Bradley Fighting Vehicle System Upgrade A3

SUMMARY

- The Bradley Fighting Vehicle System (BFVS) Upgrade-A3 is in full production.
- Army and Program Manager are focused on maintaining wartime logistics readiness.
- There was no significant test and evaluation activity in 2004.
- Army will begin an extensive Bradley recapitalization effort to rebuild combat damaged vehicles and add future improvements, as Future Combat System (FCS) technologies will be integrated onto Bradley vehicles.

The M2A3 showed an improved level of operational effectiveness in the areas of detecting, identifying, and hitting targets when compared to the M2A2.

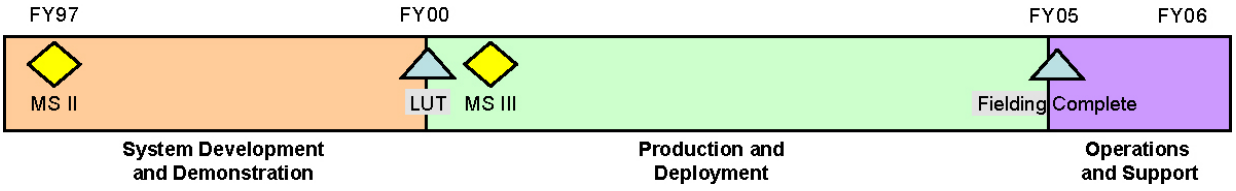
SYSTEM DESCRIPTION AND MISSION

The M2A3 and M3A3 BFVS are improved versions of the M2A2 and M3A2 BFVS, respectively. Enhancements on the BFVS-A3 improve lethality, mobility, survivability, and sustainability. Additionally, these enhancements provide increased situational awareness and digital command and control capabilities.

The BFVS is designed to provide mobile protected transport of an infantry squad to critical points on the battlefield. The BFVS is also used to perform cavalry scout missions. The BFVS provides overwatching fires in support of dismounted infantry and suppresses or defeats enemy tanks and other enemy fighting vehicles. BFVS-A3 upgrades include:

- Force XXI Battle Command Brigade and Below (FBCB2) integrated combat command and control. This system shares battle command information and provides situational awareness.
- Second generation Forward-Looking Infrared to enhance target acquisition and target engagement.
- A position navigation system with a Global Positioning System receiver and a backup inertial navigation system.
- An integrated maintenance diagnostics and built-in test equipment package.

TEST AND EVALUATION ACTIVITY



In March 1994, the Army began the engineering, manufacturing, and developmental phases. Previous operational testing included a Limited User Test (LUT) 1 in December 1997; an Operational Experiment in September 1998; a Detection, Acquisition, Recognition, Identification (DARI) Test in October 1998, and a LUT 2 in August- September 1999.

The M2A3 vulnerability evaluation was based on the full-up, system-level (FUSL) Live Fire Test and Evaluation (LFT&E); early M2A3 ballistic shock testing; electronic fault insertion events (controlled damage tests); and laser energy

weapon testing. The culminating LFT&E event was the FUSL test, conducted during the period of December 1998 through September 1999.

The Army conducted the BFVS-A3 Initial Operational Test and Evaluation (IOT&E) 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.

In 2002 and 2003, the Army conducted several technical test events and demonstrations to evaluate fixes for FBCB2.

In 2004, the Army conducted a Driver Viewer Enhancer test.

TEST AND EVALUATION ASSESSMENT

DOT&E assessed the M2A3 to be operationally effective, suitable, and survivable based on the results of the IOT&E, DARI, and the LUT 2. The M2A3 showed an improved level of operational effectiveness in the areas of detecting, identifying, and hitting targets when compared to the M2A2. The M2A3 also has improved night fighting capabilities through its second generation Forward-Looking Infrared.

Field Test 5, conducted in September 2002, at the Electronic Proving Ground, Fort Huachuca, Arizona, and cold weather testing at the Cold Regions Test Center, Alaska, revealed significant suitability problems with M2A3 FBCB2 integration. Recent technical test results indicate that FBCB2 reliability significantly improved when using a new Solid State Hard Drive instead of the standard spinning FBCB2 hard drive. A 1,500 mile follow-on production test at Aberdeen Proving Ground, Maryland, confirmed the effectiveness and suitability of this solution.

In 2004, the Army conducted a test to evaluate the Driver's Vision Enhancer. This report has not yet been submitted to DOT&E.

In 2005, the Army will begin an extensive Bradley recapitalization effort to rebuild combat damaged vehicles and add future improvements, as FCS technologies will be integrated onto Bradley vehicles.