## Lockheed Martin JSF Goes Supersonic; Test Objectives Exceeded

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Just 25 hours and 25 flights into its airborne test program, the Lockheed Martin Joint Strike Fighter (JSF) X-35A broke the sound barrier on Tuesday, Nov. 21, continuing an aggressive program of flight-envelope expansion.

Test pilot Tom Morgenfeld lifted off from Edwards Air Force Base at 4:25 p.m. (PST) and took the X-35A to 25,000 feet altitude, achieving a speed of Mach 1.05.

"This is another example of our flight test program exceeding even our own expectations," said C.T. "Tom" Burbage, executive vice president and general manager of the Lockheed Martin JSF program. "All our flights have demonstrated great performance. These results are accomplished by our team's approach to tackle technical challenges up front. This aircraft has allowed us to concentrate on validating those flying characteristics that cannot be adequately proven through modeling and simulation."

Earlier Tuesday, on the X-35A's 24th flight, Morgenfeld made six field carrier landing practice demonstrations, previewing the aircraft's low-speed carrier approach handling qualities in advance of upcoming tests with the second demonstrator, the X-35C. He said controllability in the carrier landing profiles was excellent as he followed glide slope cues from a Fresnel lens on the ground.

With its flight testing complete, the X-35A, which first flew on Oct. 24, will return to Lockheed Martin's Palmdale, Calif., facility to be fitted with a shaft-driven lift-fan propulsion system. It will be renamed the X-35B and will begin ground testing in preparation for its short takeoff/ vertical landing (STOVL) demonstrations.

"In flight-testing the X-35A, we've been gathering information on the STOVL X-35B model since the up-and-away performance is the same," said Harry Blot, vice president and deputy program manager for the Lockheed Martin JSF team. "We also have completed engine runs on the X-35C -- the Navy configuration -- and expect it to take

flight by mid-December."

The conventional-takeoff-and-landing (CTOL) X-35A, designed to meet Air Force specifications, is externally identical to the STOVL X-35B, the U.S. Marine Corps/ British Royal Air Force and Royal Navy JSF demonstrator. Consequently, much of the X-35A's flight-test data will satisfy government requirements for the X-35B.

"All three of these aircraft are very close representations of the planes we're proposing for full-scale production. When you see our flight-test data, you're essentially seeing data that the production aircraft would generate," Blot said.

Lockheed Martin, in partnership with Northrop Grumman and 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 2001.

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