

Bradley Engineering Change Proposal (ECP)

Executive Summary

- The Bradley Engineering Change Proposal (ECP) LFT&E was initiated to evaluate the vulnerability of ECP upgrades, which intend to restore ground clearance and integrate new network technologies and to evaluate the vulnerability of urgently fielded survivability kits, which are now part of the M2A3 configuration.
- In September 2012, the Army conducted two underbody blast tests on the M2A3 Infantry Fighting Vehicle with ECP1 components that revealed severe vehicle and occupant vulnerabilities. These two tests are not sufficient to address all of the critical survivability concerns with the Bradley Fighting Vehicle Systems (BFVS). Additional testing is required.

System

- The Bradley ECP1 intends to restore ground clearance with upgrades to the suspension and track and ECP2 intends to integrate network technologies as they become available for the following three variants of the BFVS:
 - M2A3 Infantry Fighting Vehicle
 - M3A3 Cavalry Fighting Vehicle
 - Bradley Fire Support Team with Fire Support Sensor System
- The Bradley Urban Survivability Kit I, II, and III and add-on-armor kit intend to improve vehicle and crew survivability. These kits were urgently fielded for Operation Iraqi Freedom and are now part of the M2A3 configuration.

Activity

- The Army initiated the Bradley Engineering Change Proposal (ECP) LFT&E to evaluate the vulnerability of ECP upgrades, which include an upgraded suspension, upgraded track, and new network technologies and to evaluate the vulnerability of urgently fielded survivability kits, now part of the M2A3 configuration.
- DOT&E approved the Phase 1 Bradley ECP LFT&E strategy in August 2012.
- In September 2012, the Army conducted two underbody blast tests at the Aberdeen Test Center on the M2A3 Infantry Fighting Vehicle with ECP1 components to characterize the system's vulnerability.
- The Program Office wrote a draft Test and Evaluation Master Plan (TEMP) that outlined the Bradley ECP1 operational and live fire test plans, test methods, resources, and evaluation plans. The draft TEMP is in staffing for review and approval. The Program Office will update the TEMP in 1QFY15 for ECP2.



Mission

Combatant Commanders employ BFVS-equipped Armor Brigade Combat Teams to provide protected transport of Soldiers; provide overwatching fires to support dismounted infantry and suppress an enemy; and perform missions to disrupt or destroy enemy military forces and control land areas.

Major Contractor

BAE Systems Land and Armaments – Sterling Heights, Michigan

Assessment

- Results from the first two underbody blast tests with realistic threats (as opposed to the outdated underbody requirement) conducted in September 2012 revealed severe vehicle and occupant vulnerabilities, which the Army plans to examine for possible improvement. The first two underbody tests are not sufficient to address all of the critical BFVS survivability concerns.
- Results from the first two underbody blast tests also demonstrate that survivability modifications to the Bradley Fighting Vehicle would be required if it is chosen as the platform for the Armored Multi-purpose Vehicle (AMPV) to meet the draft AMPV survivability requirement.

Recommendations

- Status of Previous Recommendations. This is the first annual report for this program.

ARMY PROGRAMS

- FY12 Recommendations.
 1. The Army must provide a comprehensive live fire strategy for DOT&E approval, which includes plans for additional tests required to comprehensively evaluate the force protection and survivability provided by the Bradley Urban Survivability Kit I, II, and III; add-on-armor kit; ECP1; and ECP2 components.
 2. The Army should correct the vulnerabilities identified during underbody blast testing prior to using the vehicles in combat situations in which underbody threats are prevalent.