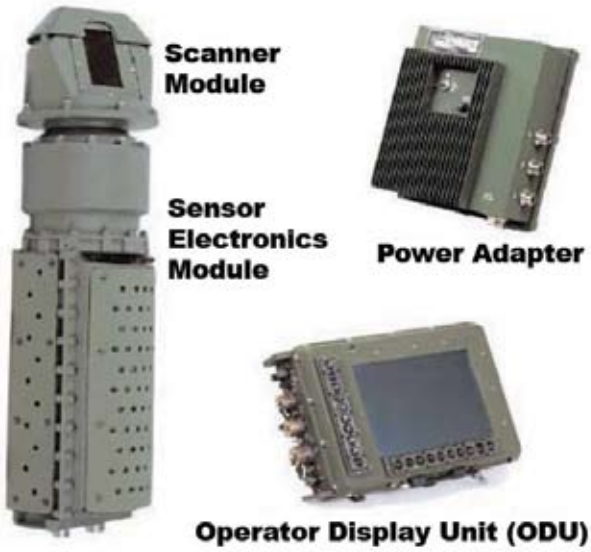
Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD)

Executive Summary

- The Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD) failed to meet its operational requirement and was rebaselined in 2003. The program is designed to have three increments. The original requirements were reduced for Increment 1 to reflect the system's performance as demonstrated by limited Army testing.
- Operational testing of Increment 1 took place in March and April 2006 in conjunction with the Joint Service Light Nuclear, Biological, and Chemical Reconnaissance System (JSLNBCRS).

System

- The JSLSCAD is an infrared passive detector that detects chemical agent vapors. Increment 1 is vehicle-mounted. Development of Increments 2 and 3 has stopped, as the commercial candidates that were being evaluated have not provided any performance improvement. The program office is currently studying new techniques that might improve the performance of Increment 1.
- JSLSCAD Increment 1 weighs 53 pounds.
- JSLSCAD is mounted on the Marine Corps' Light Armored Vehicle variant of the JSLNBCRS and the Army's Stryker NBC Reconnaissance Vehicle.
- The current plan is to refurbish 31 Increment 1 prototype systems and produce an additional 40, for a total of 71 systems for the full-rate production quantity.



- The Joint Acquisition Objective for all increments of JSLSCAD is 2,400 units.

Mission

JSLSCAD is intended to warn commanders of the impending arrival of chemical warfare agent vapor clouds. Commanders then decide on necessary protective measures.

Activity

- The Joint Program Executive Office for Chemical and Biological Defense rebaselined this program in 2003.
- In 2005, the Services revised, and the Joint Requirements Oversight Council validated, the requirement of Increment 1 to detect blister agent vapor with 70 percent probability and nerve agent vapor with 29 percent probability up to 500 meters while the platform is moving or stationary. The requirement had been 90 percent probability of detection out to 5,000 meters.
- The Single Acquisition Management Plan for the program was approved in April 2006. There is an approved Capability Production Document for Increment 1. In April 2006, DOT&E approved a Test and Evaluation Master Plan prior to the Initial Operational Test (IOT).
- JSLSCAD Increment 1 IOT was conducted as part of JSLNBCRS Multi-Service Operational Test and Evaluation (MOT&E) in March and April 2006.
- The program manager has sponsored extensive modeling and simulation studies to understand how the JSLSCAD would function in the field against live chemical agents. The outcome of this modeling and simulation is the subject of ongoing evaluation. The Joint Program Manager and lead Operational Test Agency are conducting additional modeling and simulation to characterize the detection performance of the JSLSCAD when operated with restricted fields of regard to optimize performance when stationary.

Assessment

- JSLSCAD Increment 1 did not perform well in early field tests against simulants. It detected simulants at ranges out to 500 meters instead of the intended 5,000 meters.
- When used in a vehicle-mounted configuration at full speed of 56 kilometers per hour (about 35 miles per hour), the JSLSCAD may provide no warning before entering or passing

through the vapor cloud because of its limited detection range. The system completes a search pattern in 45 seconds, and the vehicle can cover almost 750 meters in 45 seconds. If the detector can only detect out to 500 meters, the vehicle will have entered the cloud or moved beyond the cloud before JSLSCAD will alarm.

- Modeling and simulation indicate that water vapor and ozone can be significant natural interferents for the JSLSCAD Increment 1. This may hamper operational use of this system.
- The evaluation of JSLSCAD's operational effectiveness, operational suitability, survivability, as well as the adequacy of the IOT is ongoing.

Recommendations

- Status of Previous Recommendations. The FY05 recommendations were accepted.
- FY06 Recommendations. None.