Lockheed Martin Powers Up F-35 STOVL Engine In Preparation For First Flight

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The British pilot who will be the first person to fly the short takeoff/vertical landing (STOVL) Lockheed Martin F-35B Lightning II started and ran the aircraft's engine for the first time on April 18, initiating the final series of ground tests before the jet's first flight.

Test pilot Graham Tomlinson of BAE Systems throttled up to full military power (non-afterburner) in two consecutive tests. The Pratt & Whitney F135 engine, which produces about 28,000 pounds of thrust in military power and 40,000 pounds of thrust in afterburner, was evaluated for nearly an hour of run time at a variety of power settings. The engine runs were part of the F-35B's first comprehensive systems checkout on the aircraft's own power. The engine runs were preceded by successful tests of the Integrated Power Package, which combines the functions of a starter, generator, environmental (air conditioning) system and emergency power system.

"The F-35B continues to hit one milestone after the other, and the team is doing a great job of keeping us on track for the airplane's first flight in the late May/June time frame," said Dan Crowley, Lockheed Martin executive vice president and F-35 program general manager.

The April 18 tests also included the opening and closing of all doors associated with the STOVL propulsion system. During STOVL flight, doors open above and below the shaft-driven lift fan (located immediately behind the cockpit) and at the rear of the aircraft beneath the engine nozzle. A pair of auxiliary engine inlet doors opens behind the lift fan to feed more air to the engine. The F-35B's initial series of flights will be conventional. In early 2009, the aircraft will begin engaging its STOVL propulsion system for short takeoffs, vertical landings and hovers.

The F-35B will be the world's first STOVL aircraft that is both stealthy and supersonic. It will be fielded by the United States Marine Corps, the United Kingdom's Royal Air Force and Royal Navy, and the Italian Navy.

The first F-35A test aircraft, a conventional takeoff and landing variant, has completed 40 flights and has exceeded performance and reliability expectations.

The F-35 is a supersonic, multi-role, 5th generation stealth fighter. Three F-35 variants derived from a common design, developed together and using the same sustainment infrastructure worldwide will replace at least 13 types of aircraft for 11 nations initially, making the Lightning II the most economical fighter program in history.

Lockheed Martin is developing the F-35 with its principal industrial partners, Northrop Grumman and BAE Systems. Two separate, interchangeable F-35 engines are under development: the Pratt & Whitney F135 and the GE Rolls-Royce Fighter Engine Team F136.

Headquartered in Bethesda, Md., Lockheed Martin 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 2007 sales of $41.9 billion.

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