

Guided Multiple Launch Rocket System (GMLRS) - Unitary and DPICM

Executive Summary

- The Guided Multiple Launch Rocket System (GMLRS) with Dual-purpose Improved Conventional Munitions (DPICM) began full-rate production in June 2005.
- GMLRS Unitary was fielded to Iraq and Afghanistan based on a 2005 Urgent Needs Statement (UNS) from Central Command.
- GMLRS Unitary has been effective in-theater against point targets. In July 2006, the Army approved the additional procurement of an additional 996 rockets.
- Ongoing efforts include:
 - Developing a DPICM self-destruct fuze that meets Joint Requirements Oversight Council dud rates
 - Developing kinetic energy rods as a potential replacement for DPICM
 - Developing a common insensitive munition compliant rocket motor



System

- There are two variants of GMLRS munitions: a Unitary warhead rocket and a DPICM rocket, the M30. Both variants have ranges over 60 kilometers and use inertial guidance and the Global Positioning System (GPS) to enhance accuracy.
- The M30 rocket carries a payload of 404 DPICM submunitions. The Unitary version has a single 196-pound high explosive warhead.
- The procurement objective for GMLRS was reduced in FY06 from 140,004 Unitary and DPICM rockets to 43,560 total rockets. The ratio between Unitary and DPICM rockets is expected to be 80 percent Unitary and 20 percent DPICM.
- Both systems have common guidance and control, canards, rocket motor, and tail fins. They also have common maintenance and support systems.
- Two multiple-launch rocket system launchers, the M270A1 and High Mobility Artillery Rocket System (HIMARS), are capable of firing GMLRS rockets.

- GMLRS Unitary will have three fuze settings to attack different target types at extended ranges:
 - Proximity fuze for use against personnel in the open
 - Delay fuze for lightly fortified bunkers and structures
 - Point detonating fuze for single, lightly armored targets
- Both GMLRS rockets provide a day and night engagement capability in virtually any terrain or weather condition.

Mission

- Commanders will use GMLRS-DPICM rockets to attack lightly armored, stationary targets such as personnel, artillery, air defense, and communications sites.
- Commanders will use GMLRS Unitary rockets to attack targets requiring precise, individual aim points and reduced collateral damage.

Activity

- The Army fired 16 Unitary rockets in 12 missions as part of the Phase 2 contractor testing. There was one flight test failure due to the rocket using false data from a GPS satellite undergoing maintenance. The program office changed the rocket guidance software to prevent this in the future.
- The Army started its production qualification tests of the objective Unitary rocket in August and plans to complete

testing prior to the March 2007 Milestone C low-rate production decision review.

- First Quarter Fiscal Year 2007 testing for a self-destruct fuze for the DPICM rocket will aim at meeting the Joint Requirement Oversight Council-required dud rates. The project office is also investigating the use of kinetic rods to

replace bomblets, eliminate the occurrence of unexploded ordnance, and improve insensitive munition compliance.

- During development of insensitive munition compliant rockets, two rocket motor cases failed proof testing as part of quality control testing. Based on additional testing, the contractor will change some production processes.
- Through September 30, 2006, U.S. forces fired 122 GMLRS Unitary rockets in Iraq. The rockets achieved a high reliability rate and desired effects while minimizing collateral damage. In July 2006, the Army approved an additional 996 rockets to support current operations in Central Command Area of Operations.
- The Army is working to develop an updated Test and Evaluation Master Plan for GMLRS Unitary.

Assessment

- The May 2005 DOT&E Beyond Low-Rate Initial Production Report found GMLRS-DPICM to be operationally effective and suitable. While the DPICM rocket has a significantly lower dud rate than legacy systems, it still does not meet the DoD standard of less than 1 percent submunition dud rate. It also does not meet the standard for dud rates, as amended by the Joint Requirements Oversight Council for this munition, of less than 4 percent at ranges less than 20 km. It does meet the

Joint Requirement Oversight Council-amended standards for dud rates at ranges beyond 20 km.

- Testing of the rocket continues to show the system is highly accurate and lethal if it is aimed close to the intended target.
- Initial insensitive munition testing shows the rocket motor does not meet all levels of insensitive munition requirements. The motor will be better than existing MLRS rocket motors.
- Both DPICM and Unitary rockets are:
 - Dependent on accurate long-range sensors and targeting systems
 - Dependent on enabling command and control and airspace management architecture in an increasingly complex operational environment

Recommendations

- Status of Previous Recommendations. This report combines the FY05 DPICM and Unitary reports. The Army addressed all FY05 DOT&E recommendations for both rockets.
- FY06 Recommendation.
 1. The Army should capitalize on operational use to further develop and refine procedures for targeting, sensor-shooter links, airspace management, and command and control in order to exploit the accuracy and range of GMLRS munitions.