

Stryker Mobile Gun System (MGS)

Executive Summary

- The 2008 Secretary of Defense Report to Congress stated that full-rate production of the Stryker Mobile Gun System (MGS) will not be approved until the identified deficiencies are corrected. The Army delayed the FY09 MGS full-rate production decision until FY12.
- The program manager postponed the developmental/operational mission equipment package (MEP) reliability test scheduled for September 2010 until spring/summer 2011.
- DOT&E assesses the program has mitigated, by either material fixes or changes to tactics, techniques, and procedures, 11 of the 23 deficiencies identified in the 2008 Secretary of Defense Report to Congress.

System

- The Stryker Family of Vehicles consists of two variants on a common vehicle platform: Infantry Carrier Vehicle (ICV) and the MGS. There are eight configurations of the ICV variant.
- The MGS required a separate acquisition decision because the system needed additional development.
- The MGS mission equipment includes the following:
 - M68A2 105 mm cannon system with an ammunition handling system
 - Coaxial 7.62 mm machine gun and a secondary M2HB, .50-caliber machine gun
 - Full solution fire control system with two-axis stabilization
 - Low-profile turret meant to provide survivability against specified threat munitions
- The system integrates the Driver's Vision Enhancer and Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance components as government-furnished equipment.
- The MGS provides the three-man crew with varying levels of protection against small-arms, fragmenting artillery, mines, and rocket-propelled grenades (RPGs). RPG protection is



provided by add-on slat armor (high hard steel arranged in a spaced array).

Mission

- The Stryker Brigade Combat Team uses the MGS to create openings in walls, destroy bunkers and machine gun nests, and defeat sniper positions and light armor threats. The primary weapon systems are designed to be effective against a range of threats up to T-62 tanks.
- The MGS operates as a three-vehicle platoon organic to the Stryker infantry company or as a single vehicle in support of a Stryker infantry platoon.

Major Contractor

General Dynamics Land Systems – Sterling Heights, Michigan

Activity

- The program manager postponed the developmental/operational MEP reliability test scheduled for September 2010 until spring/summer 2011, with the extended low-rate initial production (E-LRIP) vehicles due to quality problems on the restarted production line.
- There were numerous system aborts during contractor testing as well as an improperly applied vehicle weld, which led to the decision to continue contractor testing to determine root cause for the failures.
- The Army Test and Evaluation Command (ATEC) conducted Engineering Change Order validation testing from September 2009 to March 2010 to assess reliability and

performance effects of an air conditioner kit and changes to production configuration components. This event supported planned future Engineering Change Order validation testing on E-LRIP vehicles from the restarted production line.

- Delays in delivery of the Stryker reactive armor tiles (SRAT II) and in live fire test planning caused a delay in the execution of the live fire testing for SRAT II. The Stryker Double V-Hull LFT&E program continues to delay the Stryker MGS SRAT II LFT&E program.
- To support a ballistic vulnerability assessment of the MGS with SRAT II, the Army completed initial risk reduction testing

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of SRAT II tiles in July 2010 and began risk reduction testing on an MGS ballistic hull and turret in September 2010.

- While the Army approved the plan for the area of the vehicle to be covered by SRAT II in December 2009, the integration of SRAT II on the MGS has not yet occurred.
- The Army, in consultation with DOT&E, submitted the third and fourth reports to Congress in January 2010 and July 2010, updating the status of actions taken by the Army to correct or mitigate all Stryker MGS deficiencies as directed in Section 115 of the Duncan Hunter National Defense Authorization Act for FY09.

Assessment

- Overall, the program has mitigated, by either material fixes or changes to tactics, techniques, and procedures, 11 of the 23 deficiencies identified in the 2008 Secretary of Defense Report to Congress. Of the remaining 12 deficiencies, solutions for nine deficiencies have been identified by the program, but the corrective actions have not yet been accomplished and validated. DOT&E considers the three deficiencies – gun pod protection, MEP reliability, and long term RPG protection – to be the highest priority for correction.
- In the 2007 Beyond Low-Rate Initial Production (BLRIP) Report, DOT&E assessed the MGS as not operationally effective when operating in a degraded capacity. The current protection of the gun pod meets the approved requirement; however, DOT&E assesses the gun pod can be easily disabled causing, the MGS to operate in a degraded capacity. When that occurs, the MGS is not operationally effective. Not upgrading gun pod protection increases MGS vulnerability, which increases the likelihood of the MGS operating in a degraded capacity. The Army has no plans to improve the gun pod's protection.

- The C-130 Transportability Key Performance Parameter is a design constraint that limits MGS capabilities. Because of size and weight constraints for transporting equipment on the C-130, there is a limitation on the size and weight of the MGS. This limit results in several survivability deficiencies including the Commander's Weapon Station, protection of 105 mm ammunition, gun pod protection, and hydraulic circuit separation. These deficiencies will potentially be addressed as part of the Stryker Modernization Program, with Milestone B planned for in FY11.

Recommendations

- Status of Previous Recommendations. The Army satisfactorily addressed one recommendation from FY09. The postponement of the MEP reliability gunnery event and delay in SRAT II testing result in the remaining recommendations not yet being addressed by the program.
- FY10 Recommendations. As part of our coordination with the Army as directed in Section 115 of the FY09 National Defense Authorization Act, DOT&E recommended that the Army:
 1. Continue to improve MEP reliability and verify corrective actions during an operational gunnery event.
 2. Finalize configuration for SRAT II and schedule live fire testing in order to validate the SRAT II design and configuration.
 3. Increase gun pod protection.
 4. Develop an audio or visual cue to indicate low ammo to the gunner for the 7.62 mm coaxial machine gun.
 5. Proceed with the Stryker Modernization Program to completely fix deficiencies identified in DOT&E's 2007 BLRIP report that require an integrated solution.