High performance
Jetstream 31

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PRESTWICK. Cutaway by IRA EPTON

Jetstream is emerging from its somewhat chequered history into what should be a new lease of life. The main new feature of the Jetstream 31 is its TPE331 powerplant, but the aircraft also has higher weights, an advanced Dowty Rotol propeller, a new cockpit, and some new systems. There is some wing redesign to accept the new engine and higher weights.

The 1960s Handley Page design embodied a modern long-life structure, with extensive use of bonding, but its Astazou engines earned it a reputation as being exacting to operate. The US Air Force ordered Garrett TPE331-powered Jetstreams, but the order was cancelled and Handley Page fell into financial difficulties which were never resolved. Although Jetstreams in the USA were re-engined in moderate numbers both by TPE331s and Pratt & Whitney PT6s, the basic design remained the same.

Upon the demise of Handley Page in 1970, Scottish Aviation acquired Jetstream design and production rights, and won RAF and Royal Navy orders for pilot and observer trainers respectively. Scottish Aviation was absorbed into British Aerospace in 1977, and 1978 saw BAE launching the 146, entering Airbus, and deciding in principle to go ahead with an improved Jetstream.

Jetstream 31's engine / propeller combination and the higher weights combine to give better performance in terms of speed and range over the original aircraft. BAE is aiming at the commuter and corporate markets, both of which are riding high in the current economic gloom.

Jetstream 31 comes in four versions. BAE regards the commuter version as the prime configuration, which seats 18 passengers three-abreast with two crew. Nineteen passengers may be carried if the toilet is dispensed with. The corporate aircraft will be laid out with about eight seats. BAE has also come up with an interim 12-seat aircraft which it calls executive shuttle. Lastly, BAE can offer a variety of special Jetstream 31s—training, calibration, military transport or casualty evacuation, for example. The rear cabin bulkhead may be moved to allow the carriage of packages or mail, and BAE is considering a quick-change mixed payload variant.

The company points out that its Jetstream 31 cabin door is fairly large—34in wide—to cater for the original RAF requirement that a stretcher can be loaded. The airframe also has stretch capability, but BAE is unsure of the market, which it intends to monitor carefully over the next few years.

Market research indicates to BAE that 1,200 19-seat turboprop commuters will be needed in 1980-1980, and it sees a market for 4,000 turboprop twins from Cessna Corsair size upwards. BAE points out that the only pressurised competition is the Metro 5, but the Beech 1900 is on the way and the pressurised Bandeirante is a possibility. The Jetstream is claimed to offer significantly larger cabin cross-sections than the opposition. Naturally, BAE emphasises that it can supply a budding commuter airline with a range from the Jetstream 31 to the 748 and 146.

The prototype Jetstream 31 was converted from a standard Jetstream purchased in the USA. The major distinguishing feature is the deeper engine nacelle which contrasts with the very slim Astazou housing of the original aircraft.