Multiple Launch Rocket System (MLRS) M270A1 Launcher Upgrade

The upgraded M270A1 Launcher provides an all-weather, indirect, area fire weapon system to strike high-payoff threat targets at all depths of the tactical battlefield. The M270A1 is a self-loading launcher with an onboard fire control system. The launcher is the standard U.S. Army platform for firing surface-to-surface artillery rockets and missiles. It is mounted on a mobile, tracked vehicle that carries 12 rockets in two, six-rocket Launch Pod Containers or two Army Tactical Missile System (ATACMS) missiles, which can be fired individually or sequentially.

The M270A1 program includes two major upgrades to the current M270 launcher. First is the Improved Fire Control System (IFCS), which replaces obsolete, maintenance-intensive hardware and software. It provides growth potential for future munitions and the potential for reduced launcher operation and support costs. IFCS includes a Global Positioning System-aided navigation system. Second, the Improved Launcher Mechanical System (ILMS) improves reaction times by decreasing the time to aim, fire, move, and reload the launcher. A faster drive system reduces the traverse time from the stowed position to worst-case aimpoint by approximately 80 percent and decreases the mechanical system contribution to reload time by about 40 percent.

MLRS initial operational capability occurred in 1983. To combat growing obsolescence, the Army initiated the IFCS program in FY92. In FY95, the Army began the ILMS program to address a requirement for rapid engagement of highly mobile, short-dwell targets. In FY96, the Army combined the IFCS and ILMS test programs under the M270A1 to undergo system-level testing. A Low-Rate Initial Production (LRIP) of IFCS and ILMS hardware modification kits was approved in May 1998.

In 1997 and 1998, the Army conducted a survivability program to complete survivability estimates, determine the effects of improvements on survivability of the fielded launcher, develop tactics to enhance launcher and crew survivability, and develop changes needed for the M270A1.

In July 1999, IOT&E slipped 22 months to allow the program manager time to fix problems identified in developmental testing and the Maintainability Demonstration and to include the planned replacement of the executive processors and operating system. In March 2000, DOT&E approved a revised M270A1 TEMP.

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TEST & EVALUATION ACTIVITIES

The Initial Operational Test and Evaluation (IOT&E) was conducted from August to October 2001. The IOT&E ground phase consisted of three 96-hour field exercises for one M270A1 launcher platoon, side-by-side with an M270 platoon and included the live firing of reduced-range practice rockets. The flight phase consisted of 35 M26 rockets, six extended-range rockets, and one ATACMS Block IA missile.

In October 2001, the materiel developer conducted a three-day exercise to verify that minor changes made following the IOT&E software release did not create unexpected consequences. Additional flight tests were conducted to ensure that software changes did not affect the launcher's ability to fire live munitions. Milestone III was conducted in March 2002.

DOT&E completed its assessment of the system and delivered its "Operational Test and Evaluation Report on the Multiple Launch Rocket System M270A1 Launcher" to Congress in April 2002.

TEST & EVALUATION ASSESSMENT

The M270A1 is operationally effective. It performs its operational functions without degrading the effectiveness of the current MLRS family of munitions. The launcher provides improved responsiveness and survivability over the M270 launcher.

The M270A1 is also operationally suitable. The launcher demonstrated better overall reliability than the current M270 launcher. The launcher can be operated and maintained by the current force structure of Military Occupational Specialty 13M operators and 27M/63Y maintainers.

The Ballistic Survivability Program determined that the M270A1 is less susceptible to indirect artillery fire because of its more rapid displacement after firing. However, both the M270 and M270A1 are equally susceptible to direct fire threats.

Payload sensitivity and reaction propagation tests demonstrated that payload rocket motors and warheads are major contributors to system vulnerability and that vulnerability could be reduced through modifications to the Launcher Loader Module and Launch Pod Container rocket tubes.

Testing and analysis concluded that the M270A1 and M270 are equally vulnerable. The M270A1 inherited vulnerabilities from the M270 that can result in functional kills (mobility and/or firepower) in many scenarios.