

Stryker Armored Vehicle

The Stryker program was formerly called the Interim Armored Vehicle program. It is a family of medium armored vehicles intended to equip the Army's Stryker Brigade Combat Team (SBCT). Based on the Light Armored Vehicle (LAV) III it consists of two basic variants, the Infantry Carrier Vehicle (ICV) and the Mobile Gun System (MGS). The ICV is, in turn, the baseline vehicle for eight additional configurations, which are based on the same platform as the ICV. These configurations are the mortar carrier (MC), the anti-tank guided missile (ATGM) vehicle, the reconnaissance vehicle (RV), the fire support vehicle (FSV), the engineer squad vehicle (ESV), the commander's vehicle (CV), the medical evacuation vehicle (MEV), and the nuclear biological chemical reconnaissance vehicle (NBCRV).

The Army initiated the Stryker program in FY00. The mission of the SBCT is to satisfy a requirement for a combined arms team with enhanced strategic deployability, capable of immediate employment upon arrival in the area of operations, while maximizing commonality among variants. The SBCT is envisioned to be more strategically deployable than existing Army heavy forces, while having greater tactical mobility than existing light forces. While the SBCT is intended to be employable across the full spectrum of combat, the Army envisions its most likely operating environment to be small-scale contingencies in complex and urban terrain against low-end to mid-range threat forces.

In November 2000, the LAV III was selected by the Army as the Stryker platform. Most Stryker configurations were assessed by the Army to be production-ready, based on LAV III vehicles being produced for other countries. Developmental work is expected for the MGS, NBCRV, and FSV. The other configurations will integrate existing equipment. Installation of Force XXI Battle Command, Brigade and Below (FBCB2) Integrated Combat Command and Control to share battle command information and situational awareness with the combined arms team is accomplished by the Army at user sites after the contractor delivers the vehicles.

TEST & EVALUATION ACTIVITY

Stryker Test and Evaluation (T&E) activities to date have focused on Test and Evaluation Master Plan (TEMP) development to include development of an Operational Test and Live Fire Test and Evaluation (LFT&E) strategy. DOT&E approved the initial Stryker TEMP in November 2000 incorporating the details of the selected contractor's proposal and the LAV III specific configurations. An updated TEMP is currently being reviewed.

The TEMP contains provisions for a battalion minus Initial Operational Test and Evaluation (IOT&E) that will be conducted with all Stryker variants and configurations not requiring significant developmental work.

The National Defense Authorization Act of 2001 required a Comparison Evaluation to be conducted between the Stryker and the M113A3. The Comparison Evaluation took place at Fort Lewis, Washington, during September 2002. Results of this evaluation are being analyzed.

The National Defense Authorization Act of 2002 requires an Operational Evaluation (OE) to be conducted. This will take place over several



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ARMY PROGRAMS

months, culminating with a brigade deployment to Fort Polk, Louisiana, during May 2003. The OE Plan is currently being staffed within the Army and will be submitted to DOT&E for approval in 2QFY03.

The IOT&E will be conducted with two live Stryker companies and one Stryker company in simulation. Additionally, battalion and brigade level combat support and combat service support elements such as reconnaissance, engineer and anti-tank units will participate. This task force will operate under the command and control of a brigade tactical operations center with complete Army Battle Command System (ABCS) digital C4ISR systems.

All Stryker variants and configurations should be available for IOT&E with the exception of the MGS, NBCRV, and the FSV. The MC will be available with a dismounted mortar only, as a soft-recoil mortar is under development for mounted mortar firing. Additional Operational Test events are being planned for those configurations not available for the first Stryker IOT&E.

The approved LFT&E strategy includes armor coupon testing (for base vehicle armor along with Rocket-Propelled Grenade (RPG) for add-on armor), ballistic armor characterization (non-operational production structure) to address fabrication specific vulnerabilities (seams, welds, fasteners), automatic fire extinguishing system tests, and system-level testing. For the production ready configurations, the system-level tests will employ three ICVs and one each CV, RV, ESV, MC, ATGM, FSV, and MEV.

Base vehicle armor coupon testing began in FY02 and continued through FY02 as the contractor refined its armor solutions to satisfy Army requirements. Initial RPG add-on armor engineering development tests began in FY02 while anticipated delivery of production representative add-on armor sets to support testing will begin in FY03.

System-level tests of the ICV began in FY02 with ten events completed by August 31, 2002. In addition to the direct assessment of crew casualties and system damage, the test events have included simulated crew and maintainer battle damage assessment and repair. DOT&E participated in the test planning, reviewed and approved the test plans, and observed each test event.

TEST & EVALUATION ASSESSMENT

The Stryker T&E program is inherently challenging due to the need to test and evaluate ten different variants and configurations, each of which performs a different combat function. The Army has proposed a robust test program that includes all but three of the variants in the first Stryker Initial Operational Test (IOT). This will allow evaluation of system and unit effectiveness and suitability. The scope of testing for other variants depends on the extent to which common issues can be resolved in the first IOT. Additionally, each platform's performance will be dependent upon the successful integration of a variety of mission packages. Of particular interest will be the integration and performance of FBCB2 digital command and control. The organizational and operational concepts for the Stryker equipped SBCT are based upon the information superiority presumed to be provided by FBCB2 as well as the other ABCS systems. The successful integration of Government Furnished Equipment mission packages such as the M707 Striker into the FSV and the Long Range Acquisition System into the RV will be essential to the Stryker program.

The development of the MGS will likely be the greatest program challenge. The integration of the 105 mm main gun on the LAV III chassis is unproven. Since the MGS will not be ready for fielding with the first brigades, the Army is pursuing a modification to the Tube launched Optically tracked Wire guided missile to give it enhanced capability against bunkers.

The Army's assumption that the majority of the selected Stryker configurations and variants are production ready is based upon the LAV III chassis only and does not consider the total system integration of mission packages for each configuration, to include FBCB2. Much of the planned T&E effort will focus on system integration issues.