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Airbus' Bie Twin, its A330, wiM eo info commercial service in 1983

engines. Fuel burn with the GE CF6-80C2s is
about 3-4% higher than promised, affecting
performance guarantees. McDonnell Douglas
and GE are working to improve the CF6-
80C2 installation. MD-11 aerodynamics are
looking good, says the manufacturer, and a weight-reduction programme will remove 900kg to improve performance by 0.75%. McDonnell Douglas is preparing to offer airlines a stretched, 372-passenger MD-12X with new, increased-span wing (the MD-11 has a modified DC-10 wing). If launched in mid-1991, the aircraft would be ready for delivery in 1995 at a development cost exceeding $1 billion. Span would be in-creased by 12-15m and maximum take-off weight by about 44t (to 317.5t) over the basic MD-11, giving greater range capability as well as passenger capacity.
MDC declares a total of 372 orders and commitments of various kinds for the MD-11, and the customer list shows some solid names: American, Delta, Federal Express, KLM, JAL, Singapore Airlines and Swissair among them. Japanese finance house Mitsui has bought MD-lls for leasing out and is reportedly pushing for the MD-12X. Others said to be interested in the stretched aircraft include Delta, FedEx and JAL.

With the A330 first flight still 22 months away (although an A340-300 first flight is just nine months away), Airbus has an-nounced that its first development of the basic twinjet would be to increase its range by 1,200km to 10,000km with the same 335-passenger payload. This would be achieved by using the maximum 320kN (72,0001b)

thrust offered as optional by all three engine manufacturers, and increase the A330's maxi-mum take-off weight from 212t to 223t.
The next anticipated development would be to offer a lower-deck cabin in the A330, increasing seating to 385. Then an 8.5m fuselage stretch would bring the two-class (single-deck) capacity up from 335 to 385 passengers, and to 435 with a lower-deck cabin.
The first A340-300 development expected
is also a range increase, by just 75km to 13,250km. An engine-thrust increase from 140kN to 151kN would raise the four-jet's maximum take-off weight by 9.5t to 263t. Subsequent developments are expected to follow the same pattern as those in the A330, offering lower-deck seating and/or a stretch, a combination of which could take the A340-300's three-class capacity from 295 to 390. For the 262-seat, extremely-long-range A340-200, Airbus believes that the first de-velopment will be to offer increased payload, because the smaller four-jet's 14,000km range is expected to be as much as customers will want.

NE W TECHNOLOGY

The only part of the A330/A340 series which is derived from existing Airbus products is the fuselage: the wing (common to both types) is new. Flight controls and cockpit are based on experience with the A320 narrow-body, but the A330/A340 will be the Europe-an consortium's first fly-by-wire widebodies, and the flight management system has to have much higher capacity, given the consid-

erably longer range and more complex air-craft systems.
There are 121 firm orders for the A330 and 86 for the A340, says Airbus. The first of the series to appear is the A340-300 which flies in May next year and enters service in May 1992. The A340-200 follows, flying in Octo-ber 1991 and entering service in August 1992. The A330 flies in June 1992 and enters airline service in September 1993.
Boeing, despite the delay in launching its new big twin, is working to protect a May 1995 first-delivery date. When the 767-X finally becomes the 777, the company will be launching an entirely new aeroplane. As the project designator suggests, the aircraft start-ed life as a 767 derivative, but is now closer to the 747-100 in size and 747-400 in systems than it is to Boeing's current big twin.
The 777, as now envisaged, will be the biggest of the big twins. According to Boeing plans, the initial, "A-market" aircraft would have an almost 234t maximum take-off weight and would carry 353 to 374 passen-gers almost 7,800km, powered by two 316kN-thrust turbofans. A growth, or "B-market" version weighing 263t, powered by 365kN-thrust engines and carrying 286 (three-class) passengers 12,200km could be ready for delivery by 1996.
The A market, in which Boeing foresees the largest demand, is for a DC-10-10/
L. 1011-1 replacement, but the company ex-
pects airlines to order more aircraft than the
trijets they have today. Growth will account
for three-quarters of the market, Boeing
believes. The B-market aircraft is seen as a

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