Bradley Fighting Vehicle System Upgrade-A3

The M2A3 and M3A3 Bradley Fighting Vehicle System (BFVS) are improved versions of the M2A2 and M3A2 BFVS. The BFVS-A3 includes enhancements intended to improve lethality, mobility, survivability, and sustainability. Additionally, these enhancements provide increased situational awareness and digital command and control capabilities.

The mission of the BFVS is to provide mobile protected transport of an infantry squad to critical points on the battlefield and to perform cavalry scout missions. The BFVS will also provide overwatching fires to support dismounted infantry and suppress or defeat enemy tanks and other fighting vehicles. BFVS-A3 enhancements include:

- Force XXI Battle Command, Brigade and Below (FBCB2) Integrated Combat Command and Control to share battle command information and situational awareness with all components of the combined arms team.
- The improved Bradley acquisition system and commander's independent viewer, both 2nd generation Forward Looking Infrared (FLIRs), to enhance target acquisition and target engagement.
- A position navigation system with a Global Positioning System receiver and a backup inertial navigation system to enhance situational awareness.
- Integrated maintenance diagnostics and Built In Test/Built In Test Equipment.

In March 1994, the Army began the Engineering, Manufacturing, and Developing phase. Previous operational testing conducted prior to FY01 included a Limited User Test (LUT) I in December 1997; an Operational Experiment in September 1998; a Detection, Acquisition, Recognition, Identification (DARI) test in October 1998; and a LUT II in August-September 1999.

The evaluation of the M2A3 vulnerability was based on the full-up, system-level live fire test (FUSL LFT), early M2A3 ballistic shock testing, electronic fault insertion events (controlled damage tests), directed energy weapon (laser) testing, and other subsystem or component Test and Evaluation, as well as previous M2A2 Live Fire Test and Evaluation (LFT&E). The culminating LFT&E event was the FUSL LFT, conducted during the period of December 1998 through September 1999.

Improvement in operational effectiveness is attributable to the M2A3's superior capability compared to the M2A2 Operation Desert Storm to detect, identify, and hit targets and the M2A3's improved night fighting capability.

TEST & EVALUATION ACTIVITY

The BFVS-A3 Initial Operational Test and Evaluation (IOT&E) was conducted in October-November 2000 in accordance with a DOT&E approved plan. DOT&E monitored test events and conducted an independent assessment of the test results and provided an Operational and LFT&E Report to the Secretary of Defense and Congress in April 2001. Planning for possible post-Milestone III vulnerability testing is currently ongoing. Such testing could include exploring fixes to unexpected vulnerabilities revealed in the LFT&E or shock vulnerabilities of FBCB2 components.

In 2002, the Army conducted several technical test events and demonstrations to evaluate fixes for FBCB2 and other unresolved issues. The results of these tests are currently being evaluated.

TEST & EVALUATION ASSESSMENT

DOT&E assessed the M2A3 to be operationally effective, suitable, and survivable, based on the results of the IOT&E, LUT-2, and the DARI. Overall, the M2A3 showed an improved level of operational effectiveness in comparison to the M2A2 Operation Desert Storm (ODS), the most advanced currently fielded version of the BFVS. This improvement in operational effectiveness is attributable to the M2A3's superior capability compared to the M2A2 ODS to detect, identify, and hit targets and the M2A3's improved night fighting capability. However, FBCB2 digital command and control, as integrated into the M2A3, demonstrated during the IOT&E that it was neither effective nor suitable and it did not contribute to the operational effectiveness of the M2A3/M1A2 System Enhancement Package equipped force. Despite this, the M2A3 was able to demonstrate an overall improved level of operational effectiveness in comparison to the M2A2 ODS, predominately because of the capabilities of the M2A3's 2nd Generation FLIR and improved fire control system.

Field Test 5 (FT5) was conducted from July 15- September 27, 2002, at the Electronic Proving Ground, Fort Huachuca, Arizona. If the FT5 results show that integration problems continue with the M2A3, a Follow-On Operational Test and Evaluation (FOT&E) may be required. This FOT&E would focus on the operational effectiveness and suitability of the FBCB2 integration.