

‘Silent’ partner

F-15 Silent Eagle adds new capability and flexibility

By Patricia Frost

You might say it's the strong, silent type. It flies at Mach 2.5 (or 2.5 times the speed of sound). It has the greatest range and payload capability of any fighter today. And it's "silent"—in the sense that it employs technology that offers stealth capabilities, thereby reducing its detection by radar.

It's the F-15 Silent Eagle, which Boeing unveiled at a March ceremony in St. Louis. "The aircraft was specifically designed in response to international customers' need for an aircraft with an increased measure of radar-evading capability without the trade-offs of reduced range and heavy payloads," said Mark Bass, F-15 program vice president. "They needed it to be affordable, and they needed it quickly."

It was this tall order that eight Boeing engineers set out to fulfill last September. Six months later they came up with the Silent Eagle ground demonstrator, which is basically the F-15 Strike Eagle plus new components.

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F-15 Silent Eagle tale of the tape

Length: 63.6 feet (19.4 meters)

Height: 18.5 feet (5.6 meters)

Wingspan: 42.8 feet (13 meters)

Speed: Mach 2.5 class



PHOTO: Canted tails improve aircraft aerodynamic efficiency and help reduce weight. RON BOOKOUT/BOEING



New components include conformal fuel tanks with internal weapons bays, called conformal weapons bays, that have the same aerodynamic shape and aircraft interfaces as the standard conformal fuel tanks of the F-15E. Conformal fuel tanks are additional fuel tanks fitted closely to the profile of an aircraft, which extend either the range of an aircraft or the time on station, with little aerodynamic penalty compared to the same fuel capacity carried in external drop tanks.

Depending on the aircraft's mission, the conformal weapons bays can be swapped for conformal fuel tanks on the flight line. The internal carriage capability minimizes radar signature and significantly increases the pilot's tactical options in combat.

The Silent Eagle also features twin vertical tails canted outward 15 degrees (F-15E tails are vertical). Canted tails provide lift to the rear of the aircraft, which eliminates hundreds of pounds of ballast and increases range by 75 to 100 nautical miles. Also, coatings are applied to various areas of the aircraft that reduce its visibility to radar. A digital electronic warfare system will be added that can detect, jam and defeat enemy air-to-air and surface-to-air threats.

"The Silent Eagle provides forces with a powerful capability to convert a combat-proven, front-line, multi-role fighter aircraft into a silent asset," said Shelley Lavender, vice president and general manager, Global Strike Systems.

The F-15 team is preparing for a flight test with weapons release in the third quarter of 2010. The test will validate the Silent Eagle's internal carriage capability. ■

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PHOTOS: (TOP) The F-15SE internal weapons carriage bay provides added flexibility to customers. RON BOOKOUT/BOEING

(BOTTOM) A U.S. Air Force F-15E Strike Eagle from the 391st Expeditionary Fighter Squadron Bagram Air Base flies over Afghanistan. AARON ALLMON/U.S. AIR FORCE

A proven fighter in more ways than one

The F-15 remains the backbone of the U.S. Air Force with 236 fighters in service. The aircraft has proved itself in Iraq and Afghanistan and since entering service has maintained a ratio of 104 air-to-air kills versus zero losses. It plays an important role in defending U.S. allies around the world. Air forces in Japan, Israel, Korea, Singapore and the Kingdom of Saudi Arabia employ the F-15 to protect their nations. More than 2,000 Boeing jobs are tied to the F-15 in St. Louis. Some 400 suppliers support the program across the globe.

— Patricia Frost

