Gulfstream plans range revamp

Gulfstream Aerospace is to improve the Gulfstream IV business jet, develop a larger Gulfstream V and begin work on a smaller Gulfstream XT (extended technology) (Flight International, 9-15 October, 1991).

The heavier GV will fly in 1992, the stretched, 9,250km (5,000nm) -range GV in 1994 and the GI-sized GXT in the “last half of the 1990s”, says Gulfstream president Bill Lowe.

Structural modifications to increase GV take-off and landing weights will be incorporated in 1993 production aircraft, and avionics improvements are in the pipeline for 1994. While the GV is in preliminary design and market studies have begun, Gulfstream “...is still talking about the GXT”, Lowe says, and a market survey is planned.

The GV will be 1.22m-1.52m longer than the GIV, an 36,320kg-40,860kg aircraft able to carry eight passengers for more than 9,250km at Mach 0.8, powered by uprated versions of the same Rolls-Royce Tay turbofans and flying on essentially the same wing. The aircraft will compete with Canadair’s “Global Express” but will be available much earlier, says Lowe. The GV is to fly early in 1994.

The GXT is envisaged as “continental business jet”, a 23,150kg aircraft able to carry a 910kg payload 5,600km at M0.85, powered by two BMW Rolls-Royce BR.700 turbfans. The quickest route to developing such an aircraft, says Lowe, would be to use the GI fuselage with a new wing and engines. A new fuselage is a possibility, however.

Lowe says improved GV interior design will make better use of the GIV cabin width, which is narrower than that of the Challenger, on which the Global Express is based. He believes the GV will offer sufficient price and performance differential to avoid competition with the GIV priced at $22 million plus completion.

Until the GXT is available, Gulfstream plans to meet any demand for business jets smaller than the GIV with secondhand Spey-powered GIIIs, GIIIBs and GIIIIs hushkitted to meet Stage 3 noise limits.

Beech to market six-seat Starship

Beechcraft is to replace the light-passenger Starship 2000 with a heavier aircraft seating only six passengers, the Starship 2000A.

The new version of the slow-selling all-composite turboprop twin will have a range of 2,750km (1,500nm) and a greater payload. The 2000A will not be available until the third quarter of 1992, and any Starships sold between now and then can be upgraded to most of the new specification.

Tom Schiller, manager of Starship marketing, says the changes reflect the market demands: the average corporate turboprop carries only 3.8 passengers a trip on stage lengths typically less than 915km. The 2000A will carry those people much further, he says.

At the heart of the 2000A is an increase in maximum take-off weight of 180kg to 6,760kg, with the landing gear and wing centre-section strengthened to cope. There is no corresponding increase in landing weight, so a fuel-jettison system will have to be devised. This weight increase will be a retrofit item, and Beechcraft intends that all aircraft after serial number 21 will be to the new specification — although it has not been determined how the upgrade cost will be shared between manufacturer and user.

The interior changes include a 150mm-longer cabin, achieved through locating the toilet aft, and taking out two seats. Externally, one of the few indicators of modification will be new exhaust stacks for the pusher Pratt & Whitney PT6A engines. These will reduce fly-by noise by 1dB, enough to ensure compliance with regulations, says Schiller.

The rear baggage locker is some 10% larger at 3.5m³.

Learjet refines Model 60 performance

Learjet has made significant aerodynamic modifications to its Model 60 business jet, to increase cruise performance and delay the onset of buffet.

Chief test pilot Pete Reynolds says computational work carried out with NASA has led to dramatic reductions in local airflow speeds at high Mach numbers. Theoretical gains have been borne out in 39 flight tests.

A 45° leading-edge root extension and a flattening of the aerofoil upper surface have been introduced. The winglets have also been reprofiled, with a trailing-edge root extension giving a much wider chord at that point.

The area around the engine pylons has also been modified. Reynolds says that, although moving the buffet boundary was the main driver for these changes, there had been concern within Learjet that the Model 60 might have a range problem. The changes will “...put us over our range predictions”. The lower drag and higher buffet boundary means the Model 60 will have a normal cruise speed of M0.76, with a maximum operating Mach number of 0.81.

Reynolds says the cruise altitude has been lifted by 4,000ft (1,300m) for the same weight; flight ceiling will be 51,000ft.