

ARMY PROGRAMS

Army Tactical Missile System Block II / Brilliant Anti-Armor (ATACMS BAT)

The Brilliant Anti-Armor (BAT) is a self-guided submunition that uses on-board sensors to seek, identify, and engage enemy combat vehicles. Thirteen BATs are dispensed from the Army Tactical Missile System (ATACMS) Block II missile. The Army has two BAT variants. The basic BAT variant is designed to engage moving armored vehicles using acoustic and infrared sensors. The acoustic sensor acquires and guides the submunition to the moving vehicles. Once in the vicinity of a threat vehicle, the infrared sensor guides the BAT to its aim point, where it uses a tandem-shaped warhead to destroy the vehicle. This precision engagement capability is intended to provide joint U.S. and combined forces a capability to delay large moving enemy formations at depth.

The pre-planned product improvement (P³I) BAT variant incorporates a more robust counter-counter-measure system, enabling the attack of moving and stationary armor as well as surface-to-surface transporter-erector-launchers and heavy multiple rocket launchers. As with the basic BAT, P³I BAT will use acoustic sensors to initially acquire moving vehicles. Once acquired by the acoustic sensor, the P³I BAT uses its millimeter wave and imaging infrared sensor to track the target to impact. When the system engages stationary targets, the P³I BAT will use its millimeter wave and imaging infrared sensors to detect, acquire, and track a target to impact.

Both ATACMS Block II and basic BAT were approved to enter low-rate production in February 1999. The P³I BAT began development in July 1999. Due to poor performance in Operational Test, the Block II/BAT Initial Operational Test and Evaluation and the full-rate production decision were cancelled. The Army will accept approximately 90 Low-Rate Initial Production (LRIP) Block II missiles equipped with basic BAT. A portion of these missiles has been approved for conditional release to meet operational needs. The Army conducted a successful demonstration drop of a BAT from a Hunter Unmanned Aerial Vehicle, but further development and testing within the P³I BAT program is unfunded. In FY03 however, the Army did receive funding to further develop the multi-mode seeker.

TEST & EVALUATION ACTIVITIES

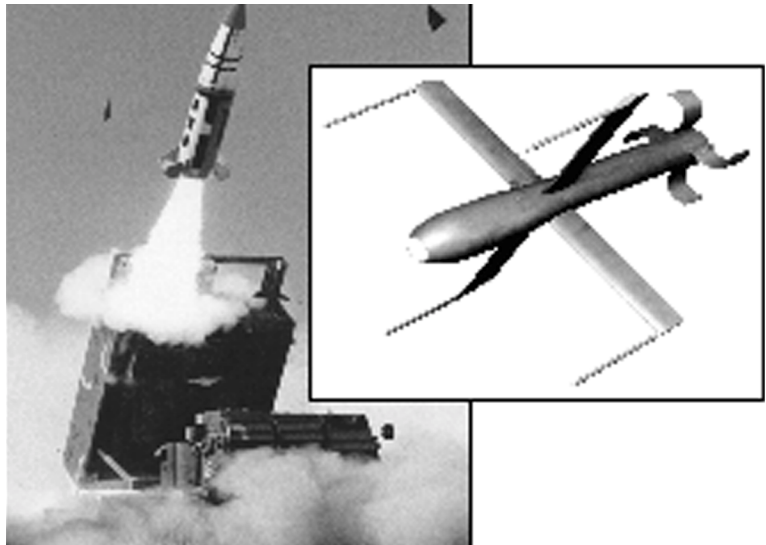
Basic BAT technical and operational testing for the past two years has focused on missile firings of the ATACMS Block II/BAT.

In the P³I BAT program, the contractor has thus far completed five recoverable BAT (RBAT) engineering tests. RBATs have similar hardware and algorithm to the P³I BAT. However, when an RBAT locks onto a target, it briefly tracks it and deploys an additional parachute so that it can be recovered. Hence, multiple tests can be conducted with the same hardware. There is only one more drop test scheduled. P³I BAT Live Fire Test and Evaluation (LFT&E) planning activities also continued in FY02.

TEST & EVALUATION ASSESSMENT

The basic BAT variant is not operationally effective against targets with realistic countermeasures and is adversely affected by high wind.

Last year, three missions were fired as part of the operational test, with limited success. In the first mission of 2001, there were no hits, resulting from poor seeker performance in the presence of Defense Intelligence Agency (DIA)-



Thirteen Brilliant Anti-Armor are dispensed from the Army Tactical Missile System Block II missile.

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approved, mid-level countermeasures on the target vehicles. The second mission was a technical test which yielded mixed results against targets equipped with the same countermeasures. The third mission was fired against a dispersed array of three armored columns without countermeasures. Four targets were hit (one of them twice) in a flank column. Analysis indicates that the BATs detected high acoustic background noise, miscalculated altitudes, and had other problems. Most of these problems were likely caused by turbulent, but realistic, air conditions.

This year, the Army executed a dual missile mission, the expected employment concept. The countermeasures for the targets included a mix of DIA- approved and unapproved measures. BATs from the first missile hit only some of the counter-measure targets. Due to a M270A1 launcher software problem, the second missile dispensed the BATs too low, so the thirteen BATs did not have the opportunity to acquire targets. The missile contractor has identified and applied a fix to the launcher software.

Early in the program, the contractor had problems with submunition reliability. The LRIP units now being delivered to Letterkenny Army Depot, however, have been 100 percent functional. The first increment of these LRIP missiles will be fielded in Korea and stored in the United States.

Missile firings to date indicate that the missile will meet its accuracy requirement and will dispense its BAT submunitions over the target area.

Although in early development, the P³I BAT RBAT series uncovered technical problems with the millimeter wave and infrared sensors. The problems have been identified and the fixes are being tested.

The LFT&E strategy for the weapon system was developed to take advantage of expected hits on armored vehicles during the planned flight tests of Basic BAT submunitions with live warheads. There have been 33 BAT drops/dispenses with live warheads that have been scored to date; seven of these have detonated on targets (including tanks and light armored vehicles). These test results, along with the detailed lethality results from the seven shots against a T-72 tank in dedicated live fire test, provided sufficient data to determine that the Basic BAT submunition does meet its lethality requirements.