

# Lockheed Martin, Aerojet Achieve Joint Air-To-Ground Missile (JAGM) Rocket Motor Breakthrough

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Lockheed Martin and Aerojet, a GenCorp company and teammate on the Joint Air-to-Ground Missile (JAGM) program, achieved a technological breakthrough by successfully completing full temperature range testing and validation to support a single rocket motor solution for all JAGM fixed-wing and rotary-wing platforms. The final completed tests were a series of cold temperature missile motor firings conducted in Camden, AR.

The rocket motor was manufactured to a tactical configuration using a composite motor case and conditioned to -65 degrees F, replicating the highly stressful thermal requirements of a fixed-wing launch at altitude. Building upon a series of previous developmental static motor tests at various temperatures, including a prior successful test at -65 degrees F in a heavywall motor case, this test further validates that the Aerojet rocket motor offers a single-motor solution for JAGM's challenging fixed-wing, rotary-wing and unmanned aerial vehicle requirements.

"Given the positive results of this rocket motor test and previous tests, we are confident we can deliver a single missile motor offering for the JAGM program as specified in the Statement of Work," said Hady Mourad, JAGM program director at Lockheed Martin Missiles and Fire Control. "Our motor has been optimized for employment off fixed-wing, rotary-wing and unmanned aerial vehicles, and it meets or exceeds every key performance parameter including maximum and minimum ranges, minimum-smoke propellant and, as just demonstrated, the hot and cold temperature parameters."

"The JAGM launch environment provides an extremely challenging set of requirements for the rocket motor, using a minimum-smoke propellant over a very large temperature range while also providing the necessary high turn-down ratio (boost to sustain) to power the launch and sustain flight to maximum ranges," said Aerojet's vice president for Tactical Programs, John Myers. "Aerojet is pleased to be able to successfully demonstrate these capabilities in support of Lockheed Martin's single-motor JAGM solution. We look forward to delivering rocket motors for their upcoming flight tests and ultimately to getting this vital new capability into the hands of our nation's Warfighters as soon as possible."

Developed along with partners Roxel, General Dynamics Armament and Technical Products, and Pacific Scientific Energetic Materials Company, Aerojet's advanced boost-sustain motor supports the Lockheed Martin JAGM team effort as part of the competitive Technology Demonstration phase of the program.

The JAGM TD program is being conducted by the U.S. Army's Joint Attack Munition Systems Project Office in Huntsville, AL, to replace the currently fielded HELLFIRE, Longbow, Airborne TOW and Maverick missiles for the U.S. Army, Navy and Marine Corps. JAGM provides the next-generation air-to-ground missile for employment from the services' rotary-wing, fixed-wing and unmanned platforms.

Threshold aviation platforms include the U.S. Army's AH-64D Apache attack helicopter, the Army's Extended Range Multi-Purpose (ERMP) Sky Warrior unmanned aerial system, the U.S. Marine Corps' AH-1Z Super Cobra attack helicopter, and the U.S. Navy's MH-60R Seahawk armed reconnaissance helicopter and F/A-18E/F Super Hornet jet fighter. Numerous Objective platforms are also in consideration, including the tri-service Joint Strike Fighter program. The initial operational capability of JAGM on the AH-64D, AH-1Z and F/A-18E/F is scheduled for 2016, and the IOC for the MH-60R and ERMP is 2017.

Aerojet is a world-recognized aerospace and defense leader principally serving the missile and space propulsion, defense and armaments markets. GenCorp is a leading technology-based manufacturer of aerospace and defense products and systems with a real estate segment that includes activities related to the entitlement, sale, and leasing of the company's excess real estate assets. Additional

information about Aerojet and GenCorp can be obtained by visiting the companies' Web sites at <http://www.aerojet.com/> and <http://www.gencorp.com/>.

Headquartered in Bethesda, Md., Lockheed Martin is a global security company that employs about 140,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The Corporation reported 2009 sales of \$45.2 billion.

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