

Lockheed Martin's Joint Common Missile Flies On AH-64D Apache Longbow

Lockheed Martin has successfully integrated and flown the Joint Common Missile instrumented measurement vehicles (IMVs) on the Boeing AH-64D Apache Longbow attack helicopter, validating the physical and environmental interface between the missile, the M299 missile launcher and the helicopter platform.

The IMV is outfitted with sensors and instrumentation to record the environments the missile must operate under during flights. It contains an inert warhead and rocket motor to simulate a tactical round in flight.

"Successful measurement of the environments that the JCM will experience on its target platforms during pre-launch and launch operations is an important step in successful integration," said Steve Barnoske, JCM program director at Lockheed Martin Missiles and Fire Control. "JCM provides extended standoff range for all four platforms that will maximize crew survivability."

Successful integration of the JCM IMVs, the combat-proven all-digital M299 launcher and the AH-64D characterized the vibration, shock, pressure (acoustic) and temperature environments that JCM will experience, and proved the airworthiness of the JCM.

The environmental flights on the Apache are the first in a series of such integration and flight tests that will integrate JCM on the four required platforms for the U.S. Army, Navy and Marine Corps. The remaining collection of environmental data -- on the Marines' AH-1Z Super Cobra attack helicopter, the Navy's MH-60R/S Seahawk armed reconnaissance helicopter and the Navy's F/A-18E/F Super Hornet jet fighter -- will be conducted during the remainder of 2005.

"Following a successful preliminary design review and first flight back in June, we will be continuing our development, including validating the integration environments on all four required platforms over the next few months. Successful integration on these platforms is key to deriving the cost benefits of having one missile replace seven missiles on four platforms," said Rick Edwards, vice president for Tactical Missiles at Lockheed Martin Missiles and Fire Control.

JCM's tri-mode seeker and multi-purpose warhead will enable it to defeat a wider target set in a single mission on all four platforms than is currently possible," Barnoske explained. "It will also triple the loadout on the Super Hornet -- 12 JCMs replace four Mavericks and provide safe 'bring back' of unexpended weapons in carrier landings."

Lockheed Martin also supplies the M299 launcher to the Army for the Apache, which has carried and fired HELLFIRE II and Longbow HELLFIRE missiles in Iraq. JCM's aerodynamics are similar to those of HELLFIRE on Apache. Marvin Engineering of Inglewood, CA, provides the M299 hardware; the software is produced by Lockheed Martin at its facility in Ocala, FL.

The other two rotary-wing platforms, the Super Cobra and the Seahawk, will carry JCM on the M59 launcher, which is a minor modification to the M299, and is produced by Lockheed Martin and Marvin Engineering

The JCM launcher on the Super Hornet will be the LAU-145/A dual-rail launcher, supplied by EDO Corporation of North Amityville, NY. The launcher and JCM models have been fit-checked and uploaded to the aircraft, and successful wind tunnel tests have been conducted. The LAU-145/A includes a pneumatic cooling system to provide JCM sensor cooling for the fixed-wing aircraft and takes advantage of the existing J-Weapon interfaces on the Hornet.

The only weapon designed to meet eight validated critical capability gaps for the Army, Navy and Marine Corps, JCM provides fixed- and rotary-wing pilots with a precision-strike, adverse-weather weapon that can defeat a wide range of stationary and moving targets with minimal collateral damage -- a capability that does not exist today.

JCM is the next-generation, multi-purpose, air-to-ground precision missile that will replace the HELLFIRE, Longbow and Maverick air-to-ground missiles currently in the arsenal of the U.S. Army and Navy. 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.

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,

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