McDonnell Douglas ready to launch UDF airliners

McDonnell Douglas plans a double launch of its propfan-powered derivatives of the MD-87 and MD-88 by next June, and possibly earlier, reports Julian Moxon. The “launch” means that orders will be accepted from that point.

Airlines are showing considerable interest in both the 114-seat MD-81 and the 143-seat MD-92, and the company expects to take its first firm orders as soon as the launch announcement is made. Delta, American, British Airways, and Scandinavian Airlines System are known to be among those airlines considering either or both aircraft.

“We’ve been working diligently with a large number of potential customers,” says MD spokesman Bill Neel. “They’re constantly in our facility looking at the testbed MD-80.”

Supporting the go-ahead decision is the rapid technical progress that has been made with the ultra-high-bypass (UHB) engine concept applied to the MD-80. McDonnell Douglas says it has reached an “extremely high” confidence level as a result of the three-year technology refinement programme, and is ready to offer both aircraft for delivery in 1992 (mid-year for the MD-91, and towards the end of the year for the MD-92).

MD’s principal selling point to the airlines is that the new aircraft will burn around 36 per cent less fuel per trip than the conventionally-powered MD-87 and MD-88. Strong emphasis is also being placed on improving passenger comfort within the cabin. Cabin interior noise tests have been particularly encouraging, says Neel, achieving a goal of a noise level throughout the cabin equivalent to that experienced by MD-80 passengers today who are seated ahead of the wing. Work is also proceeding on reducing the weight of the sound-deadening material at the rear of the cabin to less than 1,000lb in the production aircraft.

Flight testing of the testbed MD-80 powered by the proof-of-concept General Electric GE36 UDF engine has been extended as a result of the two-month delay in the Pratt & Whitney/Allison programme to flight-test the 578-DX ultra-high-bypass engine on the same aircraft. The extra time has been used to carry out a further series of neighbourhood flyover tests. For these, the MD-80 was powered by the initial configuration of the GE36, with eight blades on each row of the contra-rotating propulsor. Again, the engine pylon was also successfully tested.

McDonnell Douglas had planned to fly a number of airline executives in the GE36-powered MD-80 this month. This has been delayed because of minor damage suffered by the engine on December 4, when a high-pressure compressor blade retention pin came loose and was ingested into the core. The engine will be repaired soon, but the forthcoming Christmas break means that the executives will not sample propfan power until early January.

Flight testing of the second GE36 configuration, with ten blades on the first propulsor and eight on the second, was discontinued after a “mechanical anomaly” was found with the engine. GE36 manager Bruce Gordon declined to expand on the exact nature of the problem. “The engine was quieter, and did all we thought it would do,” he said. Gordon says that the production GE36 will also feature a different number of blades in each row, “and there will be more blades than in the demonstrator”.

The first flight-test 578DX engine will now be delivered to Edwards Air Force base at the end of February. The engine runs for the first time this week, with the first set of flightworthy blades produced by Hamilton Standard. Delays have been caused by difficulty in manufacturing the thin, swept blades, and by damage sustained by the second test engine when components from a piece of test equipment were accidentally ingested into the compressor. At the time the first test engine, which had been running successfully (with solid aluminium blades) since August, was being stripped for mechanical inspection. This engine will be used in the flight test programme, equipped with another set of propulsor blades.

McDonnell Douglas says that airlines interested in buying both the MD-91 and MD-92 are asking for a common engine to power both aircraft, running at normal rated power (25,000lb thrust) for the larger aircraft, and derated to around 22,000lb for the MD-91. “We plan to demonstrate both engines to the airlines, and let them decide which engine they want,” says the company. It appears likely, however, that only one type will eventually be chosen to power both aircraft. This raises the question of whether the production PWA engine will be ready in time for the mid-1992 certification date. The 578DX is well behind GE’s UDF on flight testing, and although many UHB questions have been answered in the GE36 flight test programme, the PWA engine will have to overcome doubt within some airlines about the reliability of the geared propulsor drive (the UDF propulsor is directly driven).

Gordon says that GE is “protecting” its UDF production schedule for service entry of the MD-91 at that time. “We’re very positive about the MD-91,” he says. GE is testing various components of the production engine, and will run the new core “sometime next year”.

McDonnell Douglas is alone in going ahead with a propfan-powered airliner, Boeing having withdrawn its proposed 150-seat 7J7 earlier this year, citing excessive development costs and lack of airline interest. MD has been able to take advantage of the extensive commonality with its existing aircraft to keep launch costs down. The company is also competing to supply the US Navy with a new long-range anti-submarine warfare aircraft based on the MD-90 series.

NEWS SCAN

Gulf Air has installed a new computerised departure control system (DCS) at Seeb International Airport in Muscat, Oman. The equipment will enable passengers travelling more than one sector to check straight through to their ultimate destinations.

China and Portugal are to discuss plans for an international airport in the Portuguese territory of Macao. The proposed airport would cost $400 million and be ready by 1992. Macao returns to Chinese rule in 1999.