



The A330-200 has proved popular with charter airlines on both sides of the Atlantic

market. The 335-seat (two-class) A330-300 was the first production variant, which was first flown in November 1992 and entered commercial service in January 1994 with French carrier Air Inter. A smaller, longer-range 253-seat (three class) version, the A330-200, was flown in August 1997 and entered service in April 1998 with launch operator Canada 3000.

The new model is 10 frames (5.33m) shorter than the -300, has increased weights (by using the strengthened wing of the high gross weight A340-300) and extra fuel capacity. It is designed to cross a distance of more than 12,000km.

Both versions of the A330 are offered with all of the major engine manufacturers' powerplants, including the GE CF6-80E1, P&W PW4164/4168 and R-R Trent 772.

Airbus has developed a high gross weight, longer range version of the A330-300 which uses the -200's strengthened wing and MTOW, but does not have the extra fuel capacity.

Airbus is studying a short fuselage A330 derivative, dubbed the "A330-100" (project name A330M19), as a potential 200-seat A300/A310 replacement. The aircraft would have a nine-frame fuselage shrink compared with the A330-200 and 19 compared with the -300. The principal design changes are a five-frame shortened forward fuselage and the removal of four frames aft of the main wing to shave about 4.8m off the overall 59m length of the A330-200.

The aircraft will require an engine in the 60,000lb-thrust range and competing manufacturers are already manoeuvring to be on the programme. Pratt & Whitney is believed to be looking at either a derated version of the A330's PW4168 or the proposed PW8160 geared turbofan. R-R and General Electric are likely to offer a derated Trent 700 and CF6-80E1, respectively.

Airbus has looked at developing an enlarged

version of the A330, but these studies are on hold. The enlarged aircraft could be equipped with the bigger wing being developed for the A340-600.

Production Aerospatiale performs final assembly of the A330 alongside the A340 at Toulouse. In 1998, Airbus delivered 47 A330/A340s, comprising 23 A330s and 24 A340s. The production rate is now about 5.5 a month, mostly the A330.

Ordered	257
Delivered	108

A340

THE FOUR-ENGINE A340 was launched in parallel with the A330 in June 1987. Initially, two versions were offered - the 263-seat -200 (three-class) and 295-seat -300 - with both versions equipped with the CFM56-5C engine.

The first flight was in October 1991, and the A340-300 and -200 entered commercial service in March 1993 with Air France and Lufthansa, respectively.

Singapore Airlines was launch customer for a high gross weight, longer-range version of the -300, which entered service in April 1996. The new model has a strengthened wing structure and higher thrust engines. A very-long-range derivative of the smaller -200, dubbed the A340-8000 (14,800km range), was also developed. This derivative has increased weights and fuel capacity in the rear cargo hold, and just one example has been built, for a VIP operator.

In June 1997, Airbus announced the provisional launch of a major derivative A340 family, the R-R Trent 500-powered A340-500/600. The \$2.5 billion aircraft programme received a full go-ahead in December 1997, by which time 100 commitments from seven customers had been secured.

The new family includes a 380-seat version, the -600 and an ultra-long-range model, the

313-seat -500. Key to the new family is the 20% larger wing, which incorporates a 1.6m wing-box insert to increase area and fuel capacity, along with 1.6m wingtip extensions. The MTOW will be increased to 365t, requiring a four-wheel centre main undercarriage unit to replace the existing two-wheel unit.

The R-R Trent 500 is rated at 53-56,000lb thrust, but a version with an increased thrust of 60,000lb is being studied for longer-range, increased-weight versions of the aircraft. The R-R engine was selected after Airbus initially studied a GE-powered version during 1996 but the US engine firm withdrew its offer. An offer from P&W was also studied, but R-R was awarded a contract which effectively makes it the exclusive supplier under an agreement that is not due to expire until 2006.

In mid-1999, P&W renewed efforts to power the A340-500/600, offering the PW8160 geared fan engine on the A340-500/600 as early as 2003.

Sextant Avionique has been awarded a contract to be sole supplier of flat-panel LCDs for the new A340-500/600. Sextant will also supply LCDs for the retrofit of in-service A330s and A340s.

The first A340-600 will be flown in January 2001, followed by the -500 in July 2001. Deliveries of the A340-600 will begin in early 2002, followed shortly by the A340-500.

Production	See A330
Ordered	270
Delivered	162

A3XX

AIRBUS INTENDS to complete its product line-up with an all-new 480/660-seat family, dubbed the A3XX, which is scheduled to enter service in 2005. In April 1996, Airbus established its Large Aircraft division (A/L), headed by Jurgen Thomas, to develop the new family of double-deck aircraft.

Before this, Airbus and its US rival Boeing had studied the joint development of a single, very large commercial transport, but this partnership dissolved in 1994 and the two companies are now set for a head-on fight.

The four-engined A3XX will be offered with a choice of powerplants in the 67,000-75,000lb thrust bracket, and the consortium has an MoU with R-R and the GE-P&W Engine Alliance for the Trent 900 and GP7200 respectively.

When the A3XX was first proposed, Airbus had targeted an in-service date of late 2003. In early 1998, it emerged that this target had slipped by at least nine months, to the third quarter of 2004, and the consortium is now aiming to deliver the first aircraft in mid-2005. Airbus is determined to offer direct operating costs 15-20% below those of the rival Boeing 747-400, and says the delays are partly due to the fact that it had not achieved this "engineering target".

Airbus aims to complete the baseline defini-