Lockheed Martin Conducts Flight Testing Of More Powerful Engine For F-16

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Lockheed Martin has successfully completed the initial phase of flight testing of a more powerful engine for the latest version of the F-16, the Block 60.

The engine is a General Electric F110-GE-132 turbofan engine that produces approximately 32,500 pounds of thrust in maximum afterburner. It is a derivative of the current F110-GE-129, which is in the 29,000-pound thrust class.

Flight testing was accomplished on a modified USAF F-16C at the Air Force Flight Test Center, Edwards Air Force Base, Calif. Thirteen flights were conducted from April 25 through June 19. The original plan called for 25 flights over a three-month period, but aerial refueling and excellent engine performance and reliability allowed the number of flights to be cut in nearly half.

"The engine met or exceeded all of our expectations during extensive ground and flight testing," said Dan Levin, Lockheed Martin project test pilot. "The engine performed flawlessly, even at extremes of the F-16 flight envelope, and you really notice the added thrust. The handling qualities in formation and aerial refueling were excellent. We look forward to testing the engine in the first Block 60 aircraft at Fort Worth later this year."

The new engine version is being developed by General Electric Aircraft Engines, Evendale, Ohio, in support of a commercial contract to Lockheed Martin Aeronautics Co., for the new Block 60 F-16.

"This is an important milestone in the Block 60 program leading to production of the first aircraft later this year," said John L. Bean, vice president of F-16 programs. "This higher-thrust engine ensures the Block 60, which has the capability to operate at higher gross weights, will retain the F-16's famous performance that entails acceleration, climb rate and sustained turn rate. New technologies are allowing this to be accomplished while maintaining or improving engine operability, durability, reliability or maintainability."

The new engine version features "blisks" (bladed-disks) in the three-stage modular fan section in lieu of traditional blades to improve performance and maintainability. The engine also incorporates an enhanced durability radial augmentor (afterburner) and exhaust nozzle, plus control software modifications to optimize engine performance at all flight conditions. The Block 60 aircraft and engine also will feature an auto-throttle capability.

Flight testing verified compatibility across the entire F-16 envelope, including high angle-of-attack and sideslip maneuvers, pushovers, inverted flight, and takeoff and landings. Test points included air starts, throttle transients, afterburner operation, primary and secondary fuel control operation, and formation flying.

The F-16 is the choice of 24 countries. More than 4,000 aircraft have been delivered, hundreds more are on order, and production is expected to continue beyond 2010. Major upgrades for all F-16 versions are being incorporated to keep the fleet modern and fully supportable over the aircraft's long service life.

Lockheed Martin Aeronautics Co., a business area of Lockheed Martin Corp., is a leader in the design, development, systems integration, production and support of advanced military aircraft and related technologies. Its customers include the military services of the United States and allied countries throughout the world. Products include the F-16, F/A-22, F-35 JSF, F-117, T-50, C-5, C-130, C-130J, P-3, S-3 and U-2.

Headquartered in Bethesda, Md., Lockheed Martin Corp. employs about 125,000 people worldwide and is principally engaged in the research, design, development, manufacture and integration of advanced technology systems, products and services. The corporation reported 2002 sales of $26.6 billion.

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