Lockheed Martin Demonstrates Rocket Motor Survivability In Fixed-Wing Flight Environments That Meet JAGM Requirements

ORLANDO, Fla., Aug. 17, 2011 /PRNewswire/ -- Lockheed Martin (NYSE: LMT) successfully demonstrated its Joint Air-to-Ground Missile (JAGM) minimum-smoke rocket motor on fixed-wing aircraft operating in severe weather environments.

The motor, currently slated only for carriage on rotary-wing platforms, releases minimal smoke in flight, making it more difficult for enemy ground combatants to track the missile's trail back to the aircraft. The tests were company funded and included two static firings.

"These tests prove we can meet the more stressful environmental requirements necessary for fixed-wing aircraft with the same motor we are designing for rotary-wing use," said Frank St. John, vice president of tactical missiles in Lockheed Martin's Missiles and Fire Control business. "This takes us one step closer to demonstrating we can deliver one rocket motor for all platforms, which will yield significant sustainment savings and increased operational flexibility."

During the tests, both the minimum-smoke motor and the propellant charge underwent multiple temperature shock cycles. A temperature shock cycle simulates the extreme edges of the punishing fixed-wing flight environment that a rocket motor experiences. Testing included exposure to:

- Numerous temperature shock cycles
- Maximum temperature: 160 degrees F
- Minimum temperature: -65 degrees F
- Fixed-wing buffet vibrations.

Despite the harsh conditions, the two static-fired test motors burned for full duration at cold temperature with no anomalies, and achieved a thrust ratio approximately two times greater than typical for boost/sustain motors.

"This thrust ratio enables JAGM to achieve ranges significantly beyond those of any current equivalent missiles, meeting the JAGM program range requirements of 16 kilometers from rotary-wing platforms and 28 kilometers from fixed-wing platforms with margin to spare," said John Myers, Aerojet vice president for tactical systems. Aerojet is designing Lockheed Martin's JAGM rocket motors, while Roxel is providing the propellants.

The minimum-smoke motor, designed for carriage on rotary-wing platforms, has been demonstrated to meet or exceed rotary-wing requirements in prior environmental testing.

The reduced-smoke motor, intended for use on fixed-wing platforms, is designed to withstand the harsh temperatures and shock and vibration stresses encountered in high-altitude and high-speed flight environments.

Lockheed Martin is offering two JAGM rocket motors per Government specification. The recent minimum-smoke tests are intended to demonstrate the capability of a single rocket should the Government decide to pursue that solution.

Aircraft intended to carry JAGM include the U.S. Army's AH-64D Apache attack helicopter, MQ-1C Gray Eagle unmanned aerial system (UAS), and OH-58D Cockpit And Sensor Upgrade (CASUP) Kiowa Warrior armed reconnaissance helicopter; the U.S. Marine Corps' AH-1Z Viper attack helicopter; and the U.S. Navy's MH-60R Seahawk armed reconnaissance helicopter and F/A-18E/F Super Hornet jet fighter.

Initial operational capability (IOC) of JAGM on the Apache, Viper and Super Hornet is scheduled for 2017. IOC for the Seahawk, OH-58D CASUP and Gray Eagle is 2018.

Headquartered in Bethesda, Md., Lockheed Martin is a global security company that employs about 126,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and

sustainment of advanced technology systems, products and services. The Corporation's 2010 sales from continuing operations were $45.8 billion.

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