Boeing JSF X-32A Completes Low-Speed Carrier Variant Tests

Flying as many as five flights a day in the last week, the Boeing Joint Strike Fighter X-32A concept demonstrator aircraft has successfully completed low-speed approach aircraft carrier variant (CV) tests - one of the government's three main program objectives.

Since the aircraft's first flight on Sept. 18, the X-32A has made a total of 33 flights, with both Boeing and government pilots at the controls, demonstrating CV low-speed handling characteristics. As of today, Boeing has completed 100 percent of the government-defined X-32A flight-test objectives.

"We're really happy with the flying qualities the X-32A is demonstrating - because they are so closely matching actual performance with what we predicted in years of simulation," said Frank Statkus, Boeing vice president and JSF general manager.

"Simulation and modeling are the keys to designing and building 21st century aircraft, and our continued successes can't help but increase customer confidence in Boeing in this phase of the program as well as the next."

Boeing CV accomplishments include 97 approaches and 74 actual touch downs, as well as numerous "wave-offs," throttle transients and integrated test blocks including roll response and speed stability during the field carrier landing practice (FCLP) tests. Conducted on the outline of a carrier deck superimposed on a runway, FCLPs are designed to demonstrate flying and handling qualities during simulated low-speed aircraft carrier approach.

"I continue to be impressed with the X-32A's flying qualities in the carrier mode configuration," said Boeing lead test pilot Fred Knox, a former U.S. Navy carrier pilot. "Of all the flight-test programs I've participated in, the level of customer objectives met this early on is unprecedented."

Boeing now will begin testing its own "up-and-away" strategic objectives, which are in addition to the customer objectives. The up-and-away objectives will demonstrate key performance capabilities of the X-32A conventional-takeoff-and-landing (CTOL) variant.

The X-32A is halfway through the five-month flight-test program, which includes approximately 60 flights totaling about 100 hours to validate the JSF's predicted flying characteristics. The flights are split approximately 50-50 between carrier-variant (CV) and CTOL tests.

To underscore the commonality of its design, Boeing is using one aircraft, the X-32A, to demonstrate both the CV and CTOL handling qualities without any modifications or changes to the aircraft.

"Our Air Force and Navy designs are so highly common - same wing, same systems - we only need one plane to demonstrate our ability to meet the customer's CV and CTOL requirements," said Statkus.

The second of the two JSF concept demonstrators, the X-32B, will demonstrate short takeoff and vertical landing (STOVL) capabilities for the U.S. Marine Corps, U.K. Royal Air Force and Royal Navy. In late September, Boeing completed the first engine runs on the X-32B aircraft at its Palmdale, Calif., test site.

During flight test the two Boeing JSF demonstrator aircraft must successfully demonstrate three objectives originally outlined at the beginning of the concept development phase in 1996: 1) commonality and modularity among JSF variants; 2) low-speed carrier approach flying and handling qualities; and 3) short takeoff, transition, hover and vertical landing.

Boeing X-32 flight test is another key piece of the company's aggressive risk-reduction program, following closely on the heels of its groundbreaking avionics flying lab demonstrations - culminating in placement of live ordnance on a target; full mission simulation demonstrations; and full-scale signature and supportability pole model testing.

The Boeing-led One Team is competing to build the JSF under a four-year U.S. Air Force, Navy and Marine Corps concept demonstration contract, while also defining the design for the operational JSF. A winner is scheduled to be selected in 2001.

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For further information:
Randy Harrison
(206) 655-8655
randolph.c.Harrison@boeing.com
Chick Ramey
(206) 662-0949

charles.b.ramey@boeing.com