

PROPULSION

Engine Alliance's GP7200 ready to fly following tough testing

Alan Peaford

Bruce Hughes, president of the General Electric/Pratt & Whitney Engine Alliance, is happy to shrug off the announced delays to the Airbus A380 test programme that has left his GP7200 engine still waiting to take to the air in Toulouse.

"In the whole scale of an engine development, of the investment and of the returns, a few months does not make a difference," says Hughes. "We support Airbus however we can. Of course we are looking forward to proving the engine on an A380. It's powered and ready for flight."

Venture

The first 10 engines built by the GE-P&W joint venture are either in Toulouse or on their way. "The first four are already on the wing, the second four are for the second aircraft and the other two are spares," Hughes says.

One of the seven engines already delivered has been shipped to the UK for the Farnborough show – the first time a real GP7200 engine has been seen at a show.

"The engine is very easy to move around and will fit in freighters, making it a lot easier for repair," says Hughes.



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The Engine Alliance's GP7200 engine received certification from the US Federal Aviation Administration in January. It has already captured around 55% of the A380 market, had undergone 21 months of tests, altogether running around 7,000 cycles. The FAA performed 25 full-scale

engine certification tests and more than 50 component tests. Its initial certification approved thrust of 76,500lb (340kN).

"We put the GP7200 through as tough a test regime as any engine has ever faced," says Hughes. The engine was tested to more stringent large extended-range twin

engine operations (ETOPS) standards, despite its intended use on the four-engined A380, he adds.

The GP7200 was selected by launch customer Emirates, which is expecting to take delivery of its first aircraft in 2007 after Singapore Airlines receive the first aircraft, fitted with Rolls-Royce engines.

The GP7000 programme also includes MTU, Snecma and TechSpace Aero as partners but it is GE and Pratt & Whitney that take the lead. "We have a joint MRO offered with the engine. Obviously we expect low volume for the first five years but we will increase capacity as time goes on," says Hughes.

Hughes – who is also the GE general manager of the GP7000 programme, will be joined at Farnborough by his opposite number from Pratt & Whitney, Jim Moravec, the director of GP7000 programmes.

Partners

As Moravec is based in Connecticut while Hughes is in Ohio, Farnborough provides a good opportunity for the 'alliance' to get together as well as to meet partners, customers and suppliers. "We do work well together," says Moravec. The pair will be promoting the new customer support service.

"People will see how well the engine performs – the fuel consumption is better than specified and we are sure that with the support programmes in place there will be a lot of interest."

One thing neither Hughes nor Moravec would comment on was the Engine Alliance's plans to power an Airbus A350/370.

Goodrich completes test assembly of GP7200 engine



Step 1 – Rotating the giant fan section to get it into a vertical position.



Step 2 – The propulsor (right) and the fan case (left) ready for assembly.



Step 3 – Fine adjustments before assembly.



Step 4 – Fully assembled engine.

Goodrich has completed the first test assembly of the Engine Alliance GP7200 engine for the Airbus A380 at its France Aerostructures site in Toulouse.

With a fully-assembled engine measuring 12.8ft (3.9m) in diameter, Engine Alliance shipped the engine to Toulouse in a split ship configuration. The test assembly included rejoining the fan case section to the engine core.

Goodrich also installed engine build-up kits consisting of pneumatics and starter systems, hydraulic and fuel

systems, pylon drain, fire extinguisher; and electrical harnesses including the Variable Frequency Generator (VFG) harness.

Finally, the team installed a package of Airbus buyer-furnished equipment including mounts, thrust links, hydraulic pumps, fuel and hydraulic lines, pressure valves and VFG.

The compact VFG is manufactured by Aerolec, a joint venture between Goodrich and Thales and plays a key role on board the A380, producing electricity for the entire aircraft.

Jean Luminet, president, Goodrich Aerospace Europe, says: "Our team is proud to be part of another milestone in the development of this very high profile aircraft as it makes its way into the global fleet."

"Planning for the GP7200 engine assembly began as far back as January 2005 and involved a delicate balance of many technically challenging tasks. We even had to modify our infrastructure to accommodate the assembly."

Earlier in the A380's proving tests, Goodrich's evacuation slides played a

key role in the full scale evacuation test which was successfully completed in March in Hamburg, Germany.

The largest evacuation test ever conducted simulated an emergency involving 853 passengers, 18 flight attendants and two flightcrew. It purposely used only half of the 16 Goodrich-produced slides on board to safely evacuate everyone in 78sec in complete darkness.

The European Aviation Safety Agency and representatives from the US FAA declared the test a success.