



The Honeywell/GEC-Marconi HUD 2020 will be tested on the Gulfstream IV-SP

HUDS gain ground

HEAD-UP DISPLAYS (HUDs) for business aircraft are finally catching on, says Flight Visions. The Sugar Grove, Illinois-based company says that its FV-2000 low-cost HUD is now certificated on the Cessna Citation II, Learjet 55 and Gulfstream IV.

By the end of the year, says president Robert Atac, the HUD will be approved on the Canadair Challenger 601-3A, Dassault Falcon 50, Gulfstream III and Sikorsky S-76. Installations planned for 1996 include the Beechjet 400A, Citation III, Falcon 200 and 900, Hawker 800 and Gulfstream II, he says.

Flight Visions has teamed with Litef to use the Germany company's LCR-92 fibre-optic-gyro attitude/heading-reference system (AHRS). Atac says the \$32,000 AHRS will allow display of a velocity-vector symbol on the \$75,000 HUD. This safety-enhancing feature is now only available if the aircraft is equipped with an inertial-reference system, he says.

The company says that it has orders for some 160 HUDs and is pursuing a wider

market than other manufacturers in a bid to offer fleet commonality to corporate flight-departments.

Dassault is installing a Flight Dynamics HGS-2000 head-up guidance system in the Falcon 2000 and is aiming for Category IIIa certification in 1996. Testing of the Honeywell/GEC-Marconi Avionics HUD 2020 on the Gulfstream IV-SP will begin in December, with Cat II certification planned for 1996 on the GIV and 1997 on the GV.

Also gaining ground is the global-positioning system (GPS). Rockwell-Collins' new Avsat 3000, for "...corporate-aircraft operators looking for basic satellite-based navigation-management capability", is a scaled-down version of the Avsat 6000 soon to be certificated in the Challenger 604. It can be integrated with Collins' Pro Line avionics or can stand alone.

AlliedSignal Aerospace's new GNS-XL is an approach-approved, GPS-based, flight-management system with a large liquid-crystal display. Deliveries are to begin in February 1996, and the one-box system will be certificated in the Citation Excel wide-body light business jet.

until the middle of 1997. Learjet is close to flying the Model 45, however, and Sino Swearingen is promising to certificate both versions of its SJ30 early in 1988.

If Raytheon has tackled Cessna head-on, then Sino Swearingen has avoided direct confrontation with either by repositioning the SJ30 into a unique niche, that of a long-range, high-speed, light jet. The SJ30-2 will have an instrument flight-rules range of 4,600km, at M0.83 and 49,000ft (15,000m). This compares with 3,100km at M0.77 and 41,000ft for the basic SJ30-1, which chairman Ed Swearingen says is "still my favourite aeroplane."

Swearingen believes that the market for the SJ30-1 will mature but, initially, emphasis is being placed on the SJ30-2, which has uprated Williams-Rolls FJ44-2 engines and additional fuselage fuel. The plan appears to be to certificate both versions concurrently using the SJ30 prototype and one certification-test aircraft.

St Louis, Missouri-based VisionAire plans to fly the prototype Vantage, produced by Scaled Composites, in April 1996 and says that funding plans are in place to certificate and deliver the \$1.5 million, all-composite, aircraft in late 1998. Fort Scott, Kansas-based StarKraft brought its proof-of-concept Model 700 all-composite, tractor/pusher piston twin to the NBAA. The company says that negotiations are under way with potential major backers and partners willing to help with certification and production.

TIMESHARE EXPANSION

Executive Jet chairman Richard Santulli appeared flanked by Cessna's Russ Meyer, Gulfstream's Bill Boisture and Raytheon's Art

Wegner to announce the long-anticipated expansion of the NetJets fractional-ownership programme into Europe.

The expansion, financed by the sale of a minority shareholding to investment bank Goldman, Sachs, will begin with the stationing of four company-owned Citation S/Is in Europe. Aircraft — numbers and types — will be added as shares are sold, says Santulli.

International expansion is becoming imperative as Executive Jets adds long-range Gulfstream IV-SPs to its fleet. The Gulfstream-owned core fleet of four aircraft will be in service by the year-end, as will be the first shared-ownership aircraft, Santulli says.

European-based aircraft will be used by existing US NetJets customers for flights within Europe, Santulli says, while Switzerland's Zimex Aviation will market aircraft shares to European customers.

With NetJets encompassing more than 300 owners and 55 aircraft, manufacturers are supporting of a programme which has brought them major orders. Meyer says that Cessna's initial concerns about competition were unfounded. "NetJets has proved to be constructive and flexible," he says. "Netjets is very positive for the industry," concurs Raytheon's Wegner.

Santulli says that Executive Jets' initial order for 25 Citation Ultras will be sold out by March 1996, and more will be ordered. The widebody Citation Excel is also under consideration, he reveals. The company will take at least 20 Hawker 1000s, and is pressing Raytheon to build more aircraft. Boisture says that Gulfstream wants to offer both the GIV and GV through NetJets. Existing options for 13

more GIVs, plus two GVs, "...are not enough," says Santulli, adding: "We are looking at a much larger order than two [GVs]."

Imitation is inevitable, and NBAA saw the emergence of two different takes on the NetJets concept. AvShares is a programme offering part-ownership of used business-aircraft to Latin American operators; while PlaneSense is a US programme offering quarter shares in the single-turboprop Pilatus PC-12.

AvShares is an attempt by Florida-based Avlease & Finance Group to counter a trend among Latin American companies to dispose of their aircraft to reduce costs. Massachusetts-based Alpha Flying is aiming PlaneSense at the short-range market (typically 550km) for which the cost of even a part share in a business jet cannot be justified.

The most serious challenge so far to NetJets comes from FlexJet, the fractional-ownership programme launched in May by Business JetSolutions, a joint venture between Bombardier and AMR Combs. Share sales are "in double digits" and, by October, the company will be operating 14 Learjet 31As, 60s and Challenger 601-3Rs.

The European market is still largely untouched, although Corpavia Club has ordered two Raytheon Beechjet 400As, with an option for ten more, for its programme guaranteeing members 150h a year in return for a one-time fee, annual subscription and flight-hour fee. Jet Aviation will manage the aircraft, with the initial pair to be located at its Geneva base.

Manufacturers report that they are increasing asked about alternatives to buying aircraft, including fractional ownership. □