

## Stryker Double-V Hull (DVH)

### Executive Summary

- The Double-V Hull (DVH) was quickly developed, tested, and fielded in response to needs from commanders in Operation Enduring Freedom (OEF) regarding Stryker force protection/survivability shortfalls against underbody IEDs and blast threats. Testing and analysis confirm that the DVH Infantry Carrier Vehicle (ICV) (ICVV) improves Stryker vehicle protection against IEDs; the details are classified.
- The Stryker ICVV is operationally effective. There were no significant differences between the existing Strykers currently used in OEF and DVH Strykers regarding mobility and the ability of units equipped with the two types of vehicles to accomplish the mission.
- The Stryker DVH is operationally suitable. The Stryker DVH demonstrated better reliability and maintainability than the OEF variant.
- The Army Test and Evaluation Command continues to execute the non-ICV variant and DVH developmental, operational, and live fire testing through 3QFY12.

### System

- The Army intends for the Stryker DVH to provide improved survivability against IED and blast threats, beyond the protection provided by current flat-bottom Stryker vehicles with OEF kits.
- The Stryker ICVV is the base variant for seven additional configurations: the Anti-Tank Guided Missile Vehicle, the Commander's Vehicle, the Engineer Squad Vehicle, the Fire Support Vehicle, the Mortar Carrier Vehicle, the Medical Evacuation Vehicle, and the Infantry Carrier Vehicle DVH-Scout (ICVV-S). The ICVV-S is a new configuration to allow for internal stowage of the Long Range Advance Scout Surveillance System.
- The DVH configuration consists of a redesigned lower hull, energy attenuating seats, and an up-armored driver station. An upgraded suspension and driveline are incorporated because of the additional weight.
- The DVH-equipped Stryker Brigade Combat Team (SBCT) has the same mission profile as a non DVH-equipped SBCT. The Army intends to use the DVH as Theater Provided Equipment in Afghanistan, and provide the Army with a long-term capability to simultaneously deploy SBCTs into a non-permissive environment.
- The Army does not plan to purchase Stryker DVH versions of the Reconnaissance Vehicle, Mobile Gun System, or the Nuclear, Biological, Chemical Reconnaissance Vehicle.



M1126 Infantry Carrier Vehicle



M1129 Mortar Carrier Vehicle



M1130 Commanders Vehicle



M1131 Fire Support Vehicle



M1132 Engineer Squad Vehicle



M1133 Medical Evacuation Vehicle



M1134 Anti-Tank Guided Missile Vehicle

### Mission

- Combatant commanders employ a DVH-equipped SBCT as a full-spectrum combat force that conducts operations (offensive, defensive, stability, and support) against conventional or unconventional enemy forces in all types of terrain and climate conditions. In addition, it operates in all spectrums of conflict (major theater war, smaller-scale contingency, and peacetime military engagement).

### Major Contractor

General Dynamics Land Systems – Sterling Heights, Michigan

# ARMY PROGRAMS

## Activity

- The Army executed a comparison LFT&E program to compare DVH IED protection relative to existing OEF-kitted Stryker vehicles. The LFT&E program consisted of 13 full-up system-level IED events against baseline OEF-kitted Strykers, and 18 events against Stryker DVH structures, ICVV prototypes, and full-up ICVVs.
- The Army executed operational testing of Stryker DVH ICVs from January to February 2011 to characterize any degradation to reliability, availability, maintainability, and cross-country mobility, and compare DVH performance to the Strykers currently used in OEF.
- The Army Test and Evaluation Command continues to execute non-ICV configuration DVH developmental, operational, and live fire testing through 3QFY12. The Army is conducting ICVV-S operational testing, and Mortar Carrier Vehicle DVH developmental and operational testing, now through February 2012 at Yuma Proving Ground, Arizona.
- All of the live fire and operational testing executed this year, except one test, was in accordance with DOT&E-approved test plans. Phase II of the Stryker ICVV Operational Assessment was not executed in accordance with a DOT&E-approved test plan and was not adequate. While the data collection plan for Phase II was adequate, the actual collection of data was not, resulting in little usable data except for responses to surveys.

## Assessment

- The DVH was quickly developed, tested, and fielded in response to needs from commanders in OEF. Testing and analysis confirm that the ICVV improves Stryker vehicle protection against IEDs; the details are classified.
- The Stryker DVH is operationally effective. There were no significant differences between the existing Strykers currently used in OEF and DVH Strykers regarding mobility and the ability of units equipped with the two types of vehicles to accomplish the mission.
- The Stryker DVH is operationally suitable. The Stryker DVH demonstrated better reliability and maintainability than the OEF variant. During initial testing, Army evaluators identified three problems with the driver's compartment that hampered driver evacuation. The Army subsequently fixed those problems. In addition, the driver's compartment of the vehicle is too small for larger Soldiers. The Army is planning a driver's compartment redesign to improve space intrusions identified during ICVV testing.

## Recommendations

- Status of Previous Recommendations. The Army addressed all three previous recommendations.
- FY11 Recommendation.
  1. The Army should increase the driver's available space in the driver's compartment.