The A330 Family
Powering into the future

Benefiting from over 20 years of continuous incremental innovation, the A330 is a modern, profitable and reliable aircraft family that provides tailored solutions for every market today and for the future. That is why more flights are flown by far with the A330 than any other widebody aircraft (Source: IATA 2015).

The A330 Family, part of Airbus’ widebody family, has five in-service members – the A330-200, A330-300, A330-200F, ACJ330 and the A330 MRTT – along with two A330neo versions – the A330-800 and the A330-900, which were launched in 2014 and are currently under development. Together this versatile widebody product line covers all market segments with one twin-engine aircraft Family.

Low operating costs, high efficiency, flexibility and optimised performance make the A330 Family popular with an ever-increasing operator base (over 100 airlines worldwide), as well as with passengers – who enjoy more personal space with Airbus’ modern long-haul comfort standard of 18-inch wide seats in economy class.

From 30 minutes short routes up to 15 hours long haul, the A330 offers the most efficient option spanning 200-440 seats without compromising on comfort, while being one of the most reliable aircraft ever with average operational reliability of 99.5 per cent. On average, an A330 aircraft takes off or lands somewhere in the world every 20 seconds.

The A330 Family shares many commonalities with the A350 XWB. With the common type rating an A330 pilot can qualify on the A350 XWB in eight working days without full flight simulator time and then be able to fly both aircraft under a single license endorsement maximizing the pilot’s productivity and minimizing training cost for the airline

PASSENGER AIRCRAFT

The A330-200, seating 247 passengers in three classes, has the versatility to cover all ranges from short-haul to true long haul – ideal for point to point operations.

The A330-300, with 277 passengers in three classes has unmatched per-seat costs in its category, maintaining its position as the most economical twin-aisle regional airliner.

Airbus has further enhanced performance for this popular airliner family by increasing the maximum take-off weight up to 242 tonnes (available on both the A330-300 and the A330-
200). The new take-off weight combined with the fuel capacity increase enables operators to carry additional payload on longer missions up to 7,250 nautical miles (13,427km) for the -200 and to 6,350 nm (11,760km) for the -300. Overall, the full payload range now increases by around 500nm over the previous 235 tonnes A330-300, and by around 400nm over the previous 238 tonnes A330-200.

The additional fuel capacity for the A330-300 allows operators to fly new longer distance routes, such as direct flights between South-East Asia and Europe. For example, it permits westbound direct flights such as Kuala Lumpur to Frankfurt or Paris, with the ability to carry additional cargo on the eastbound return flight.

A330neo
The A330neo is a true new generation aircraft delivering new generation efficiency. With new wings, new engines and an Airspace cabin, the A330neo flies further with 14% less fuel burn per seat than an A330, 25% less than previous generation aircraft. The A330neo builds on the A330’s proven economics, versatility and is available in two versions – the A330-800 and A330-900 – share fuselage lengths with the A330-200 and A330-300. The NEO incorporates latest-generation Rolls-Royce Trent 7000 engines, improved high-span wing with new Sharklet wingtip devices inspired by the A350 XWB.

The A330neo will expand operators’ market opportunities with a range capability increase of up to 400 nautical miles, and offer better economics than its competitors. The A330-800 typically seating 257 in three classes will carry passengers over 7,500nm and The A330-900 typically seating 287 in three classes will carry passengers over 6,650nm.

As well as operational commonality with other members of the Airbus Family, the A330-800 and the A330-900 are 99 per cent common and inherit from the market-leading reliability and reduced airframe maintenance costs, thanks to further evolution in the already efficient A330 scheduled maintenance programme. Also helping to achieve the five percent reduction in maintenance costs is the new Engine bleed air system (EBAS) which replaces pneumatic controls with full electrical regulation – a technology which is already proven on the A380 and also features on the A350 XWB and A320neo.

A330 Family cabin
Airbus continuously develops the A330 cabin to be modern, proven and comfortable while offering the highest possible revenue efficiency. The A330 has the quietest cabin in its category (3 dB quieter than 787, i.e. half the sound energy).
Through innovative uses of cabin space, the A330 allows a wide variety of seating configurations from high comfort 4-abreast premium classes to more efficient efficient 8 and 9-abreast Economy class seating with seats up to 18inch wide seat.
The spacious and comfortable cabin is optimised with the latest generation of sidewall panels which increase passenger space and thermal comfort while allowing a smoother installation and reduced maintenance costs.

Space and comfort perception is also reinforced by lighting. In the frame of the A330 cabin, a new full LED mood lighting inherited from the A350 XWB allows unlimited customization of colour (16.7 million possible colour combinations) and intensity, scenarios reflecting the airline branding.

The A330 family also offers the alternative to relocate the flight crew rest to the Lower Deck Mobile Crew Rest to free-up space on the main deck for additional passengers. New padding and mattress materials, enhanced lighting and an improved heating system also make for a more comfortable crew rest area which can accommodate up to two separate bunks for pilots and six bunks for cabin crew.

The A330 passengers will appreciate fourth-generation IFE, with HD viewing resolution. On-board wireless services (access to an intranet portal including streaming capability), and High Bandwidth Connectivity services will also benefit passengers, with an unprecedented freedom of choice for airlines among the latest technologies available.

The A330neo new cabin is the launch platform for Airspace by Airbus, developed with passengers at heart and airlines in mind it fully encompasses the four pillars of the Airspace brand: Comfort, Ambience, Services and Design and will ensure the A330 continues to be a benchmark in passenger experience and airline value.

Some of the Airspace cabin characteristics are:

- The A330neo entrance area will provide a unique welcome experience with new customizable ceiling panels combined with the full colour led lighting.

- New larger bin design with more overhead storage, which affords passengers more carry-on stowage. For the A330neo, Airbus’ cabin designers have increased the capacity by about 66 percent, allowing five cases to be placed in each four-frame bin.

- Smart, contemporary lavatory design – bringing more passenger space, more efficiency, including a range of new modular Space-Flex galley/lavatory options which maximise trolley capacity while offering various wheelchair accessible lavatory configurations to suit individual airline requirements and passenger’s comfort.
OTHER VARIANTS

The A330-200 Freighter (A330-200F)
The development of the A330-200F represents a significant step in building the A330 Family. Based on the proven A330 passenger platform, this new build cargo version has an optimized design to match the needs of cargo operations. The A330-200F is tailored for long-haul routes and regional operations to feed cargo into hub airports. The A330-200F can carry up to 70 tonnes of payload up to 4,000 nm. The aircraft has flown to all continents with a high reliability rate since its 2010 service entry, with some operators using the freighter up to 400 hours per month.

The ACJ330 and ACJ330neo,
For the highly-demanding VIP and private markets, this Airbus Corporate Jet offers top-end luxury, comfort and range.

The A330 Multi Role Tanker Transport (MRTT)
This variant is the most modern aircraft for military services’ in-flight refuelling and airlift requirements.

Incremental development of the A330 Family design and systems
Airbus spends some 150 million euros each year on enhancements and incremental improvements for the A330 Family. As technology improves, so does the A330 Family. Regular introduction of airframe upgrades, technological fertilization from other Airbus products developments, as well as the use of more recent methods and tools have continuously improved the A330 operational characteristics, maturing this aircraft to operate efficiently on all kinds of routes from short to long haul, from 30 minutes up to 15 hour flights.

Incremental development in the A330 design has allowed flexibility through payload/range variants.
The payload and range capability improvement is primarily achieved through design weights variants: maximum take-off weight (MTOW) increase (more range at a given payload / more payload at a given rang), MTOW reduction (optimisation for high traffic regional routes), Maximum Zero Fuel Weight (MZFW) increase (more maximum payload) and Maximum Landing Weight.
The engine thrust has been increased in conjunction to the MTOW increases, ranging from 64,000 lbs up to 72,000 lbs take-off thrust, thus preserving the airfield capability of the A330. Upgrades introduced to the A330 airframe have further improved its flexibility and efficiency:

- 1994  A330-300 EIS 212t
- 1998  A330-200 EIS 230t
- 1999  A330-300 230t
Incremental development in the A330 systems
During the last ten years, the A330 Family programme has continuously and increasingly invested in development, improving A330 systems offer.

Using the latest techniques, the design office has delivered safety enhancements, fuel and cost savings, reliability improvements, or new capabilities to improve aircraft and cockpit operations and passengers travel experience.

Amongst many other examples of systems, it should be mentioned:

• The Runway Overrun Protection System (ROPS*) is an Airbus-developed response to the growing occurrence of runway overrun incidents, which remain the main cause of aircraft accidents. ROPS provides significant safety enhancement allowing the reduction of insurance fees.

• ETOPS 240 (Extended-range Twin-engine Operational Performance Standards), an operational system providing key operational improvement. In 2009 EASA approved A330 aircraft for ETOPS “beyond 180 minutes”, allowing diversion distance up to a maximum of 1700 nm, i.e. the equivalent to an ETOPS diversion time slightly higher than 240 minutes. On some “golden routes”, this can mean reduced distances of up to 500 nm, which is the equivalent of 1 hour of flight, or 10 percent of fuel.

• The Dual Head-Up Displays (HUD) This visual guidance system has been shown to significantly increase pilots’ situational awareness, facilitates instrument and visual Meteorological Conditions transition, enhances stability of manual approaches and allows minima reductions during take-off and landing.

The A330 has evolved in such a way that it remains the right aircraft, right now and for the future.

***