

Combat Survivor Evader Locator (CSEL) and the PRC Family of Handheld Survivor Radios

Executive Summary

CSEL

- The Combat Survivor Evader Locator (CSEL) program continued development of a Web-based rescue center application that reduces Air Operations Center support. The program is also developing Terminal Area Communication and Terminal Area Guidance capabilities.
- A highly publicized rescue of two Army pilots in Iraq demonstrated the importance and value of a robust, secure, precision-location, data radio that can locate, authenticate, and communicate in a matter of minutes.
- The Services should fully support CSEL development efforts by providing stable funding and sufficient support to complete adequate operational testing of the developed CSEL capabilities.

PRC

- Operational units continued small scale procurement of commercial PRC radios as a gap filler, but continue to incur the risk of an increasing number of radio variants with an inherent higher level of required support.

System

The CSEL is a radio system that allows a survivor to contact rescue forces, report status, and communicate for recovery. It includes:

- A handheld radio that includes a military Global Positioning System (GPS) receiver and navigation system
- A satellite communication system
- Encrypted data and voice capability on multiple programmable frequencies
- Ultra High Frequency base station computers that route the data messages to rescue command and control elements
- Equipment to program and update the handheld radios

PRC radios are similar to CSEL radios. The Services fielded several variants of PRC radios, including the 112B, 112D, 112G J001, and 112G J002. PRC radios include:



- Commercial GPS and navigation system
- Line-of-sight communication with unique receivers carried on theater force aircraft
- Commercially-encrypted data and voice capabilities on programmable frequencies
- The PRC-112G J002 incorporates new features including an over-the-horizon data messaging capability, more software-programmable waveforms for beacons and messages, and an option for military-only GPS.

Mission

Rescue forces equipped with CSEL or PRC 112 systems use them to identify, locate, and authenticate isolated persons quickly and accurately.

- Survivors use the CSEL to send a data message via satellite to a central rescue center. The center forwards that message to rescue forces, who then communicate with the survivor via voice communications to facilitate recovery.
- Survivors use the PRC to send a data message that is received by aircraft pre-positioned in theater and specially equipped to receive PRC messages. These aircraft may be rescue forces or support aircraft that pass the messages to rescue forces. Rescue forces contact the survivor via either data or voice communications, in order to facilitate recovery.

Activity

CSEL

- The CSEL program delayed testing of a Web-based application from FY07 until FY08. Program management changes within the Air Force and required contract re-negotiations triggered the changes. The Web-based application is intended to create “virtual” rescue centers at any location where a secure Internet terminal exists. This

capability should allow the large-scale air operations centers to remove rescue center consoles as needed and reduce required operations center support.

- The CSEL program outlined new approaches for developing, testing, and fielding two new capabilities: TAC for Army and Navy units and TAG for Air Force units. Operational test participants identified these capabilities as the most important

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new capabilities to pursue. Development is underway and testing is planned for 2009.

PRC

- The Army and Navy continue to replace legacy radios with CSEL radios. Some Air Force units are replacing legacy radios with CSEL while others await the TAG capability.

Assessment

CSEL

- DOT&E approved the current Web-based application development and test strategy. The program is implementing DOT&E inputs for the TAC/TAG test strategies. CSEL continues to experience delays in development and fielding that reflect unstable Service funding.
- In a highly-publicized incident, the Army rescued two Kiowa Warrior pilots equipped with a CSEL radio who were shot down and surrounded by 20-30 enemy combatants while on patrol in Iraq. This rescue would not have been successful

without a robust, secure, precision-location, data radio that can locate, authenticate, and communicate in a matter of minutes.

PRC

- Updates and improvements to PRC radios continue but procurement of annually-updated commercial PRC radios adds to the number of radio variants in operational units, thus complicating supportability (training, maintenance, and programming), and decreasing interoperability because the new radios are not backwards compatible.

Recommendations

- Status of Previous Recommendations. The program office is addressing the previous DOT&E recommendations.
- FY07 Recommendation.
 1. The Services should fully support CSEL development efforts by providing stable funding and sufficient support to complete adequate operational testing of the developed CSEL capabilities.