

SHOW REPORT
NBAA

The annual National Business Aviation Association (NBAA) convention took place in Orlando, Florida, last week with industry cautiously optimistic amid signs that confidence is returning. This year's record-breaking event attracted over 1,000 exhibitors, each aiming to lure cost-conscious customers back into the fold. Murdo Morrison, Guy Norris, Kate Sarsfield, Graham Warwick and Justin Wastnage report.

PRODUCT LAUNCHES

Show heralds wave of upgrades

Gulfstream G450 makes surprise entrance by flying to the convention, while Bombardier reveals Global Express XRS

Gulfstream sprang the biggest surprise at NBAA, unveiling the G450 long-range business jet by flying the aircraft to the show. The G450 first flew in April and four aircraft are now in flight test, with US certification scheduled for the third quarter of next year, leading to service entry in the second quarter of 2005.

Bombardier unveiled the Global Express XRS upgrade of its ultra-long-range business jet, while Cessna introduced the Citation XLS update of the super-light Excel and improvements to the high-speed Citation X for 2004.

Gulfstream's G450 is a derivative of the GIV with uprated Rolls-Royce Tay engines, increased range, improved cabin, more reliable systems and PlaneView integrated flightdeck developed for the ultra-long-range G550. Gulfstream has grafted the G550 nose onto the GIV airframe, extending the fuselage by 300mm (12in) to provide a larger cockpit and moving the main entry door aft for better cabin access.

Developed in parallel with the GV-SP-based G500/G550, the aircraft will be available alongside the GIV-SP-based G300 and G400. But the manufacturer expects the G400 to be replaced eventually by the

G450, which costs just \$2 million more at \$33 million outfitted.

The Tay 611-8C provides 6% more thrust, 2% lower specific fuel consumption and an increased, 12,000h, time between overhauls. The engine has a new fan and turbine, full-authority digital control, and a composite thrust-reverser supplied by Nordam that saves 320kg (700lb). Hot-and-high take-off distance is reduced by 430ft (130m) and range increased by 460km (250nm) at Mach 0.8, to 8,050km.

Systems with high removal rates in the GIV family have been replaced by more reliable equivalents developed for the G550, including Hamilton Sundstrand

integrated drive generators and the Honeywell 36-150 auxiliary power unit. Pressurisation has been increased to reduce cabin altitude to 5,000ft up to 41,000ft.

Based on Honeywell's Primus Epic integrated avionics, the PlaneView cockpit features four large-format liquid-crystal displays (LCD), and standard enhanced vision system (EVS) and head-up display (HUD). The G450 will have the same pilot type rating as the PlaneView-equipped G500/G550.

Bombardier's \$45.5 million Global XRS is scheduled to enter service in early 2006, superseding the Global Express in production. The aircraft features an additional 674kg

(1,486lb)-capacity forward fuel tank in the wing/body fairing that boosts range to 11,400km at M0.85.

Pressurisation is increased to reduce cabin altitude to 4,500ft up to 45,000ft. Other cabin improvements include a relocated crew rest area, two additional windows, LED lighting and larger baggage area. The Global XRS will have Bombardier's EVS as standard, comprising the CMC Electronics infrared sensor and Thales Avionics HUD.

Cessna is flight-testing the Citation XLS, which provides a 90kg gross-weight increase, 415km range increase to 3,600km, and a faster, 25min, direct climb to 45,000ft. Pratt & Whitney Canada PW545B engines provide 4.9% more thrust. The XLS's Honeywell Primus 1000 avionics suite includes three 205 x 255mm LCDs.

The \$9.9 million XLS will replace the Excel with deliveries starting mid-2004, says Jack Pelton, senior vice-president product engineering. The 2004 Citation X includes new seats and LED lighting. The Max-Viz EVS-2000 will be available as an option on the \$19 million Citation X, the head-down display of the infrared image providing improved airport situational awareness.



Gulfstream unveiled the G450 business jet by flying it to the NBAA show

COMMUNICATIONS

Rockwell Collins, Arinc widen broadband net

Rockwell Collins is to bring Connexion by Boeing's broadband in-flight communication service to business aircraft, while Arinc launched its competing SkyLink satellite broadband data system at NBAA. Collins will be the exclusive Connexion provider for super mid-size and large business jets, and Bombardier is launch customer for its Exchange system, for the Global family of aircraft. Certification is

planned for the first quarter of 2005.

Gulfstream, meanwhile, is evaluating Arinc's Skylink with the intent of offering the system as an option on its large business jets. ViaSat is producing the Ku-band antenna and transceiver, with the first two production units to be delivered to Gulfstream later this month. In addition, Cessna will offer Skylink on the Citation X, says Bob Thompson, senior

director, Arinc satellite services.

Collins's Exchange system will use the Tailwind 500 antenna already developed for the company's airborne satellite television system. The same tail-mounted Ku-band antenna will be able to handle television and two-way broadband data, but not simultaneously at first, says Denny Helgeson, vice-president and general manager, business and regional systems. The

antenna and transceiver will interface with Collins's Airshow 21 cabin electronics.

Connexion will enter airline service in March next year, and allow users to access the internet, corporate intranets and video conferences, says Helgeson.

Arinc has teamed with SES Americom to use the satellite operator's AMC-1 spacecraft to provide continental US coverage.