

Exhaustive Debate

Canadian and French subcontractors haggle over A340 components work

Kingfisher is one of a number of airlines pondering what to do with outstanding options or orders for the Airbus A340-500/-600 family.

DOUGLAS BARRIE/LONDON and ROBERT WALL/PARIS



Magellan Aerospace and Safran subsidiary Aircelle are in a dispute over Airbus A340 engine component work, with the Canadian company trying to renegotiate elements of the award.

Costs are at the heart of the wrangle. The situation is likely being exacerbated by the lackluster market performance of the A340-500 and -600 models.

Bill Matthews, vice president for marketing at Magellan, confirms that the company is using "provisions within the

contract" to try to renegotiate arrangements with Aircelle. The French company has repeatedly declined to comment to *Aviation Week & Space Technology* on the issue.

"We [Magellan] expect to be clear of this, this year," says Matthews. The com-

Number Crunching

Results from initial flights will help refine geared turbofan's production design

GUY NORRIS/LOS ANGELES

Pratt & Whitney is starting detailed analysis of data from initial flight tests of the PW1000G geared turbofan demonstrator as it prepares to design the first production version for Mitsubishi's Regional Jet.

Early results are keenly awaited by the Japanese manufacturer, as well as by Bombardier, which selected a bigger version of the same engine for its recently launched CSeries airliner. Airbus and Boeing are also paying close attention as they consider the geared turbofan (GTF) against other propulsion options for future narrow-body concepts.

Airbus plans to start testing the engine on its A340-600 technology demonstrator by the end of September, and

has indicated it would consider using the GTF on the A320 family. The test engine arrived in Toulouse this month and is being prepared at Goodrich Aerostructures for mating to the A340 with a special pylon by early September.

"We're taking all the data and doing a detailed review of all the measurements and breaking it down to understand how the fan and the low-pressure (LP) compressor actually performed, but our first take on it shows that it appears to be mapping just how we want it to," says Bob Saia, Pratt & Whitney vice president for the next-generation product family. Although the demonstrator PW1000G is based on the core of a PW6000, and not the purpose-designed high-pressure (HP)

compressor undergoing rig tests at MTU in Munich, Saia says an overall picture is emerging by analyzing performance on a module-by-module basis.

"We can measure absolutes for each of the modules and, when you look at what we have guaranteed to Mitsubishi and Bombardier, we are equal to or above what we told them even though we don't have the right core yet," he says. Data from the fan, LP compressor and fan drive gear modules are positive, while initial results from the MTU rig show the HP compressor is "meeting targets."

Taken together with component rig tests, the combined results from the module work "get us 75-80% of what we've managed to demonstrate at or above guarantees. The only thing we've not tested is a full-up LP turbine, but the high-speed characteristics we've measured show that we are in the box for about half of that remaining 20-25%," says Saia.

In the first phase in July, Pratt amassed 43 hr. of flight test time during 12 sorties using its Plattsburgh, N.Y.-based Boeing 747SP testbed. Saia says this was longer than expected, mostly because of stormy

pany's aim is "to get the contract arrangements back on to an even footing."

The issue was raised during an ongoing employment tribunal case in the U.K. involving Magellan Aerospace and Brian Little, its former European senior vice president. Little claims he was dismissed as a result of bringing financial concerns to management attention. Magellan says he was dismissed for gross misconduct. Little has yet to give evidence to the tribunal.

The contract in question is likely the deal struck in 1998 covering the manufacture of A340-500/-600 engine exhaust components. The Toronto-based company is providing the exhaust nozzle for the Rolls-Royce Trent 500 until 2012. The A340 work is an important element of Magellan's overall business; nonrecurring costs on the program are believed to be roughly \$40 million.

Giving evidence at a tribunal hearing, John Dekker, Magellan's vice president for finance, said the company had made a significant investment in the A340, and there was a "risk" if the aircraft's production run did not meet initial expectations.

Magellan has been looking to use its A340 contract as a stepping-stone to winning more Airbus work, including on the A350. It recently secured additional work from Airbus, but this did not include the A350.

Airbus currently has orders for 140 A340-500/-600s; 31 aircraft still have to be delivered. Some of the remaining balance may not come to fruition. Out of the total order, 38 are for the -500 and 102 are for the -600.

Even as Airbus has continued to ramp up wide-body output, lack of demand has kept A340-500/-600 production flat. Although the A330/A340 line is moving

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toward building 11 aircraft a month, from eight, only one of those slots is slated for the A340.

A340 orders had already been lagging under competition with the Boeing 777, but recent increases in fuel prices have only worsened the problem. Several customers also are dropping their plans to take the aircraft, opting instead for other models. Finnair and Iberia are among those shifting A340 commitments to the A330, and Kingfisher Air-

lines recently reduced its commitment to the four-engine wide-body transport. Virgin Atlantic still has to take its final six A340-600s out of its original order for 20, although there are suggestions that delivery of the remaining aircraft has been "suspended indefinitely."

Some companies have publicly acknowledged that they may not break even on the A340-500/-600 program. Saab officials previously conceded that the company may not recoup its investment to become an aerostructures supplier on the program. However, the officials shrug it off, noting that the A340 program has given Saab an "in" to being an Airbus supplier on other projects.

Matthews would not comment on whether Magellan would recover its investment in the A340-500/-600. He suggests that the company was cautious on the original projections, but admits that sales of the aircraft could have been a lot better.

When Magellan won the A340-500/-600 business in 1998, orders and options for the type stood at 130. At the time, it was expected that sales of the aircraft would likely exceed 300. Delivery of the type began in late 2002. The "after-market" business, Matthews suggests, on its A340 products should also provide a further source of revenue. ☛

weather conditions over the northeastern U.S. in July, which curtailed a few flights—forcing some tests to be repeated. "But we had excellent air starts and good handling characteristics. The only tweak might be to have the LP compressor not at such a high pressure for the next tests, but we're talking a tenth of one percent—nothing major," he adds.

Tests also revealed good performance retention. "We didn't see any degradation in any of the key measurements in fuel consumption, fan blade efficiency or in the fan drive gear system," says Saia. This was despite "some pretty aggressive flight maneuvers, decelerations, accelerations, air starts and wind-up turns and flying at high angles of attack."

Total running time on the PW1000G, including ground tests at West Palm Beach, Fla., and ground time on the 747SP is now 306 hr. The upcoming Airbus trials are scheduled to run through November and cover some 75-100 hr.

Maximum takeoff power on the PW1000G was more than 28,000 lb. thrust during tests covering performance up to 40,000 ft.

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The work in France will focus on overall steady-state performance, installation elements and inflight as well as cut-back and fly-over noise characteristics. As the A340-600 is powered by modern Rolls-Royce Trent 500s, this should allow an accurate noise assessment of the GTF that was not possible with the older-generation JTD9-powered 747SP.

The design of the Mitsubishi Regional Jet engine will be based on the same core as the PW810 business jet engine, which is due to make its first run in mid-2009. The first run of the MRJ powerplant, designated the PW1217G, is due in December 2009, with the CSeries engine running in 2010. Both MRJ and CSeries aircraft are scheduled to enter service in 2013. ☛

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