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Airbus A318

Outlook

- No further production is forecast
- Any future A318 production would likely be comprised exclusively of the ACJ318 corporate jet model
- The A318 has so far not been included in Airbus' NEO narrowbody re-engining program

Orientation

Description. Twin-turbofan-powered narrowbody airliner and corporate jetliner.

Sponsor. Airbus

Status. Available for sale.

Total Produced. Through 2013, Airbus produced 79 A318s.

Application. Scheduled and non-scheduled regional passenger transportation; corporate/executive transportation.

Price Range. A318, $71.9 million in 2014 U.S. dollars.

A318

Airbus A318

Source: Airbus

Contractors

Prime

Airbus Deutschland GmbH	http://www.airbus.com, Kreetslag 10, PO Box 950109, Hamburg, 21129 Germany, Tel: + 49 40 743 70, Fax: + 49 40 7434422, Prime

Subcontractor

CFM International Inc	http://www.cfmaeroengines.com, 111 Merchant St, PO Box 15514, Mail Drop Y11, Cincinnati, OH 45215 United States, Tel: + 1 (513) 552-3272, Fax: + 1 (513) 552-3329, Email: geae.csc@ae.ge.com (CFM56-5B Turbofan Engine)
Messier-Bugatti-Dowty	http://www.safranmbd.com, Cheltenham Rd E, Gloucester, GL2 9QH United Kingdom, Tel: + 44 1452 711 022, Fax: + 44 452 711 800 (Landing Gear)
Messier-Bugatti-Dowty	http://www.safranmbd.com, Inovel Parc Sud - BP 40, Velizy-Villacoublay, 78140 France, Tel: + 33 1 4629 8100, Fax: + 33 1 4629 8700 (Wheels & Brakes)
Pratt & Whitney	http://www.pratt-whitney.com, 400 Main St, East Hartford, CT 06108 United States, Tel: + 1 (860) 565-4321, Email: info@pw.utc.com (PW6000 Turbofan Engine)

Comprehensive information on Contractors can be found in Forecast International's "International Contractors" series. For a detailed description, go to www.forecastinternational.com (see Products & Services; Companies, Contractors, Force Structures & Budgets) or call + 1 (203) 426-0800.

Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 22 Commerce Road, Newtown, CT 06470, USA; rich.pettibone@forecast1.com

Technical Data

(A318)

Design Features. Cantilever low-swept-wing monoplane equipped with wing-mounted turbofan engines and fly-by-wire flight controls. A derivative of the A319, the A318 is 4.5 frames shorter than the earlier transport. The laminar-flow wing has been slightly modified, notably with respect to camber. The baggage doors have been reduced in size; each measures 1.28 meters x 1.24 meters (50.5 in x 48.75 in).

	Metric	U.S.
Dimensions		
Length overall	31.44 m	103.17 ft
Height	12.56 m	41.19 ft
Wingspan	34.10 m	111.89 ft
Weight		
Maximum takeoff weight		
Standard	59,000 kg	130,071 lb
Optional	68,000 kg	149,912 lb
Maximum landing weight		
Standard	56,000 kg	123,457 lb
Optional	57,500 kg	126,764 lb
Maximum zero fuel weight		
Standard	53,000 kg	116,843 lb
Optional	54,500 kg	120,150 lb
Performance		
Mmo	Mach 0.82	Mach 0.82
Range	5,750 km	3,100 nm

Propulsion

A318	(2)	Pratt & Whitney PW6122 turbofan engines rated 98.3 kN (22,100 lbst) each; or
	(2)	Pratt & Whitney PW6124A turbofan engines rated 105.9 kN (23,800 lbst) each; or
	(2)	CFM International CFM56-5B turbofan engines rated 96.1-103.6 kN (21,600-23,300 lbst) each.

Seating

The A318 can accommodate 107 passengers in a two-class configuration (eight in first class and 99 in economy) with 38-inch seat pitch in first class and 32-inch pitch in economy; or 117 passengers in a single-class arrangement with 32-inch seat pitch. Maximum capacity is 132 passengers.

Variants/Upgrades

The baseline A318 model has a maximum takeoff weight of 59,000 kilograms (130,071 lb). Airbus has also marketed the A318 with various optional maximum takeoff weights.

ACJ318. In November 2005, Airbus introduced the A318 Elite, a new member of the Airbus Corporate Jetliner (ACJ) family. In May 2011, this aircraft was renamed the ACJ318.

The ACJ318 is based on the A318 regional airliner. Airbus has positioned the ACJ318 as an entry-level product in the ACJ family, which also includes the ACJ319, the ACJ320, and the ACJ321.

Airbus markets the ACJ318 in partnership with Lufthansa Technik. Customers have a choice of two cabin layouts seating up to 14 and 18 passengers, respectively, with seats and settees clustered in several lounge areas throughout the cabin.

The initial ACJ318/A318 Elite made its first flight in October 2006.

ACJ318 Enhanced. In October 2012, Airbus began marketing an improved version of the ACJ318, called the ACJ318 Enhanced, that includes several new standard features as well as a variety of new options.

The new standard features include domed ceilings and window shades throughout the aircraft cabin, light-emitting diode (LED) illumination, and new linings that allow better integration of overhead lights and air supply outlets. Others include high-definition in-flight entertainment with a Blu-ray player, new displays and HDMI interfaces for external equipment, and a new passenger information system. Customers also have a wider choice of seats.

New optional features include Sharklets for the aircraft wingtips, a shower, iPod and iPad interfaces, a wireless local area network (LAN), greater soundproofing, a humidifier, mood lighting, and the ability to transform the aft lounge into a cinema.

Program Review

Background. Airbus said in April 1998 that it was studying the market potential of a 100-passenger derivative of the A319, called the A319M5. At the same time, the company was also involved in a joint program to develop a family of 95-125 passenger aircraft, called the AE31X series, with Alenia, Aviation Industries of China (AVIC), and Singapore Technologies Aerospace. However, the AE31X program was terminated in the summer of 1998. The program was considered too costly and not commercially viable. Airbus continued working on the A319M5, which was later renamed the A318.

At the September 1998 Farnborough Air Show, Airbus announced plans to develop the A318. The company's supervisory board had granted authorization for the A318 to be presented commercially to airlines; however, Airbus stopped short of a formal launch at that time.

Airbus formally launched the A318 in April 1999, after receiving 109 orders and commitments for the aircraft. The company said that the launch base for the program exceeded the commercial requirements established by Airbus' supervisory board.

Powerplants. Airbus originally selected the new Pratt & Whitney PW6000 turbofan engine to (at least initially) power the A318. This engine retained some of the components of Pratt's earlier PW2000 and PW4000 powerplants.

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Airbus said in early 1999 that the PW6000's design included fewer compressor stages than the competing engines on some 100-passenger transports, and ran approximately 130°F cooler in the single-stage high-pressure turbine. The company added that emissions of NOx, UHC, and CO were below then-current maxima. As for noise, a margin of nearly 25 EPNdB versus the ICAO Chapter III standard was targeted.

In August 1999, Air France selected the CFM International CFM56-5B turbofan engine to power the 15 A318s that it planned to order. This decision effectively launched the CFM56-5B as an optional powerplant for the new Airbus aircraft.

Service entry of the PW6000-powered A318 had been targeted for late 2002. However, this was postponed. The PW6000 program ran into some difficulty in 2001 when it was discovered that the engine burned approximately 6 percent more fuel than originally estimated. To resolve this problem, Pratt reconfigured the PW6000 with a six-stage high-pressure compressor from MTU Aero Engines that replaced the original five-stage design. The newly redesigned Pratt engine became known as the PW6000A (or PW6124A). Production PW6000A engines were assembled in Hanover, Germany, by MTU.

Design Change. In early 1999, Airbus modified the design of the A318 to add a fin tip extension of approximately 80 centimeters (31.5 in) to the top of the vertical stabilizer. This was intended to provide the A318 with greater stability and control at low speeds, enhancing field length capability.

The fin tip extension replaced a small dorsal fin design that was originally to have bridged the angle between the top of the fuselage and the base of the vertical stabilizer. The dorsal fin proved to be less effective than the fin tip extension.

Program Schedule. The initial flight of the A318 (with PW6000 engines) occurred in January 2002. A second prototype, also equipped with PW6000s, took to the air in June 2002. The initial aircraft was later re-engined with CFM56s, and first flew with these engines in August 2002. Subsequently, it was again re-engined, this time with PW6124As. It flew for the first time with PW6124A engines in December 2004. Eventually, this aircraft was configured as an A318 Elite model, and was delivered to RAK Airways in 2007.

Meanwhile, the second A318 prototype was re-engined with CFM56s, and was delivered to Frontier Airlines in 2004.

The European Joint Aviation Authorities (JAA) awarded certification to the CFM56-powered A318 in May 2003. This was followed in June 2003 by certification from the U.S. Federal Aviation Administration (FAA). Initial delivery of an A318 occurred in 2003, to Frontier.

In December 2005, the PW6000-powered version of the A318 was granted type certification by the European Aviation Safety Agency (EASA). The type certificate was the first issued by the new European agency.

The initial production A318 powered by the PW6000 made its first flight in early 2007. This aircraft was delivered to LAN Airlines in May 2007.

Final assembly of the A318 takes place at the Airbus production plant in Hamburg, Germany, where the A319 and A321 are also assembled. The A318 is considered a member of the A320 family of single-aisle aircraft, which also includes the A319, A320, and A321.

Order Book. As of the end of February 2014, no firm order backlog existed for the A318. Total orders over the life of the program stood at 79 aircraft.

Customer	Orders	Deliveries	Backlog	Aircraft	Engine
Air France	18	18	0	A318	CFM56
Al Jaber Aviation	2	2	0	ACJ318	CFM56
BAA Jet Management	1	1	0	ACJ318	CFM56
British Airways	2	2	0	A318	CFM56
Comlux Aviation	4	4	0	ACJ318	CFM56
Frontier Airlines	9	9	0	A318	CFM56
GCL-Poly Energy Holdings	1	1	0	ACJ318	CFM56
GECAS	12	12	0	A318	CFM56
Global Jet Concept	1	1	0	ACJ318	CFM56
JetAlliance	3	3	0	ACJ318	CFM56

Customer	Orders	Deliveries	Backlog	Aircraft	Engine
Kutus Ltd	1	1	0	ACJ318	CFM56
LATAM Airlines Group	15	15	0	A318	PW6000
National Air Services	1	1	0	ACJ318	CFM56
RAK Airways	1	1	0	ACJ318	PW6000
Saudi Red Crescent Authority	1	1	0	ACJ318	CFM56
SonAir	2	2	0	ACJ318	CFM56
Tarom	4	4	0	A318	CFM56
Universal Entertainment Corp	1	1	0	ACJ318	CFM56
Total	**79**	**79**	**0**		

PW6000 On Standby. The A318 is the sole application for the PW6000 engine. The PW6000 assembly line at MTU in Germany is being kept in standby mode, and MTU intends to keep it that way as long as Airbus continues to market the A318. Thus, the PW6000 will remain a possible engine choice for future A318 customers.

Funding

The development cost of the A318 was estimated at no more than $370 million.

Timetable

Month	Year	Major Development
Sep	1998	Airbus announces authorization to market the A318
Apr	1999	Program launched
Aug	1999	CFM56 selected as optional powerplant
Jan	2002	Initial flight of first A318
Jun	2002	Initial flight of second A318
Aug	2002	Initial flight of first A318 equipped with CFM56 engines
May	2003	JAA certification of CFM56-powered A318
Jun	2003	FAA certification of CFM56-powered A318
Jul	2003	Initial delivery
Dec	2005	EASA certification of PW6000-powered A318
	2014	A318 and ACJ318 remain available for sale

Worldwide Distribution/Inventories

(as of March 2014)

Operator	Designation	Quantity
Air France	A318	18
Al Jaber Aviation	ACJ318	1
Alpha Star Aviation	ACJ318	1
Asia United Business Aviation	ACJ318	2
Avcon Jet	ACJ318	1

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Operator	Designation	Quantity
Avianca	A318	10
Avianca Brazil	A318	15
Beijing Airlines	ACJ318	1
British Airways	A318	2
China Eastern Airlines Executive Air	ACJ318	1
Eva Air	ACJ318	1
Frontier Airlines	A318	1
Gama Aviation	ACJ318	1
Global Jet Luxembourg	ACJ318	1
Hong Kong Jet	ACJ318	1
Jet Aviation	ACJ318	1
Jordan Government	ACJ318	1
Kutus Ltd	ACJ318	1
Mid East Jet	ACJ318	1
National Air Services	ACJ318	2
Tarom	A318	4
Tyrolean Jet Service	ACJ318	1
Universal Entertainment Corp	ACJ318	1

Market Intelligence Service Subscribers: The Airline Inventories, Orders and Options appendix provides instructions on how to access an online database of up-to-date listings. Use this database to obtain detailed, current information.

Forecast Rationale

Airbus delivered the 79th A318 aircraft, an ACJ318 corporate jetliner, in February 2013 to the Japanese company Universal Entertainment Corp. The delivery left the A318 order backlog empty, as no unfilled orders for the A318 or the ACJ318 remained on the books. Over the course of the following 13 months, no further orders were secured for the aircraft. As a result, Airbus continued to have no order backlog for the A318/ACJ318 as of mid-March 2014.

This absence of a backlog has left the future of the A318 and its ACJ318 variant uncertain. Airbus continues to market the A318, particularly the new, improved ACJ318 Enhanced jetliner that was launched in 2012. The Enhanced model is slated to become the standard ACJ318 version.

Indeed, any future A318 orders will almost certainly be for ACJ318 corporate jet models. The ACJ318 is positioned by Airbus as a larger-capacity alternative to such purpose-built business jets as the Bombardier Global series, the Dassault Falcon 7X, and the Gulfstream G550 and G650. Meanwhile, sales of the airliner version of the A318 have evaporated in recent years, and none have been built since 2009.

Airbus indicated in early 2013 that ACJ318 production would continue until at least the 2018-2019 timeframe. In the meantime, the company has so far opted not to include the A318/ACJ318 in its New Engine Option (NEO) re-engining program. Under the NEO effort, Airbus is developing new, re-engined versions of the A319, A320, and A321. The firm has not completely ruled out development of a NEO version of the A318. However, given the present lack of market demand for the A318, it seems likely that the aircraft will continue to be excluded from the NEO program.

Airbus may yet garner some additional orders for the ACJ318. However, with no order backlog at this writing, we have opted not to issue a forecast for additional ACJ318 production.

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