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# **Introduction**

On May 29, 2019, Airbus celebrated its 50th birthday. In five decades since its founding, Airbus has gone from a fledgling upstart to one of the industry’s titans.

Today, Airbus is a leader in designing, manufacturing and delivering aerospace products, services and solutions to a customer base that spans the globe – with operations for commercial aircraft, helicopters, defence and space.

Airbus S.A.S. (Société par Actions Simplifiée — simplified joint-stock company) is an aircraft manufacturing subsidiary of EADS (EAD is a centralized reference database of aeronautical information for airspace users), a European aerospace company. Based in Toulouse, France, and with significant activity across Europe, the company produces around half of the world's jet airliners.

Airbus employs around 57,000 people at sixteen sites in four European Union countries: Germany, France, the United Kingdom, and Spain. Final assembly production is at Toulouse (France), Hamburg (Germany), Seville (Spain), and Tianjin (China). Airbus has subsidiaries in the United States, Japan and China. The consortium has more than 1,500 suppliers and holds cooperative agreements with numerous companies in many countries.

The company we know today as Airbus can trace its history back to an agreement signed in July 1967 by the French, German, and British governments to strengthen their cooperation in the field of aviation technology.

# **Early days**

During the 1960s, companies like France’s Sud Aviation and the British Aircraft Corporation planned new aircraft with the aim of providing for the growth in demand for air travel. They decided that if Europe combined the considerable talents and expertise which existed in individual companies and nations and put them into one aircraft to compete directly against the Americans – who held more than 80 per cent of the world market - there could be any hope of success.

Within days of the July 1967 meeting, a brilliant French engineer, Roger Béteille, was appointed technical director of the A300 programme. Henri Ziegler, president of Sud Aviation, was later named general manager of what would become Airbus Industrie and a German politician, Franz-Josef Strauss, was made chairman of the supervisory board. These men were to become known as the “fathers” of Airbus, along with Felix Kracht, a young German engineer, who was about to join the German Airbus group as head of sales and marketing. Kracht, who later described himself more as the “midwife” of the Airbus manufacturing system than as a father of the company, took on the role of production director: overseeing and coordinating the job of building the A300.

On 26 September 1967, the German, French and British governments signed a Memorandum of Understanding in London which allowed continued development studies. This also confirmed Sud Aviation as the "lead company", that France and the UK would each have a 37.5% workshare with Germany taking 25%, and that Rolls-Royce would manufacture the engines.

Shortly after the agreement, Béteille developed a division of labour which would be the basis of Airbus' production for years to come: France would manufacture the cockpit, flight control and the lower centre section of the fuselage; Hawker Siddeley, whose Trident technology had impressed him, was to manufacture the wings; Germany should make the forward and rear fuselage sections, as well as the upper centre section; The Dutch would make the flaps and spoilers; finally Spain (yet to become a full partner) would make the horizontal tailplane.

**Formation of Airbus**

The name "Airbus" was taken from a non-proprietary term used by the airline industry in the 1960s to refer to a commercial aircraft of a certain size and range, for this term was acceptable to the French linguistically. The French company Aerospatiale and the German company Deutsche Airbus each took a 36.5% share of production work, Hawker Siddeley 20% (it was a group of British manufacturing companies engaged in aircraft production) and Fokker-VFW of the Netherlands 7%. Each company would deliver its sections as fully equipped, ready-to-fly items. In January 1979 British Aerospace, which had absorbed Hawker Siddeley in 1977, acquired a 20% share of Airbus Industrie.

# **Development of the Airbus A300**

The A300 was developed to create short- to medium-range, high-capacity aircraft. It was the first wide-body jetliner to be equipped with only two engines for better operating economics. The A300 prototype made its first flight in 1972, and the aircraft entered commercial service with Air France in 1974. Despite its excellent performance, the A300 initially sold poorly because of airlines’ concerns about its new and unproven manufacturer. A breakthrough occurred in 1977 when the U.S. carrier Eastern Air Lines entered into a leasing arrangement for the aircraft.

# **А310**

A second boost for Airbus came in 1978, when it launched a program to develop a smaller-capacity, medium-range plane. In July of 1978, Airbus Industrie announced the development of a new jetliner called the A310. This smaller and more efficient version of the A300 incorporated a unique fuel-saving feature. When the A310 is in flight, fuel is pumped from an aft tank into the main wing tanks to help maintain the airliner's center of gravity. On other aircraft a device called a "trim control" automatically adjusts the tail elevators in order to maintain level flight. However, excessive reliance on the trim control causes aerodynamic drag which wastes fuel. The A310s fuel pumping scheme has since been duplicated by other aircraft manufacturers and has become a regular feature of most modern aircraft designs. In addition, the A310s wings were redesigned to make it more efficient at distances of less than 1500 miles. This became a major selling point for Airbus, since three-quarters of all airline routes are distances of less than 1500 miles.

# **A320**

The company's biggest coup came with the 1984 introduction of the A320, a twin-engine, medium-range craft that seated 150. The new model featured "fly-by-wire" technology, an electronic signaling and control system that had been previously used on the Anglo-French Concorde supersonic airliner.

The weight loss helped make the A320 30 percent less expensive to operate than its competition. Although the absence of direct mechanical controls (the control laws are not fully active until after the aircraft gets airborne) made many potential customers leery of the A320, Airbus claimed that it offered increased safety and improved maneuverability. The plane and its revolutionary guidance system soon made aviation history.

# **Transition to Airbus S.A.S**

The retention of production and engineering assets by the partner companies in effect made Airbus Industrie a marketing company. But eventually the conflicts of interest that the four partner companies faced led to inefficiencies. The companies collaborated on development of the Airbus range, but they also cared the financial details of their own production activities and aimed to maximise the prices of their sub-assemblies. It was becoming clear that Airbus was no longer a temporary collaboration to produce a single plane according to its original mission statement, it had become a long term brand for the development of further aircraft. By the late 1980s, a work had begun on a pair of new medium-sized aircraft, the biggest to be produced at this point under the Airbus name, the Airbus A330 and the Airbus A340. Then in 2000 three of the four partner companies (DaimlerChrysler Aerospace, successor to Deutsche Airbus; Aérospatiale-Matra, successor to Sud-Aviation; and CASA) merged to form EADS, simplifying the process. EADS now owned Airbus France, Airbus Deutschland and Airbus España, and thus 80% of Airbus Industrie. BAE Systems (BAE Systems plc is a British multinational aerospace company) and EADS transferred their production assets to the new company, Airbus SAS, in return for shareholdings in that company.

# **Development of the A380 and A350**

In 2007, Airbus addressed another niche in the long-distance market with the “ultralong-range” A380, the world’s largest airliner. Built with two passenger decks extending the full length of the aircraft, it offered a standard seating capacity of 555 and a maximum capacity of 853 in an all-economy class configuration.

On 1 December 2005, the A380 achieved its maximum design speed of Mach 0.96. On 10 January 2006, the A380 made its first transatlantic flight to Medellín in Colombia. The first aircraft delivered was to Singapore Airlines on 15 October 2007 and entered service on 25 October 2007 with an inaugural flight between Singapore and Sydney. Emirates was the second airline to take delivery of the A380 on 28 July 2008 and started flights between Dubai and New York on 1 August 2008.

In February 2019, Airbus announced it will end the A380 production by 2021, after its main customer, Emirates, agreed to drop an order for 39 of the aircraft. Airbus will build 17 more A380s before closing the production line – 14 for Emirates and three for All Nippon Airways – taking the total number of expected deliveries of the aircraft type to 251. The $445 million price tag of each aircraft was not sufficient to cover the production cost, so with Airbus losing money on each A380, and orders evaporating, it makes economic sense to shut down production.

In 2012, the final assembly began of the first A350, an aircraft intended to fly long-distance routes with great economy and minimal damage to the environment. The twin-engine A350 featured new fuel-efficient Rolls-Royce engines and a lightweight airframe made largely of titanium, aluminum, and carbon-fibre-reinforced plastic.

# **Conclusion**

Thus, Airbus Industrie which began with an agreement between three countries, became the world’s leading manufacturer of commercial jetliners and military airlifters, having evolved during the past 40 years on the vision, innovation and passion of its employees.