

Light Armored Vehicle (LAV) Upgrade

Executive Summary

- The Marine Corps has developed a special purpose kit to improve protection from under-vehicle attacks. This kit (known as the D-Kit) is designed to work with the Ballistic Protection Upgrade Package (BPUP) and is installed at the discretion of the operational commander.
- The Marine Corps completed eight system-level underbody blast tests in March 2012 at Aberdeen Test Center, Maryland; the data indicate that the D-kit increases crew protection.

System

- The Family of Light Armored Vehicles (LAV) shares a common base platform configuration (eight-wheels, armored hull, suspension, power plant, drive train, and auxiliary automotive subsystem) among eight Mission Role Variants (MRVs). The LAV-25 personnel carrier is the predominant MRV.
- The Marine Corps initiated a Service Life Extension Program in FY05 primarily to address obsolescence deficiencies. The Marine Corps undertook the Survivability Upgrade I program based on an Urgent Need Statement from the operating forces. This upgrade became the LAV A2 configuration standard, and involved developing and installing a BPUP, power pack enhancements, upgraded suspension, and other modifications.
- The BPUP system consists of three kits, two of which provide additional protection against threats, while the third provides an internal and external stowage system.
- In 2007, the Program Management LAV Office internally designed an underbody kit (known as a D-Kit) that can be incorporated to counteract under-vehicle strikes. The D-kit has been fielded since 2009.
- The LAV A2 D-Kit is designed to work with the previously installed BPUP system and is a special purpose mission kit used in theater at the discretion of the operational commander.



LAV-25 A2 Variant

The BPUP provides armor protection to the sides and front of the vehicle, whereas the D-Kit provides additional armor protection with a V-shaped hull attachment under the vehicle.

Mission

Marine Corps commanders will use LAVs to provide combined arms reconnaissance, security missions, and mobile electronic support.

Major Contractors

- General Dynamics Land Systems – Canada
- Conversion of a LAV A1 to a LAV A2 is conducted at Marine Corps Logistics Base – Albany, Georgia, and Marine Corps Logistics Base –Barstow, California

Activity

- Follow-on System-Level Underbody Testing completed in March 2012 at Aberdeen Test Center, Maryland, in accordance with the DOT&E-approved LFT&E Strategy and the Event Design Plan. The LAV Program Office provided two fully-armored LAV-25 A2 assets to test and characterize the force protection capabilities and vehicle vulnerability against underbody blast threats. The test also included Mine Resistant Ambush Protected All-Terrain Vehicle level threats, as well as threshold threats, and a single test without the D-Kit.
- DOT&E will provide a classified LFT&E report to Congress.

Assessment

- Analysis of data after completion of the Follow-on System Level Underbody Testing confirms DOT&E's assessment of emerging results from FY11.
- Testing and analysis confirm that the LAV-25 A2 D-Kit increases crew protection against some under-vehicle mine and IED strikes. The details are available in the December 2012 classified DOT&E LFT&E report.
- The location of the LAV-25 A2 fuel cell, which is centered under the rear of the vehicle, increases crew vulnerability to some under-vehicle threats.

NAVY PROGRAMS

Recommendations

- Status of Previous Recommendations. The Marine Corps is addressing the previous two recommendations through funding efforts in the Program Objective Memorandum for FY14, and is pursuing additional LAV survivability upgrades (such as blast mitigation seats, 5-point harness seat belts, and advanced suspension designs) with development and procurement slated for the FY17-20 timeframe. Additionally, the Marine Corps is actively engaged in the recommendation to consider relocating the fuel cell of the LAV-25 A2, by utilizing the LAV MRV fuel cell relocation program as a pre-cursor to a LAV-25 A2 fuel cell relocation program. The results of the MRV fuel cell relocation program will aid the program manager with engineering analysis for the subsequent LAV-25 A2 fuel cell relocation.
- FY12 Recommendations. None.