

M1135 Stryker Nuclear, Biological, and Chemical Reconnaissance Vehicle (NBCRV)

Executive Summary

- The Army is conducting Reliability Growth Testing on the Stryker chassis to demonstrate improvement in reliability since IOT&E Phase I. Additional live fire testing is planned for FY10 to address threats and increased vulnerabilities, associated with the Army decision to issue Nuclear, Biological, and Chemical Reconnaissance Vehicles (NBCRVs) to support Heavy Brigade Combat Teams (BCTs) and develop a reactive armor kit for the system.
- The program manager has made progress in resolving failure modes that led to poor base vehicle reliability in IOT&E Phase I. Changes to the NBCRV configuration will continue to be made during the course of Reliability Growth Testing.
- The chemical, biological, radiological, and nuclear (CBRN) sensor suite and communication system are still experiencing failures. The sensor failure modes observed will impact operational effectiveness and should be resolved prior to IOT&E Phase II.
- IOT&E Phase II is planned for 4QFY10.

System

- The NBCRV is one of nine configurations of the Infantry Carrier Vehicle variant of the Stryker family of vehicles. Chemical, biological, and radiological sensors and communications are integrated with the Stryker vehicle to perform CBRN detection, identification, marking, sampling, and reporting of these hazards.
- The NBCRV's scalable armor provides ballistic protection against small arms, mines, and artillery fragments. The NBCRV has slat armor to protect against rocket-propelled grenade threats. The Army is developing a reactive armor kit for the NBCRV to increase survivability. The NBCRV is equipped with a filtering and over-pressure system that provides protection from CBRN threats.
- The CBRN mission equipment package includes the following:
 - Joint Biological Point Detection System
 - Joint Service Lightweight Standoff Chemical Agent Detector
 - Chemical and Biological Mass Spectrometer



- Chemical Vapor Sampling and Storage System
- NATO standard markers and deployment system
- Automatic Chemical Agent Detector Alarm
- Radiological detectors
- A NBCRV team consists of a Stryker NBCRV and a four person crew.
 - Stryker BCT has one platoon of three NBCRV teams
 - Heavy BCT has one squad of two NBCRV teams
 - Division or Corps Chemical Company has six NBCRV teams

Mission

CBRN reconnaissance units conduct route, zone, and area reconnaissance to determine the presence and extent of CBRN contamination using the CBRN reconnaissance techniques of search, survey, surveillance, and sampling. A CBRN reconnaissance unit, as part of an early entry combat force, is capable of limited independent operations.

Prime Contractor

- General Dynamics Land Systems, Sterling Heights, Michigan

Activity

- The Army conducted Reliability Growth Testing in FY09 to demonstrate improvement in reliability since IOT&E Phase I. Reliability testing will continue into FY10.
- Additional live fire testing is being planned for FY10 to address threats and increased vulnerabilities driven by the

- planned addition of a reactive armor kit and the Army decision to issue NBCRVs to support Heavy BCTs.
- IOT&E Phase II is planned for 4QFY10.

ARMY PROGRAMS

Assessment

- Data from Phase I of the Reliability Growth Testing indicates that the major base vehicle failure modes observed during IOT&E Phase I have been mitigated. The system contractor is working to address several new base vehicle failure modes that occurred during Phase I of the Reliability Growth Testing.
- The CBRN sensor suite and communication system are still experiencing failures. The sensor failure modes observed will impact operational effectiveness if they are not resolved prior to IOT&E Phase II.

Recommendations

- Status of Previous Recommendations. There are no outstanding previous recommendations.
- FY09 Recommendations.
 1. The program manager should ensure failure modes identified during Reliability Growth Testing are resolved to improve system reliability and to reduce risk prior to the initiation of IOT&E Phase II. Due to configuration changes planned after the first two phases of Reliability Growth Testing, all three planned phases of Reliability Growth Testing should be conducted.
 2. The Army should include sufficient miles in IOT&E Phase II to evaluate operational reliability of the final configuration proposed for full-rate production.
 3. The program manager must submit an updated Test and Evaluation Master Plan for approval that addresses additional testing to be conducted.