GRIZZLY

Army ACAT II Program

Total Number of Systems:	366
Total Program Cost (TY$):	$3108M
Average Unit Cost (TY$):	$7.4M
Full-rate production:	1QFY03

Prime Contractor

United Defense, Limited Partnership

SYSTEM DESCRIPTION & CONTRIBUTION TO JOINT VISION 2010

The Grizzly vehicle provides an in-stride capability to overcome simple and complex linear obstacles. The system will breach a full-width, clear lane to allow maneuver force mobility through mine fields, rubble, tank ditches, wire, and other obstructions. The Army currently has no system with these capabilities. The Grizzly will be fielded in division and selected corps engineer battalions and supports the ***Army Vision 2010*** concepts of ***protect the force*** and ***decisive operations***.

The Grizzly is based on the Abrams M1 chassis, equipped with a full-width, mine clearing blade and a power-driven excavating arm. While buttoned up, a crew of two is to be able to operate all systems. The vehicle contains electric drives, an advanced open system vehicle electronic architecture, automatic depth control for the mine clearing blade, and provisions for digital battlefield command and control.

BACKGROUND INFORMATION

The Grizzly program was initiated in FY92 as a result of lessons learned during Operation Desert Storm. The Army leveraged the work conducted under an Advanced Technology Demonstrator Program. A sole-source contract was awarded to United Defense, Limited Partnership in September 1992 for DEM/VAL. Prototypes were delivered in 4QFY95. Early user experiments were conducted in February 1996, and the blade performance testing using automatic depth control was completed in November 1996. The program Milestone II decision was made in December 1996, and the system is currently in the design maturation phase of EMD. An LRIP interim program review is planned for September 2000, with full-scale production planned for 3QFY03.

TEST & EVALUATION ACTIVITY

As the Grizzly is proceeding through the design maturation phase of EMD, T&E activity has been focused on the emerging configuration of the vehicle and its subsystems, as well as the scope of T&E required to assess the system's overall effectiveness, suitability, and survivability.

Production Qualification Test Phase-I (PQT-I) began in FY98, with tests to support design decisions for the Grizzly automatic fire suppression system (AFSS). These tests utilized a full-scale mock-up of the Grizzly sub-floor compartment and internal components to evaluate AFSS effectiveness and support nozzle design and placement decisions.

PQT-I continued in FY99 with live fire tests of a full-scale Grizzly Ballistic System Structure (BSS) replicating the Grizzly hull, crew station, and mine clearing blade. BSS test objectives included demonstration of the suitability of armor designs, hatches, vision devices, shielding for exposed hydraulics and electronics, and fabrication techniques. Live Fire ballistic threats tested between April and July 1999 included small arms, rocket-propelled grenades, kinetic energy projectiles, anti-tank guided missiles, direct-fire high-explosive projectiles, mines, and fragmenting artillery shells. The selected threats addressed both system requirements and exploration of the ballistic limits of the Grizzly design.

TEST & EVALUATION ASSESSMENT

While earlier Grizzly testing contributes to the overall vulnerability evaluation, the BSS test is the first element of the DOT&E-approved Grizzly LFT&E strategy culminating in full-up, system-level testing of production representative Grizzly vehicles in FY02. The Grizzly BSS live fire test generally demonstrated protection to penetration, multi-hit requirements, and overall structural integrity of the fabricated armor shell. Observed vulnerabilities of specific components have initiated design reviews to explore fixes or alternative designs. In addition to supporting assessment of the current Grizzly configuration, BSS live fire test results, including measurements of internal ballistic shock levels, will contribute to the test designs for the EMD prototype tests in PQT-II and the production and representative tests during LRIP.

CONCLUSIONS, RECOMMENDATIONS, LESSONS LEARNED

The BSS test revealed specific vulnerabilities of external cables, hydraulic lines, the tactile depth sensor (TDS), and external video cameras for crew visibility. The contractor will propose solutions,

including shielding and redesigned housings that will be assessed during the EMD prototype and LRIP live fire test phases. The contractor, Grizzly PM, and Ground Systems Integration PM are considering possible solutions to observed vulnerabilities to expected threats exceeding the Grizzly system requirements. If adopted for Grizzly, these solutions would also be assessed through additional structure and armor live fire testing.