

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

Executive Summary

- Government developmental testing in 1QFY06 indicates that performance, safety, and reliability improvements are needed before fielding.
- Stryker – Nuclear, Biological, and Chemical Reconnaissance Vehicle (NBCRV) performance during the September/October 2006 Initial Operational Test will provide much of the basis for the full-rate production decision in July 2007.
- The Stryker NBCRV LFT&E program is currently ongoing.

System

- The NBCRV is one of ten specialized systems of the Stryker family of vehicles in the Stryker Brigade Combat Team. The NBCRV uses a modified Infantry Carrier Vehicle chassis.
- NBC sensors and communications are integrated with the Stryker base vehicle to perform NBC detection, identification, marking, sampling, and reporting of NBC hazards.
- The NBCRV's armor provides ballistic protection to the crew against small arms, mines, and artillery fragments. The vehicle is also equipped with a filtering and over-pressure system that provides protection from NBC threats.
- The NBC mission equipment package includes:
 - Joint Biological Point Detection System
 - Joint Service Lightweight Standoff Chemical Agent Detector
 - Chemical and Biological Mass Spectrometer liquid agent ground detector and Dual Wheeled Sampling System
 - Chemical Vapor Sampling and Storage System
 - NATO standard markers and deployment system



Mission

- Stryker Brigade NBC reconnaissance platoons will use the NBCRV to perform tactical reconnaissance and surveillance operations in support of Stryker Brigade Combat Teams. The platoon, part of the early entry combat force, is capable of independent operations or as a subordinate maneuver element within the Division or Corps.
- NBCRV teams report information to the Reconnaissance Squadron and other units within the Stryker Brigade Combat Team.

Activity

- DOT&E approved the revised NBCRV Test and Evaluation Master Plan (TEMP) in April 2006.
- Government production verification tests began in 1QFY06 and will continue through 3QFY07.
- Army testers successfully completed a test event in July 2006 to demonstrate the vehicle's capability for deployment on a C-130 transport aircraft. The crew prepared the vehicle for air transport and loaded it onto the aircraft. After the aircraft flew a standard flight pattern, the crew reconfigured the vehicle for ground operations and then performed a series of NBC reconnaissance missions.
- The Army's NBCRV LFT&E program is ongoing:
 - NBCRV-unique armor characterization began in 2QFY06.
 - The Army plans to begin executing ballistic hull and full-up system-level testing in 1QFY07.

- Battle damage assessment and repair exercises will occur concurrently with full-up system-level test events.
- NBCRV Automatic Fire Extinguishing System testing and controlled damage experimentation will commence in FY07.

Assessment

- The ability of the NBC reconnaissance platoon, equipped with NBCRVs, to accomplish missions is key to the assessment of the unit's success and will be the main focus of the Initial Operational Test.
- The mission equipment package is provided to this system as government-furnished equipment by the Joint Program Executive Office for Chemical and Biological Defense. It is not sufficient for the NBCRV program to demonstrate mere

ARMY PROGRAMS

integration without degradation of the sensors; operational testing must confirm that the NBCRV can support the brigade commander with timely warning and accurate battlefield NBC information.

- The Production Verification Test illuminated several areas where the vehicle must be improved:
 - The integration of NBC sensors with base vehicle continues to pose significant challenges to developers
 - The 400-amp alternator and drive belt system is not sufficient for the imposed loads
 - The meteorological sensor compass cannot be reliably calibrated within required tolerances
 - Crewmember speech intelligibility inside the crew compartment is hindered by ambient vehicle noise

- Crew compartment fumes cause the onboard Automatic Chemical Agent Detector Alarm to false alarm
- The vehicle climate control system struggles to maintain required crew compartment temperatures in very hot and very cold environments; important because NBC sensors operate reliably only within certain temperature ranges
- The system start-up time exceeds 55 minutes from cold start
- The evaluation of the IOT is ongoing.

Recommendations

- Status of Previous Recommendations. The Army accepted the FY05 recommendation.
- FY06 Recommendations. None