RAF Pilot Completes Short Takeoff And Vertical Landing, Goes Supersonic In Lockheed Martin JSF X-35B

PRNewswire
EDWARDS AIR FORCE BASE, Calif.

In a history- making first for a Royal Air Force pilot, Squadron Leader Justin Paines performed a short takeoff, a supersonic dash, a hover and a vertical landing in two flights of the Lockheed Martin Joint Strike Fighter X-35B.

The first sortie included an in-flight conversion from short- takeoff/vertical landing (STOVL) propulsion mode to conventional-flight mode for the supersonic run, followed by a conversion back to STOVL mode for a "slow" (80-knot) landing. For the second flight, Paines executed another short takeoff, transitioned to wingborne flight, then decelerated to a hover and landed vertically. The flights occurred on July 19.

"To go supersonic, hover and land vertically in two back-to-back flights was a fantastic experience and a tremendous privilege for me," said Paines, who in late June made three consecutive vertical takeoffs, hovers and vertical landings in the X-35B. "The JSF concept of a STOVL, supersonic, high- performance, stealthy strike aircraft presents a truly awesome operational capacity."

In the last month, the X-35B has logged a series of vertical takeoffs, short takeoffs, hovers and vertical landings. Its first supersonic flight was on July 9.

"Squadron Leader Paines' successful flight today underscores the importance of international participation in the Lockheed Martin JSF program," said Tom Burbage, executive vice president and general manager of the Lockheed Martin JSF program. "When you look at this team, you see a seamless transatlantic partnership at work. The X-35B's chief test pilot, Simon Hargreaves, is a U.K. citizen and a BAE SYSTEMS employee, our truly revolutionary lift-fan is from Rolls-Royce, the flight-test team is led by both British and American specialists, and the aircraft's systems represent the best of the best of the U.S., the U.K. and The Netherlands. And we're honored to have one of the finest R.A.F. pilots in the business proving our technology."

The X-35B features a unique propulsion system in which a drive shaft from the Pratt & Whitney JSF119-611 engine turns a counterrotating lift fan that produces cool-air lifting force during STOVL operations. The Rolls-Royce fan, actuated by a clutch that can be engaged at any power setting, works in concert with an articulating rear duct and under-wing lateral-control nozzles to lift the aircraft with nearly 40,000 pounds of vertical force. Because the fan amplifies the engine's power, the engine is able to run cooler and with less strain, increasing reliability and extending service life. The lift fan provides the propulsion system with about 15,000 pounds more thrust than the engine alone could generate in non-afterburning military power conditions.

All of the X-35B vertical takeoffs, hovers and landings were accomplished at 2,500 feet elevation, at temperatures up to 94 F.

Advanced manufacturing methods already demonstrated by the Lockheed Martin JSF team will drastically reduce manufacturing time and costs compared to those of legacy fighter aircraft.

Lockheed Martin, in partnership with Northrop Grummanand BAE SYSTEMS, is in competition to build the JSF for the United States and United Kingdom. Government selection of a single contractor for the Engineering and Manufacturing Development phase is set for fall 2001.

For photos and information on the JSF, visit:
http://www.lmaeronautics.com
For government information on the Joint Strike Fighter program, visit
www.jast.mil
For information on Lockheed Martin Corporation , visit:
http://www.lockheedmartin.com

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