

Target acquired

Boeing is preparing retired F-16 fighters for a new mission— aerial targets for warfighters

By Wendy Locklear

A bright orange ball of fire burst from the middle of an F-16 Fighting Falcon on the range at Eglin Air Force Base in Florida, sending debris and shrapnel into the air, followed by thick black smoke.

No one was hurt during the Aug. 19 static ground test, and nothing was destroyed other than the F-16.

It was blown up on purpose by the 780th Test Squadron at Eglin to test a flight termination system that will be used when Boeing converts retired Lockheed Martin F-16 jet fighters into remote-controlled aerial targets that can be tracked and targeted—and ultimately shot down—by warfighters as part of their training in weapons and tactics.

The first production QF-16 aerial target is scheduled to be delivered in 2014. During the first phase of the contract, Boeing will modify and test six F-16s at Cecil Field in Jacksonville, Fla., leading to the start of low-rate production in 2013.

In all, up to 126 retired F-16s could be converted. They will be equipped to fly and land multiple times in manned and unmanned configurations before their final missions against live weapons on a controlled range.

“The QF-16 contract is significant,” said Boeing’s Steve Waltman, Aircraft, Sustainment and Maintenance director. “We are here to help the [U.S.] Air Force achieve its goals and provide quality and innovative solutions while remaining low risk and low cost.”

The Boeing team faces a complex task to design and modify the QF-16s, he said.

Engineers in St. Louis are creating images and designing parts using scanning technology and processes developed by Boeing Research & Technology for military applications. As part of risk reduction plan, the team utilized a retired F-16 and technology called the X-ray Backscatter Non Line of Sight Reverse Engineering System. Simply put, the aircraft will enable the QF-16 program to apply reverse engineering practices to accurately design the modifications that are required for conversion of the aerial targets.

“Prior to contract award, we used the X-ray scanning and laser scan data to develop 3-D models of the design,” said Bob Insinna, QF-16 program manager. “We reduced program risk by performing rapid prototyping of the flight termination system and a smoke generation system.”

The reverse engineering bridges the gap between aircraft designed in a non-digital environment and those currently being designed, explained Paul Cejas, QF-16 chief engineer.

“This isn’t the type of engineering we typically do, which is what makes this program both fun and challenging,” Cejas said.

In the meantime, Boeing’s team at Cecil Field has been busy over the past few months preparing for and receiving the first six F-16s for conversion.

“We have completed all critical milestones on schedule,” Insinna said. “Our goal is to listen to our customer, keep them well informed, and continue using our proven processes for systems engineering and program management best practices. We are committed to executing this contract and exceeding customer expectations.” ■

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PHOTO: RICH RAU/BOEING



PHOTOS: This F-16 shell in St. Louis was acquired by Boeing for engineering and tests in preparation for QF-16 conversions. PETER GEORGE/BOEING AND RICH RAU/BOEING