tracking (SARSAT) with other government OTH systems to provide a redundant and reliable network. This network enables search and rescue forces to locate, positively identify and communicate with downed personnel before the recovery phase is initiated, dramatically improving the probability of a safe rescue and simultaneously providing assurance to the downed individual that rescue efforts are under way.

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