

Keeping JSF on Track is Top Priority for Test Force

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EDWARDS AIR FORCE BASE, Calif. (April 1, 2002)—The first Joint Strike Fighter [JSF] demonstration aircraft is still more than three years from touching down here, but test experts planning for the arrival say it is just around the corner.

The JSF Integrated Test Force is a mere five months into the 10-year system development and demonstration program, with the first test aircraft expected to arrive in October 2005.

Plans call for five Air Force JSF variants to be based here for developmental testing, along with three transient aircraft from Naval Air Station Patuxent River, Md. Both the Air Force and the Navy will conduct testing on all of the JSF variants, including the Air Force, Navy, and Marine versions and the United Kingdom's version. An additional 18 aircraft are expected to arrive once the program moves into operational testing in 2010.

Defense officials from the United Kingdom [U.K.] have recently decided to conduct operational tests of the U.K. version of the JSF, said Joe Dowden, Director of the JSF Integrated Test Force. Initial plans call for two U.K. aircraft and support crews to be based here during the later portion of the demonstration program.

Dowden said the test force is already picking up the pace.



Joe Dowden (right), Director of the Joint Strike Fighter Integrated Test Force at Edwards Air Force Base, Calif., and Mark Crawford, JSF Chief Engineer, use a model of the fighter to demonstrate steps they are taking to keep its development on track. The Edwards test force is working with counterparts from the Navy and the United Kingdom to build one integrated test plan that will be responsible for evaluating three different versions of the fighter aircraft. Photo by Carlos Rolon

“Keeping the test program on track at this early stage is a top priority,” Dowden said. “We want to field these aircraft as quickly as possible to replace aging aircraft in the Air Force as well as in the Navy and Marine inventories,” he said.

The JSF test program is unique in that three different versions of the same aircraft will be tested using the one integrated test plan, said Mark Crawford, Chief Engineer for JSF. This means the test force is working closely with an expanded group of test partners from around the world.

Crawford points out that such an arrangement presents more of a communications challenge for the test force; however, he said that having one plan is still more efficient for the Air Force than conducting three separate test programs.

"The military services have traditionally built unique aircraft to fulfill their different missions," he said. "By building and testing common aircraft and systems, we can gain a significant economy in terms of the size of the test team, effort, and overall cost. You will see more people here than for a single aircraft test program, but many less than you would for three separate programs."

Dowden and Crawford agree that coordinating with testers throughout the Department of Defense and the world to develop the JSF makes early planning a must. One challenge for the test force is to plan ahead for any potential security issues that may arise when foreign nationals begin arriving here to assist with JSF testing. Dowden expects five to 10 U.K. testers to be based [at Edwards] for developmental testing with a potential buildup of 40 to 70 U.K. personnel supporting operational tests.

"It's important that we work to gain clarification on our heightened security policies, so that we can integrate the U.K. experts into our workforce," Dowden said.

Nearly 20 engineers from Edwards are working alongside software and hardware designers at Lockheed Martin in Fort Worth, Texas, to design the fighter's flight controls, avionics, and weapon systems. Many of these subsystems will be evaluated in

various stages of integration before they are incorporated into the aircraft.

"It is much easier and cheaper to fix problems if you can find them in the early stages of development," Crawford said. "Working on these subsystems now makes us better testers downstream, because we will better understand the system once it arrives at Edwards."

Crawford said that having developmental testers involved from the start will help save the JSF program money down the road.

"If you've got 20, 30, or 500 aircraft rolling off the line and you start finding problems, it costs a lot of money to go back and fix those systems," he said. "If you can come up with those fixes before you produce an aircraft, you save a lot of money over the life cycle of the aircraft."

The test force is bringing in a cadre of engineers and logistics experts to support the test planning effort. By the end of the demonstration program, the JSF test force here is expected to grow to more than 1,000 people.

"It seems like we have a lot of time before our first flight, but with so many people coming together to build one integrated plan, we have to start early," Crawford said. "Three years and eight months is going to fly by."

Editor's Note: Bierstine works in the Public Affairs Office at the Air Force Flight Test Center, Edwards AFB, Calif. This information is in the public domain at <http://www.af.mil/news/Apr2002/>.