

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

Vanguard for NBC Transformation

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In wake of the 11 September 2001 terrorist attacks, the Army's ability to detect and identify NBC hazards became the center stage of Army Transformation. A key element in this transformation is the Army's Stryker Brigade Combat Team (SBCT) NBC reconnaissance force. The mission profile for the SBCT NBC forces is to—

- Sense the battlefield through reconnaissance and detection of radiological, chemical, biological, and toxic industrial chemicals/toxic industrial materials (TICs/TIMs) hazards.
- Shape the battlefield by developing and providing NBC situational awareness and contributing to the common operational picture specifically to NBC contamination and indicators of NBC use.
- Shield and sustain the forces by providing force protection and retaining dominant maneuver.

The NBCRV will transform the way we defend against NBC attacks in the future.

The NBCRV is one of 10 Stryker configurations. It is powered by a 350-horsepower diesel engine, has eight run-flat wheels with a central tire inflation system, and incorporates a vehicle height management system and a climate-control overpressure system. The NBCRV is equipped with a remote weapons station that supports the M2 .50-caliber machine gun, M6 smoke grenade launcher, and an integrated thermal weapons sight. It hosts the common Stryker communications suite that integrates the Single-Channel Ground-to-Air Radio System, the Enhanced Position Location Reporting System, the Force XXI Battle Command Brigade and Below System, and the Global Positioning System. The NBCRV provides 14.5-millimeter ballistic protection and is manned by a crew of four—a driver, a vehicle commander, and two surveyors.

As a system of systems, the NBCRV represents a significant improvement to existing NBC reconnaissance and surveillance systems within the Army. The NBCRV builds on the battle-proven Fox M93A1, integrating many of its proven capabilities and providing increased state-of-the-art technological capabilities to detect and identify NBC hazards. Legacy systems integrated into the NBCRV

include the Double-Wheel Sampling System, the Automated Chemical Agent Alarm, the AN/UDR-2 Radiac, and the Fox "tail" assembly used to collect solid samples. The NBCRV also integrates several evolutionary NBC systems not found in the Army today. These systems include the—

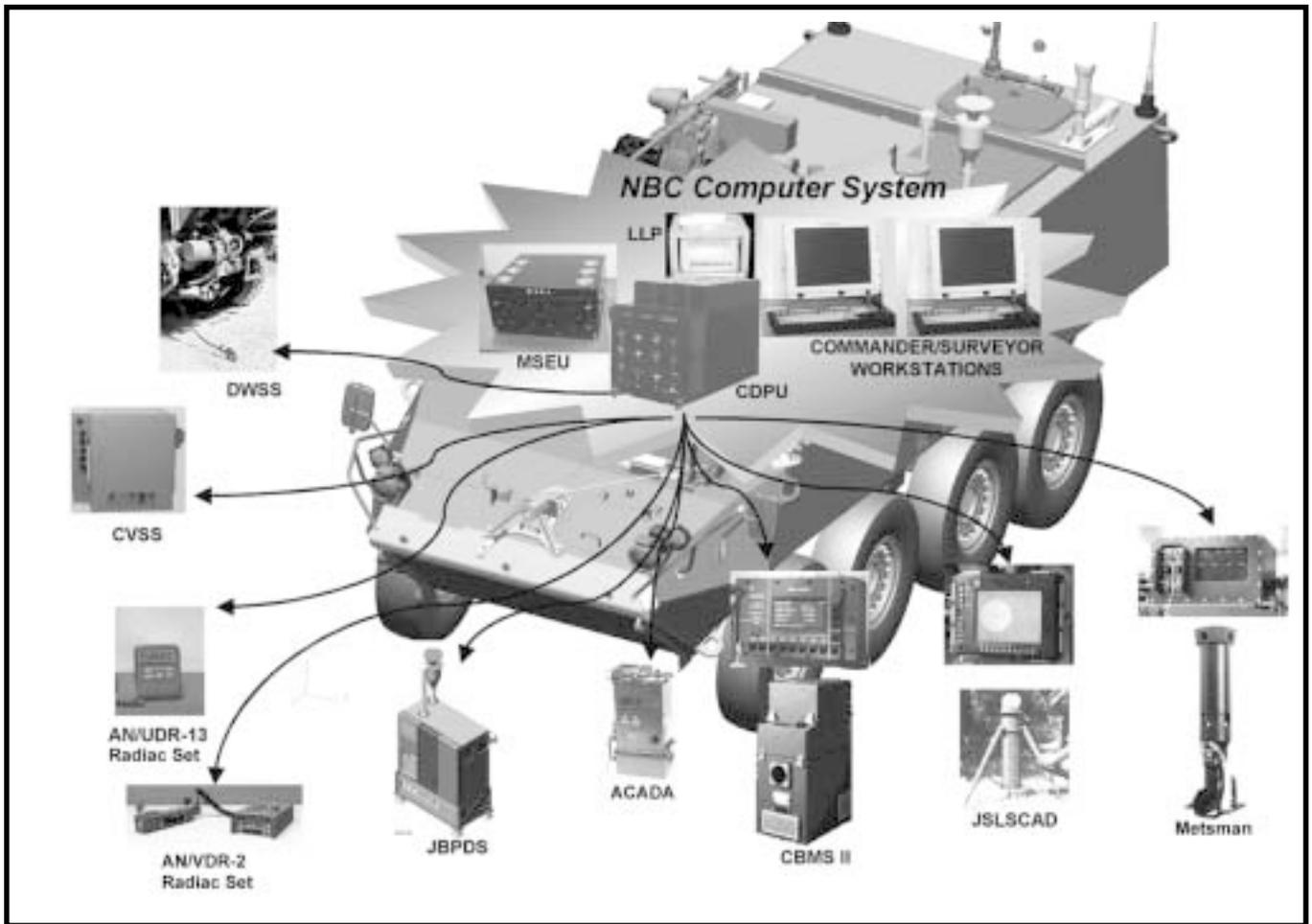
- Chemical Biological Mass Spectrometer (CBMS), Block II. The CBMS II will provide the capability to concurrently detect and identify chemical and biological agents and TICs/TIMs. This system identifies all significant chemical agents in either a liquid or vapor state.
- Joint Biological Point Detection System (JBPDS). The JBPDS will provide the capability to detect and identify biological warfare agents. It will also collect and store suspect samples for laboratory confirmation.
- Joint Service Lightweight Standoff Chemical Agent Detector (JSLSCAD). The JSLSCAD will provide the capability to scan the surrounding atmosphere for chemical warfare agent vapors. It is a lightweight, passive, and fully automatic detection system that furnishes the NBCRV with on-the-move, 360-degree coverage from a variety of tactical and reconnaissance platforms at distances up to 5 kilometers while moving.
- Chemical Vapor Sampling System (CVSS). The CVSS will automatically capture chemical vapor samples for theater Army medical labs and the continental U.S. "Gold Seal" encounter verifications.
- Metsman Meteorological System. The Metsman will measure relative wind speed and direction, air temperature, barometric pressure, relative humidity, and ground temperatures.

- Nuclear, Biological, Chemical Sensor Processing Group (NBCSPG). The NBCSPG will provide both the vehicle commander and the primary surveyor a dedicated workstation which monitors and controls all NBC sensors and devices. The NBCSPG software will automate the NBC reconnaissance mission from detection through reporting. It will interface with the Joint Warning and Reporting Network for NBC reporting using the vehicle's command, control, communications, computers, intelligence, surveillance, and reconnaissance systems. It also will provide an electronic record of all NBC-mission data to support mission playback and permanent archival.

The development of the NBCRV is a cooperative effort between the product manager for the interim armored vehicle combat support and the product manager for NBC defense systems. Together they are responsible for the system of systems integration of the NBCRV

individual sensors. The Army's Program Acquisition Strategy supports procurement of 42 NBCRVs during the next six years to support the six SBCTs and the training base. The Army is scheduled to accept the first of four developmental NBCRVs in April 2003. The Army Test and Evaluation Command will conduct production qualification testing on these platforms ensuring that they meet the criteria to enter low-rate initial production, demonstrate effective integration of the sensor suite, and show the ability to maintain effective overpressure. The 2d Interim Combat Regiment (2ICR) is the first unit scheduled to field the NBCRV in May 2005.

The NBCRV will provide the Army with a system of systems that will effectively blend proven legacy systems and state-of-the-art technological capabilities to detect and identify NBC hazards. As an integral part of the Stryker family of vehicles, the NBCRV will provide an essential foundation for the Army's Transformation Campaign Plan to the Objective Force.



The Stryker's sensing systems