



Airbus continues to develop the CFM56-powered A340-300, with enhanced models arriving in 2004

Airbus continues to seek an A330-200F launch customer, with LanChile emerging earlier this year as one potential customer. Studies also continue into a further A330 shrink to replace the A300/A310 (see A300/A310 replacement studies above).

A long-range variant of the A330-300 is also being studied to provide a direct rival to lower weight Boeing 777 models. Dubbed the A330-300 "high-gross-weight" (HGW), the model would have a 7t increase in MTOW to 240t, associated structural strengthening of the wing, increased fuel capacity (to 139,000 litres) and more powerful engines. These changes would boost the range of the 295-seater to around 11,100km.

The A330 is the lead aircraft in the A330/A340 Enhanced programme, which is effectively a mid-life update for the two long-range widebodies. The key elements of the enhancements come from new developments for the A340-500/600 and include the fly-by-wire controlled rudder, improved flightdeck features (including liquid crystal displays, updated cabin and a new rear crew-rest area option). The new features are expected to become standard across the range in the longer term.

The lead Enhanced aircraft is an A330-300 for Northwest Airlines due for delivery in mid-2003. The second variant will be an A330-200 for EVA Airways due in early 2004.

Qantas is soon to become one of the first airlines to fly a "paperless" cockpit avionics suite in revenue service when it takes delivery of its Airbus A330s. The system provides pilots with an "electronic flight-bag", comprising digitally stored maps, approach plates, performance flight manuals and charts. The cockpit is equipped with an additional pair of screens – one on each side – to enable the pilots to monitor aircraft position superimposed on a "moving map" showing topographical, aeronautical and procedural data.

The aim is to eliminate the need for crew to carry folders of charts and books of aeronautical informa-

tion and flight documentation, reducing costs.

A tanker version of the A330, dubbed the KC-330, was proposed by EADS earlier this year to meet the US Air Force's requirement for 100 leased tankers. The Airbus-based offering was rejected in favour of Boeing 767 tankers. The European company is promoting the A330 as an alternative platform to the 767 for the USAF's Multirole Command and Control Aircraft (MC2A).

The A330 tanker is being offered by the AirTanker consortium to meet the UK Ministry of Defence's requirement for Future Strategic Tanker Aircraft (FSTA). The A330 is competing against a Boeing 767-based offering. The manufacturers are bidding

to provide around 20 tankers for 27 years, which the MoD will fund using a private finance initiative (PFI). Earlier this year, the MoD delayed the target entry into service date for the aircraft by 12 months, with introduction now due to start in early 2008. A selection is expected by the end of this year.

Production

Airbus France performs final assembly of the A330 alongside the A340 at Toulouse. Last year, Airbus delivered 35 A330s and 22 A340s. Output had been due to increase to eight per month during 2002, but is currently running at around four.

Ordered: 410

Delivered: 235

A340

Launched in parallel with the A330 in June 1987, the four-engined A340 can be categorised into two distinct families – the CFM56-5C- powered 260- to 295-seat -200/300 and the R-R Trent 500-powered 310- to 380-seat -500/600.

The -300 was the first to fly, in October 1991, and this version entered commercial service in March 1993 with Air France. Lufthansa put the smaller -200 into service the same month. A higher gross-weight -300 version developed for Singapore Airlines entered service in April 1996. A very-long-range derivative of the smaller -200, dubbed the A340-800 (the name is derived from its 8,000nm range) was also developed, although only one has been built for a VIP operator.

Airbus launched the A340-500/600 models in December 1997, with the new family featuring a 20% larger wing with 1.6m wing-tip extensions. Because of the increased take-off weights, a four-wheel centre main undercarriage assembly replaces the existing two-wheel unit.

A340-600 flight testing began in April last year. The 1,600h certification programme involved three

AIRBUS A340	-200	-300	-500	-600
Length (m)	59.4	63.7	67.9	75.3
Wingspan (m)	60.3	60.3	63.45	63.45
Height (m)	16.83	16.83	17.1	17.29
Wing area (m ²)	361.63	361.63	437.3	437.3
Cabin width (m)	5.28	5.28	5.28	5.28
Max take-off weight (kg)	275,000	271,000	365,000	365,000
MTOW option	-	275,000	368,000	368,000
Max landing weight (kg)	185,000	192,000	236,000	254,000
Operating empty weight (kg)	129,000	130,080	170,400	177,000
Max zero fuel weight (kg)	173,000	181,000	222,000	240,000
Max payload (kg)	43,500	50,920	51,200	62,300
Powerplant	4 x 34,000lb CFMI CFM56-5C4	4 x 34,000lb CFMI CFM56-5C4	4 x 53,000lb R-R Trent 553	4 x 56,000lb R-R Trent 556
Standard fuel capacity (l)	155,040	141,500	214,800	194,880
Normal operating speed (Mach)	0.82	0.82	0.83	0.83
Max cruise speed (kt)	493	493	492	492
Max cruising altitude (ft)	41,100	41,100	41,100	41,100
Take-off field length (m, sea level/ISA)	2,990	3,000	3,050	3,100
Landing field length (m, sea level/ISA)	1,890	1,926	2,010	2,100
Accommodation (1-class)	420	440	440	440
Accommodation (2-class)	300	335	-	-
Accommodation (3-class)	239-263	295	313	380
Design range with pax	14,800km/239	13,100km/295	15,750km/313	13,900km/380
Option	-	13,500km/295	16,000km/313	-