

Joint Chemical Agent Detector

Executive Summary

- In April 2009, the Joint Project Manager chose Smiths Detection's Lightweight Chemical Detector 3.3 to replace the M4 to improve chemical warfare agent detection sensitivity, reduce false alarm rate, increase battery life (to 25 hours from 12), and reduce acquisition and lifecycle costs.
- The program office conducted M4E1 developmental testing from May to October 2010.
- Integrated developmental and operational test and evaluation events included Chemical Warfare Agent Detection and Identification, Toxic Industrial Chemical Detection and Identification, Chemical Warfare Agent Detector Clear Down, and Chemical, Biological, and Radiological Contamination Survivability.
- The Army Test and Evaluation Command led a multi-service operational test at Dugway Proving Ground, Utah from July to August 2010.

System

- JCAD is a hand-held device that automatically detects, identifies, and alerts warfighters to the presence of nerve and blister vapors, as well as one blood chemical agent vapor and one toxic industrial chemical vapor.
- JCAD is a non-developmental item modified from a commercially available device. It operates as a stand-alone detector. It is carried by personnel and placed onto various platforms, including ground vehicles, at fixed-site installations, and at collective protection shelters. It supplements or replaces existing fielded chemical agent vapor detectors.
- The total Acquisition Objective for JCAD, M4 and M4E1, is 109,705 units. The JCAD will be issued to:
 - Army squads
 - Marine platoons
 - Air Force base reconnaissance, and ground-service personnel
 - Navy shore installations, and riverine or land-based units

Mission

- Units use JCAD to provide hazard level indication of chemical warfare agent and toxic industrial chemical vapors. This alerts

Activity

- In April 2009, the Joint Project Manager chose Smiths Detection's Lightweight Chemical Detector 3.3 to replace the M4 to improve chemical warfare agent detection sensitivity, reduce false alarm rate, increase battery life (to 25 hours from 12), and reduce acquisition and lifecycle costs. The Joint Project Manager intends to procure 49,705 of the enhanced



- personnel to take personal protection measures, including masking and unit force protection measures (contamination avoidance and increase in mission-level protective posture).
- JCAD is used for the following purposes:
 - Personal chemical vapor detector
 - Monitor in and around a vehicle or shelter's interior and exterior, or aircraft interior
 - Fixed installation monitor or array of monitors to provide remote alarming

Major Contractor

Smiths Detection – Edgewood, Maryland

- detector, designated the M4E1. The Joint Project Manager plans to begin production of the M4E1 in March 2011.
- DOT&E approved the JCAD Test and Evaluation Master Plan (TEMP) on July 22, 2010. It provides for side-by-side testing in both developmental and operational testing of the M4 and M4E1.

DOD PROGRAMS

- The program office conducted M4E1 developmental testing from May to October 2010.
- The integrated test and evaluation program includes the following developmental/operational test events:
 - Chemical Warfare Agent Detection and Identification
 - Toxic Industrial Chemical Detection and Identification
 - Chemical Warfare Agent Detector Clear Down
 - Chemical, Biological, and Radiological Contamination Survivability.
- The Army Test and Evaluation Command led a multi-Service operational test at Dugway Proving Ground, Utah from July to August 2010.
- All testing was conducted in accordance with the DOT&E-approved TEMP.

Assessment

- DOT&E is currently evaluating the test data and plans to publish an evaluation report to support the February 2011 production decision.

Recommendations

- Status of Previous Recommendations. There was no FY09 report for this program. In accordance with DOT&E's FY08 recommendation, the Joint Program Manager plans to conduct surveillance and inspection of the fielded JCADs beginning in October 2011. Fielded systems found to be out of compliance with the initial set-up parameters will be returned to Smiths Detection for repair.
- FY10 Recommendations. None.