Lockheed Martin Joint Common Missile Demonstrates Ability To Penetrate And Destroy Urban Targets

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Lockheed Martin successfully tested its Joint Common Missile (JCM) multi-target warhead and fuze in a series of warhead penetration tests at the Redstone Technical Test Center, AL.

The series of four tests was designed to assess the missile's ability to penetrate and destroy Military Operations in Urban Terrain (MOUT) targets. The tests included detonation of the precursor warhead, penetration of a brick-over-block wall, and emergence of the intact warhead in an interior space, where in a tactical scenario the warhead would be detonated.

"These tests are part of our ongoing effort to thoroughly demonstrate and validate the entire Joint Common Missile system, which will give our troops capabilities that simply do not exist today," said Steve Barnoske, JCM program director at Lockheed Martin Missiles and Fire Control. "Our rigorous testing program is intended to reduce cost and schedule risk for the military services and operational risk for the end-user," he added, noting that Lockheed Martin's aggressive risk reduction efforts were among the factors behind its selection as winner of the JCM competition.

Air-gun test firings propelled four missile simulant test articles at tactical brick-over-block targets at velocities ranging from 574 to 902 feet- per-second (391 to 615 miles-per-hour) and at obliquity angles of 30 and 45 degrees. The main warhead case and the firing module both came through the wall intact.

The tests evaluated multiple performance parameters and system capabilities, particularly the ability of the main warhead and the time-delay fuze that detonates it to penetrate the wall intact. The results of the live tests were also calibrated with the predictions of earlier simulations. All test objectives were achieved. The fuze was successfully tested earlier at Eglin Air Force Base, FL, via howitzer shots that blasted it through concrete walls.

These tests demonstrate the successful penetration of a MOUT structure and the successful survival of the warhead structure and embedded firing module on the opposite side of the wall. It is part of an extensive risk reduction program under Phase 1 of the System Design and Development (SDD) contract.

The SDD program builds on a firm foundation of extensive pre-contract risk reduction tests that Lockheed Martin performed in 2003 and 2004, including two successful warhead test series at Redstone in January 2004 and howitzer fuze tests in December 2003.

The multi-target warhead and fuze, developed with General Dynamics- Ordnance and Tactical Systems (warhead) and PerkinElmer (fuze), applies cutting-edge technology to provide diverse-mission, multi-target capability. The JCM warhead and fuze provide both shaped-charge capability, to defeat armored targets; and blast fragmentation capability, for use against buildings, bunkers, small boats, lightly armored vehicles and other soft targets.

The JCM program is on schedule and on budget in Phase 1, the risk mitigation segment of the SDD contract. JCM was the first program to be approved by the Joint Requirements Oversight Committee (JROC) under the new Joint Capabilities Integration and Development System (JCIDS) process.

The JCM is the next-generation, multi-purpose, air-to-ground precision missile that will replace Hellfire, Longbow, Maverick and airborne TOW missiles in the U.S. arsenal. The long-term U.S. production run for the Army, Navy and Marine Corps is estimated at 54,000 missiles. In addition, the United Kingdom has also expressed interest in the new weapon and has been part of the development process.

To deliver the multi-purpose warhead to its target, the Lockheed Martin JCM includes a tri-mode seeker with imaging infrared, semi-active laser and millimeter wave radar capabilities for active and passive "fire-and-forget" and precision-strike targeting. This increases crew survivability and minimizes collateral damage. To further enhance crew and aircraft survivability JCM has extended range capability for standoff engagements -- 16 kilometers (10 miles) for rotary-wing and 28 kilometers (17.5 miles) for fixed-wing aircraft. JCM's design also provides maximum modularity for growth.

JCM builds on the heritage of the Hellfire missile family, which includes semi-active laser Hellfire/Longbow millimeter wave missiles, and the Javelin imaging infrared missile, all of which have been combat-proven in Afghanistan and Iraq, with a total of more than two-thousand rounds expended.

Headquartered in Bethesda, MD, Lockheed Martin employs about 130,000 people worldwide and is principally engaged in the research, design, development, manufacture and integration of advanced technology systems, products and services.

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