

Stryker Mobile Gun System (MGS)

Executive Summary

- During the December 2010 Stryker Double-V Hull (DVH) Configuration Steering Board, the Army decided not to pursue full-rate production for the flat-bottom Stryker Mobile Gun System (MGS).
- Developmental tests have failed to replicate the coaxial machine gun deficiency in which brass and links falling into the ammunition storage box cause the low ammunition sensor to fail to activate. This deficiency was noted in the August 2011 Engineering Change Order Block III validation gunnery and has been noted by MGS crews returning from Afghanistan and during their training gunneries.
- Live fire testing indicates performance deficiencies in the protection provided by the Stryker Reactive Armor Tiles (SRAT) II configuration for MGS. The details are classified.

System

- The Stryker Family of Vehicles consists of two variants on a common vehicle platform: Infantry Carrier Vehicle and the MGS. There are eight configurations of the Infantry Carrier Vehicle variant.
- The MGS mission equipment includes the following:
 - 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). Add-on slat armor (high hard steel arranged in a spaced array) provides RPG protection.
- 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

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

- During the December 2010 Stryker DVH Configuration Steering Board, the Army decided not to pursue full-rate production for the Stryker flat-bottom MGS. The Army determined it could not integrate the DVH design onto the MGS platform without the Stryker Modernization program to resolve weight and power shortfalls.
- A total of 142 MGSs have been produced and fielded. Three MGSs have been total losses as a result of battle damage so the current fleet has 139.
- Testing in the August 2011 Engineering Change Order Block III validation gunnery confirmed the low ammunition sensor deficiency as part of the larger deficiency, inadequate ready load for the 7.62 coaxial machine gun. This is 1 of the 5 remaining deficiencies of 23 identified in the July 2008 Acquisition Decision Memorandum.
- During 2012, the contractor was not able to replicate the coaxial machine gun low ammunition sensor deficiency in

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which brass and links falling into the ammunition storage box inadvertently triggered the low ammunition sensor.

- The Army executed multiple components of the LFT&E program for the MGS with SRAT II, including tests to characterize the protection provided by the add-on armor and full-up system-level testing to characterize SRAT II integration effects on the MGS mission equipment.
- The Army, in coordination with DOT&E, submitted the seventh report to Congress in December 2011, updating the status of actions taken by the Army to correct or mitigate all Stryker MGS deficiencies, as directed in Section 115 of the FY09 Duncan Hunter National Defense Authorization Act. The Army will issue their next report when the remaining five deficiencies are corrected.

Assessment

- The Army has yet to correct the coaxial machine gun low ammunition sensor deficiency via material fix or crew workaround. The program manager has designed a chute modification with follow-on testing to take place in December.
- Live fire testing indicates performance deficiencies in the protection provided by the SRAT II configuration for MGS. The details are classified.
- In the 2007 Beyond Low-Rate Initial Production report, DOT&E assessed the MGS as not operationally effective when operating in a degraded capacity. DOT&E assessed that the gun pod can be easily disabled, causing the MGS to operate in a degraded capacity, thereby making the MGS not

operationally effective. Lack of adequate gun pod protection makes the MGS vulnerable to widely proliferated threats including RPGs, which increases the likelihood of the MGS operating in a degraded capacity. The Army has no plans to improve gun pod 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 protection of the Commander's Weapon Station, protection of 105 mm ammunition, gun pod protection, and hydraulic circuit separation. If this program moves forward, a Stryker modernization program will have the opportunity to address these deficiencies.

Recommendations

- Status of Previous Recommendations. The Army addressed the one new recommendation from FY11.
- FY12 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. Increase gun pod protection.
 2. Provide a close out report to Congress when the RPG protection deficiency and the coaxial low ammunition sensor deficiency is corrected.