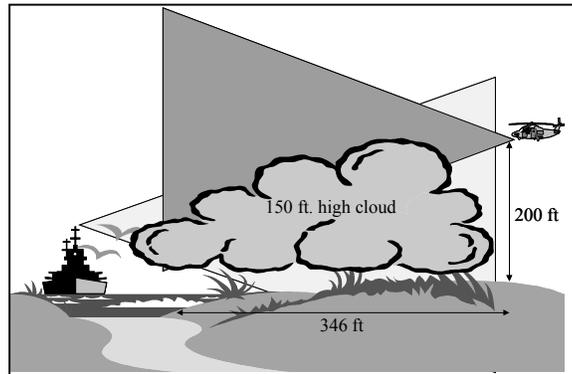


JOINT SERVICES LIGHTWEIGHT STANDOFF CHEMICAL AGENT DETECTOR (JSLSCAD)



The Joint Services Lightweight Standoff Chemical Agent Detector (JSLSCAD) is a passive device intended to provide standoff detection of chemical agent vapors up to 5 km distant (with a 10 km objective). JSLSCAD is intended to provide real-time, on-the-move, chemical agent vapor detection for contamination avoidance and reconnaissance systems. JSLSCAD is intended to detect the chemical warfare threat to U.S. Forces as documented in the Capstone System Threat Report, "Chemical and Biological Warfare Defense Systems-Non Medical," dated November 1996.

This system will be installed in fixed locations for protection of facilities and installations such as air bases. The JSLSCAD is intended to provide visual and audible indicators, to display the chemical agent class (nerve, blister, and blood), and to indicate the location (azimuth and elevation) of the detection. Detection and warning information may be entered automatically into Service Command, Control, Communications, Computers and Intelligence (C4I) systems, or the information may be reviewed and distributed manually. JSLSCAD is to be interoperable with the Joint Warning and Reporting Network (JWARN), and thus will provide chemical agent vapor detection warning for a Joint Task Force commander or a theater command and control function.

The JSLSCAD consists of four major components: scanner module, sensor electronics module, operator display unit, and power adapter. There are two configurations of the scanner module. The aerial applications scanner covers a 60 degree forward looking cone, and the ground mobile/fixed site/shipboard configurations scan 360 degrees in azimuth and +50 to -10 degrees in elevation. The system is intended to be integrated into the Joint Service Light NBC Reconnaissance System (JSLNBCRS) and the Interim Armored Vehicle-Reconnaissance Vehicle (IAV-RV), and will be employed aboard Navy landing ship docks or equivalent aviation capable amphibious ships. JSLSCAD also will be carried on Army and Navy helicopters, and outboard on selected Air Force C-130 aircraft. Present plans call for the JSLSCAD to be carried as an unmanned aerial vehicle (UAV) payload, but the UAV to be used has not been selected.

BACKGROUND INFORMATION

The current operational requirements document was approved in June 1997, and is now being revised. JSLSCAD achieved Milestone II on September 17, 1996. The TEMP for JSLSCAD was

approved in 1997, before the system came under DOT&E oversight in January 2000. A revised TEMP is being prepared.

TEST & EVALUATION ACTIVITY

JSLSCAD's engineering development tests were completed in April 2001. In 2001, the Program Manager has conducted studies and test methodologies to support future developmental and operational testing. Field methodology tests to prove the ability to release chemical simulant clouds by threat representative explosive disseminations, and by non-representative hot stack dispersals, and to prove the ability to measure the subsequent size, concentration and movement of these clouds, was held at Dugway Proving Ground during October 2001.

TEST & EVALUATION ASSESSMENT

Testing limitations include the use of simulants in Multi-service Operational Test and Evaluation (MOT&E) instead of live agent. These simulants approximate the spectral or physical characteristics of real agent, but do not entirely match actual agents. Other limitations include simulation of delivery of agent by use of explosive and line and stack release devices instead of actual weapons, and the use of a restricted C4I network warning capability instead of a full theater or Joint Task Force C4I system. Also, achieving ideal delivery conditions during testing is difficult because of the vagaries of weather, and the desired effects of the atmospheric mixing layer dictates that releases are best made during the night and early morning hours. The test site, Dugway Proving Ground, is itself a limitation in that it is an isolated, desert location that does not replicate military installations, urban areas, or many types of battlefields where JSLSCAD likely will be deployed. The Program Manager has developed test methodologies to mitigate these limitations. For example, a test methodology which entails live agent and simulant testing in a static chamber, but using simulants only to test detection ranges is being developed. Operational tests will be conducted under conditions representative of the expected employment environments with a representative friendly force and C4I network, but will be limited in that no live agent will be used (except in controlled chamber testing).

The test budget for Production Qualification Testing/Developmental Testing during FY 2002 is not fully funded. A total of \$7.3M is required; \$6.1M is funded, and the Joint Service Materiel Group has assured the Program Office that the remainder will be provided. Funding for the MOT&E in FY03 is uncertain. Recent additions to the test scheme involving extensive flying by helicopters and C-130 aircraft will add an as yet undetermined amount to the cost.