

Bradley Family of Vehicles (BFoV) Engineering Change Proposal (ECP)

The Army corrected the Bradley M2A4/M7A4 deficiency identified in the October 2020 FOT&E. Units equipped with the M2A/M7A4 are operationally effective, demonstrating improved capability over the M2A3 in mechanized infantry platoons and companies. The M2/M7A4 Bradley is operationally suitable. The survivability of the M2/M7A4 in a contested environment to include a cyber-contested environment is detailed in the classified survivability annex of the Bradley M2A4/M7A4 FOT&E report published in June 2021.



System Description

Bradley Family of Vehicles (FoV) is a tracked fighting vehicle designed to provide protected transport of soldiers and direct fires to support dismounted infantry, disrupt or destroy enemy military forces, and control land areas. The Bradley FoV Engineering Change Proposal (ECP), termed M2/M7A4, includes changes intended to restore ground clearance, suspension reliability, and lost mobility, and to improve situational awareness. The M2/M7A4 maintains the survivability enhancement features found on legacy vehicles, to include the Bradley Urban Survivability Kits, Bradley Reactive Armor Tiles, and Add-on Armor Kit that the Army developed and fielded in response to Operational Needs Statements during Operation Iraqi Freedom.

Program

The Bradley FoV program is an Acquisition Category IC program. The Army delegated the acquisition decision authority to the Program Executive Officer, Ground Combat Systems. A successful materiel release decision will result in the conversion of existing M2A3, M3A3, and Operation Desert Storm – Situational Awareness versions of Bradley Fighting Vehicles into the M2A4 version, and the conversion of M7A3 Bradley Fire Support Team vehicles into the M7A4 version. The current plan is to field the M2A4 and M7A4 to four brigades. DOT&E approved an updated a Test and Evaluation Master Plan, including an LFT&E Strategy for the ECP, in July 2020, and the Bradley FoV ECP FOT&E plan in September 2020.

Major Contractor

BAE Systems Land and Armaments – Sterling Heights, Michigan.

Test Adequacy

In October 2020, the Army Operational Test Command conducted the FOT&E. The Army Operational Test Command suspended the FOT&E two days early due to an identified design deficiency.

The Army Test and Evaluation Command was still able to collect sufficient data by using data from the pilot test. Testing was adequate to inform the program manager's decision to delay a materiel release decision and work with the vendor to develop and test a solution to resolve the turret battery deficiency.

Later in FY21, the Army conducted a Gunnery Soldier Touch Point with an M2A4 and M7A4 to determine if the ECP affected the Bradley Fire Control Systems and if the vendor corrected the identified deficiency.

The M2A4 LFT&E program, conducted in two phases from 2018 to 2021 to evaluate force protection and survivability against kinetic threat engagements, was adequate and conducted in accordance with DOT&E-approved plans.

Performance

Effectiveness

Units equipped with the M2/M7A4 are operationally effective, demonstrating improved capability over the M2A3 in mechanized infantry platoons and companies. The M2/M7A4 improves leader situational awareness, allows the unit to maintain tempo while moving over restrictive and complex terrain, and allows crews to react to enemy direct fire

contact. The units equipped with the M2/M7A4 are also operationally effective at engaging and hitting targets in offensive and defensive engagements.

Suitability

The Army corrected Bradley's deficiency identified in the October 2020 FOT&E. Given also the improved reliability demonstrated in Production Verification Testing, the M2/M7A4 Bradley is operationally suitable. The heat generated in the crew and troop compartments by the vehicle engine, exhaust, and electronics is still a concern that needs to be resolved.

Survivability

The survivability of the M2/M7A4 in a contested environment to include a cyber-contested environment is detailed in the classified survivability annex of the Bradley M2A4/M7A4 FOT&E report published in June 2021.

Recommendations

The Army should address the two remaining recommendations identified in the Bradley M2A4/M7A4 FOT&E report published in June 2021:

1. Continue efforts to mitigate the excessive heating in the crew, troop, and engine compartments to improve the soldiers' physical readiness to fight.
2. Mitigate the identified vulnerabilities to kinetic and cyber threats.