COMMERCIAL AIRCRAFT OF THE WORLD

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The Airbus consortium is planning a competitor in what is Boeing's exclusive territory, the long-range, high-capacity transport with a 600- to 800-seat, 13,000km-range (7,030nm) widebody aircraft. At double the capacity of the A340, the project would be expensive to develop and would only go ahead if the market proves commercially viable.

Airbus wanted to launch the aircraft by 1997, according to the consortium's Chief Operating Officer Herbert Flosdorff, for entry into service around 2002/3. The proposed launch date has been brought forward to 1995, however, and was announced at the Paris air show in 1991. Airbus intends to build a new aircraft, with radically different concepts being considered to meet the requirements of long, non-stop range and high passenger capacity.
To compete, the new type would need im-proved efficiency over present long-range wide-bodies. A wider fuselage than the A340, appearing in early artists impressions to have a horizontal-oval cross-section, would itself con-tribute lift.
Initially proposed to have two passenger decks, a flying-wing design has also been considered to allow a higher ratio of internal capacity to external dimensions.
Deutsche Aerospace, an Airbus Industrie part-ner, has revealed its first proposal for a 600- to 1,000-seat long-range transport aircraft, the A2000.

The design includes a conventionally shaped cabin cross-section, with three vertically stacked passenger decks. Passenger seating would be economy class on the top deck, business class on the middle deck with first-class passengers ac-commodated on the lower deck and provided with beds.
A2000 technical details include: length 78m; wingspan 80m; height 23m and wing area 760m2

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MTOW 530t; range 13,000km; 615 passengers; and cruise speed M0.85.
Power could be provided by the new increased-bypass-ratio General Electric's (GE) GE90 or Pratt & Whitney's (P&W) ultra-high-bypass ad-vanced-ducted-propeller engine now under devel-opment. Aerodynamic drag reductions provided by increased computer control over stability would also improve efficiency.
Airbus is to order four Super Airbus Trans-porters to move 40-50t aircraft sub-assemblies between partner companies' factories and the final assembly line at Toulouse.
Based on new-build A300-600R airframes, the aircraft will have an upward-opening nose • sec-tion, 7m-diameter fuselage section and a lowered flightdeck. Enlarging the fin and adding large end-plates to the horizontal tail sections will increase directional stability. The first aircraft is expected to enter service in the mid-1990s.
In addition to its primary role, the aircraft would also be able to carry fully assembled, high-bypass turbofan engines or space-launcher sections.
Airbus partners have formed SATEC to bid for the contract, with British Aerospace (BAe) bid-ding separately. Subcontractors bidding include Caso, Tracor, Deutsche Aerospace and Marshall of Cambridge.
To rebuild its fleet, Kuwait Airways announced orders for 24 aircraft including every Airbus type,

with an option to convert A340 orders to A330s, at the 1991 Paris show.
Airbus believes its proposed A319 130-seat model, derived from the A320, would gain at least half of a potential 950-aircraft market. To achieve an in-service date of 1995, the project must be launched by the end of this year or early

HIGHLIGHTS

OF THE YEAR
• Airbus added its 100th customer when America West ordered A320s.

• Delivery of the 200th A320 in July to
Air Inter followed the type's third year in service, April 1988 — April 1991.
• The first A300B number 002 retired in

November last year, after 16 years' serv-ice, having been owned and operated by Trans European Airways since delivery. The aircraft, bought in 1974, flew 31,029h, carried 3,736,550 passengers and made 14,946 landings. It was also used to carry freight occasionally, with the passenger seats removed.
• The 100th A300-600 was delivered to

American Airlines in May 1991.
• A record flight of eight hours dura-
tion, 4,930km was achieved by an A320 on 27 May, 1991.
• Boeing launched the twin-engined 777
with a firm order from All Nippon Airways for 15 of the type, w(

ith high-
density seating for use on its domestic routes. ' mi-

• Boeing's first commercial 727-100 N7001U retired after 25 years service, 64,492 flight hours and 48,057 take-offs and landings. It is now in Seattle's Museum of Flight.
• The prototype Boeing 707 was flown
over the company's Seattle sites in July 1991, to commemorate Boeing's 75th anniversary.
• BAe cut the first metal for Airbus

A330 wing panels.
• Comair launched the BAe RJ70 with
an order for ten aircraft.

• The MDC MD-11 was certificated by
the FAA on 8 November 1990.
• Finnair, launch customer for the MDC
MD-11 took delivery of the first of four aircraft ordered.

1992. CFM International is expected to develop a lOOkN-thrust (2,2501b) version of its CFM56-5, and International Aero Engines has been ap-proached about a scaled-down V2500 powerplant. Aimed at existing A320 customers, Airbus sees the A319 complementing the Deutsche Aero-space/Alenia consortium 80- to 120-seater.

Airbus A300/A310 The first freighter model to be built on the Airbus production line is launched with a firm order for 25 A300-600F freighters from Federal Express, the overnight, door-to-door freight and small-package airline. Federal Express intends to use the A300s on its internal US domestic routes, replacing Boeing 727-100s. The

airline expects to gain 40% more capacity from each new aircraft than from two 727-100s, and save 273kN GE CF6-80C2 engines, A300-600F deliveries are due to start in 1994 at six a year. A300 freighters now in operation were built as passenger aircraft and converted to cargo aircraft later.
EROPS certification was obtained in March 1990 for A300 and A310 types using GE CF6-80C2 engines, both from the Joint European Airworthiness Authorities and the FAA, for flights up to 180min from the nearest suitable airport. Both authorities also approved the A310 with P&W PW4152s for 120min EROPS. Britain's CAA has certificated the A300-600R for 361 passengers in an all-economy layout. New orders include: A300-600: Ansett World-wide AS (2); Federal Express (25F); Japan Air System (6); Korean Air (1); United Aviation Services (3); unannounced, (1).
A310: Emirates (1); Singapore Airlines, (3); TEA, (1).
Production status: A300: total orders 449; deliv-ered 352. -600: total orders 210; delivered 104. A210: total orders 250; delivered 194. -300: total orders 165; delivered 109.

Airbus A320 Airbus expects to deliver 130 A320s this year, with a production rate raised to ten a month. April this year marked the short-haul airliner's third year in service, the fleet having carried more than 23 million passengers in 298,000 flight hours. Airbus claims a fleet relia-bility of 98.1% in the last twelve-month period, French carrier Air Inter achieving 98.9% for its fleet, operating an average 6.4 flights daily. New orders include: Air Lanka (1); All Nippon (3); America West (48); Austrian Airlines (7); ILFC (1); Lufthansa (3); Swissair (7).
Production status: Total orders 658; delivered
200. Production rate ten a month.

Airbus A321 The first flight is due in the first quarter of 1993 and deliveries are due to begin early in 1994. A stretched version of the success-ful standard-body A320 aircraft, the Airbus A321, will have wing improvements, including an ex-tended trailing-edge with Fowler flaps and tab, redesigned flap track and tab fairings. Higher operating weights and a 7m-longer fuselage will allow it to carry 186 passengers in a two-class layout, 36 more passengers than the earlier A320's capacity. According to Airbus, static test-ing of the A320 fuselage shows that very little modification will be needed to meet the strength requirements for the A321.
Aeritalia is designing and building the 4.3m-long, 4m-diameter front-fuselage plug. BAe will provide the rear plug and has started production of the first A321 wing components at its Chester factory.
Final assembly and passenger interior installa-tions of A321s will be carried out by Deutsche Airbus at its Hamburg factory, starting in 1992. New orders include: Austrian Airlines (6); ILFC (3); Swissair (19).
Production status: Total orders 140.

Airbus A330/A340 Airbus is working on -3C10X versions, offering greater payload capacity, and -400X stretched versions, which will carry more passengers. The first A340 fuselage assemblies
arrived at the new Colomiers assembly building
in November and wing deliveries began in
December 1990. The purpose-built site allows
each principal stage of aircraft production to be
carried out independently, reducing final-

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