

AIR TRANSPORT GUY NORRIS / LOS ANGELES

Boeing reveals 777-250ERX study

Potential third variant emerges as PIA ends -200LR/300ER sales drought with order for five aircraft

Boeing is evaluating a possible third member of its ultra-long-range 777 family in response to airline interest in a new extended-range twinjet with a similar range to the 777-300ER, but with more capacity than the 777-200LR.

Boeing says the product development study for the 777 variant is "one of many". The study, dubbed the 777-250ERX, is understood to be looking at a nine- or 10-frame stretch of the General Electric GE90-110B-powered -200LR, making it about 68.6m (225ft) long overall, against almost 74m for the GE90-115B-powered -300ER, and 63.7m for the -200LR. The stretch would provide roughly 10% more passenger capacity than that of the baseline aircraft, although it would trade range for payload. The aircraft is expected to be offered with

capacity for up to 320-330 passengers over maximum ranges of around 13,900km (7,500nm).

First details of the study proposal come as Boeing finally breaks the 50 firm-order barrier for the GE90-powered derivative family after a two-year sales drought. Pakistan International (PIA) has ordered two -200LRs and three -300ERs as part of an eight-strong \$1.4 billion 777 order that includes three -200ERs. Deliveries are due between February 2004 and 2008. No engine selection has been confirmed for the three -200ERs, but PIA said before it placed the order that GE90s would power the aircraft.

PIA's two -200LRs are the first new orders for the variant since July 2000, when EVA Air of Taiwan launched it with an order for three.

The PIA order takes -200LR/300ER family orders to 54, and total 777 orders to 607.

Regardless of whether the -250ERX becomes a real programme, the manufacturer says a revised development schedule for the delayed -200LR will be decided in the second quarter of next year. The first EVA 777-200LR was originally scheduled for delivery in January 2004, but the effort was put on ice in September 2001.

GE has, meanwhile, been forced to delay certification of the GE90-115B engine for the new derivatives following the discovery of a problem on one of the endurance engines. GE engineers found evidence of "distress" on the first-stage high-pressure turbine blade platforms in the 150h block test engine performing the "triple red line"

endurance testing. "The base of the blade was showing some slight distortion," says GE, which is correcting the problem by routing more cooling air to the zone.

"The bottom line is that we have to stop the test to validate it," says GE, which had originally planned to complete engine certification in December. The GE90-115B block test engine, one of seven currently running in the programme, had reached 35h when the issues were discovered. More crucial large bird-strike and fan blade-off tests are due to take place over the next month.

The delay means tests will run through to the end of the year and certification may slip to late January or February. Boeing plans to start 777-300ER flight tests in early January as planned, assuming no more issues emerge.

DEFENCE PAUL LEWIS / WHITEMAN AFB, MISSOURI

USAF plans first overseas B-2 base

The US Air Force is for the first time planning to operationally deploy the Northrop Grumman B-2 bomber overseas. The aircraft will operate from bases in the Indian Ocean and the UK to spearhead US airstrikes against Iraq, if necessary.

The move follows the delivery of specially designed climactically controlled transportable shelters that are necessary to support the low observable (LO) aircraft at forward operating locations.

"We're going to forward deploy this aircraft; that is our charter," says Col Doug Raaberg, commander of the USAF 509th Bomb Wing. The move will enable the air force "to cycle the aircraft as rapidly as necessary, with faster turnaround, and put more bombs on target", he says. Two principal locations are being eyed to position the B-2 closer to Iraq - RAF Fairford and the UK-administered island of Diego Garcia in the Indian Ocean.

To support the deployment, the USAF has ordered five aluminium-truss transportable hangars at a cost of \$2.5 million each. The last is in the final stage of delivery, says manufacturer American Spaceframes Fabricators. The 76m (250ft)-wide, 38m-long shelters are covered by two polyester vinyl layers and are climactically controlled using three 65,000kg (143,000lb) air conditioners, strip heating and a 190litre/h (50USgal/h) capacity humidifier.

"This is not a shelter for bad weather; they are environmentally controlled conditions for aircraft skin treatment," says Raaberg. The B-2 uses a substantial amount of filler and masking to seal access panels and hatches to reduce the aircraft's radar signature, which must be inspected for defects after each mission. While new LO technology such as the spray-on advanced high-frequency material



The B-2 will operate from bases in the Indian Ocean and the UK

promises to reduce maintenance time substantially, like paint it still requires around a 20°C (69°F) temperature and 30-60% humidity to cure.

As a result the B-2s used during the Afghanistan and Kosovo conflicts were operated from their home base at Whiteman AFB, Missouri, which features 14 purpose-built bays and two dedicated LO docks. Whereas the USAF's Boeing B-52s and Rockwell B-1Bs flew from Diego Garcia, the B-2 always returned to the USA after a crew change on the island - a round trip of 70h. Of around 7,000

USAF combat missions flown in the first 120 days of the Afghan war, the B-2 accounted for just 12, whereas the 40-year-old B-52 flew 584 sorties.

The majority of the shelters are earmarked for Diego Garcia, which, unlike Anderson AFB on Guam, has no modified facilities to support the B-2. At least one shelter will be erected at RAF Fairford to supplement existing facilities now being improved. The USAF is planning a simulated overseas basing exercise, which it estimates would generate 50 sorties for every four home-based missions.