

Boeing and USAF will have to recertificate entire F-15SA flight envelope

BY: DAVE MAJUMDAR WASHINGTON DC

Source: **FLIGHT**
INTERNATIONAL

Posted: 4/3/2013

Boeing and the US Air Force will have to recertificate the new F-15SA's performance over the Eagle's entire flight envelope due to its new fly-by-wire flight control systems.

"The entire F-15 flight envelope requires clearance for the F-15SA fly-by-wire system," the USAF says.

"The flight test to certify airworthiness will take approximately a year and a half to accomplish."

True fly-by-wire is a departure from the traditional F-15 hybrid electronic/mechanical flight control system. Previous incarnations of the jet were equipped with a dual-channel, high-authority, three-axis control augmentation system superimposed on top of a hydro-mechanical system.

However, Saudi Arabia's 84 F-15SAs on order will have its two outer wing weapons stations activated, making it necessary to implement a fly-by-wire flight control system.

"The main benefit for the fly-by-wire system is to compensate for the stability differences induced by carrying weapons in the one and nine stations - not used to date on any F-15 platform," the USAF says.

The service adds it is not yet known how the redesigned flight control system will affect the pilot. "It is too early in the flight test programme to appropriately characterise [the] 'feel' of the flight controls," the service says.



F-15SA

The first F-15SA, an advanced derivative of the F-15E, flew a limited flight envelope on 20 February. Other upgrades for the F-15SA include an active electronically scanned array radar and a digital electronic warfare system.

The USAF will not activate the outer wing weapons stations on its own F-15Es, the service says. Nor will the fly-by-wire controls be retrofitted to existing USAF Strike Eagles.

Raymond Jaworowski, an analyst with Forecast International, says that there are two reasons for Boeing and the USAF to undertake the difficult task of redesigning the F-15's flight control systems this late into the aircraft's life-cycle.

The first is that Saudi Arabia might have specifically asked for certain capabilities. "It is fairly sizable order," Jaworowski says. "So whatever they can do to satisfy the customer would be in their best interests."

A second possible reason for the extensive modification, Jaworowski says, is that Boeing wants to keep the F-15 in production for as long as possible. Keeping the Eagle as modern as possible would help the company compete on the world market before Lockheed Martin's F-35 becomes dominant, he says. "Eventually, 10 years from now, the F-35 will be the dominant fighter on the world market," Jaworowski says. "In the meantime there are possibilities for additional sales of older fighters like the F-15, so Boeing is going to keep the F-15 with as much current technology as possible in order to pick up those sales."

Source: <http://www.flightglobal.com/news/articles/boeing-and-usaf-will-have-to-recertificate-entire-f-15sa-flight-envelope-384156/>