

FlightGlobal

Pioneering Aviation Insight

FLEET WATCH 2018



A REVIEW OF COMMERCIAL AIRCRAFT ORDERS AND DELIVERIES FOR 2017

EXECUTIVE SUMMARY

Just over \$110 billion of airliners were delivered in 2017, Flight Fleets Analyzer data shows based on Ascend's 2017 Full-Life Base Values. In total, more than 1,700 aircraft were delivered during the year.

Boeing is still the largest commercial manufacturer in delivery terms with 740 airliners shipped in 2017 – excluding corporate and military versions. Airbus delivered 713 aircraft. That marked an increase of almost 30 aircraft on 2016 for the European manufacturer and 14 for Boeing.

Airbus shows an order backlog of 7,235 units, almost 1,500 more than Boeing. The total commercial aircraft backlog, including over 1,100 airliners from ATR, Bombardier and Embraer, totalled 15,257 units at the end of 2017.

The total net orders of more than 2,300 aircraft, including more than 300 from other manufacturers, was the highest annual total since 2014.

Middle East carrier Flydubai is the airline with the single largest order with a deal for 175 737 Max aircraft during the year, though private equity firm Indigo Partners in December sealed an order for 430 A320/A321neo aircraft spread across four carriers in which it has investments. Indian low-cost carrier IndiGo, which took its first turboprops in 2017 after signing for 50 ATR 72-600s, stands at the top of the order backlog listing at the end of 2017.

AIRCRAFT MANUFACTURER	2017				2016	
	DELIVERIES	VALUES (\$bn)	NET ORDERS	BACKLOG*	DELIVERIES	NET ORDERS
 BOEING	740	55.9	994	5,790	726	625
 AIRBUS	713	47.9	1,103	7,235	685	714
 EMBRAER	101	2.8	92	435	108	39
 ATR	78	1.6	113	267	77	36
BOMBARDIER	72	1.4	73	431	86	160
OTHER**	60	0.8	71	1,099	84	73
TOTAL	1,764	110.4	2,316	15,257	1,766	1,647

Source: Flight Fleets Analyzer

Notes: Data excludes corporate and military versions. Delivery values are in 2017 dollars, based on Ascend's 2017 Full-Life Base Values.

*at 31 December 2017

**figures for commercial aircraft with manufacturers including Antonov, CAIC, Comac, Irkut, Sukhoi and Viking Air

AIRCRAFT ORDERS

A total of just over 2,600 gross orders were placed for commercial aircraft in 2017, while nearly 290 cancellations were made, Flight Fleets Analyzer also shows. Close to half of all the 2017 orders were finalised in December, as long-standing Airbus sales chief John Leahy signed off with a bang.

A further 168 aircraft previously ordered were swapped to different models during the year.

The net total of 2,316 represents a 41% increase on the orders from 2016, and the highest total since 2014 when net figures reached the 3,300 mark.

Some of the major orders of the year included UAE low-cost carrier Flydubai, which signed for 175 737 Max aircraft. The deal, first announced at the 2017 Dubai air show, is the largest single-aisle jet order in Middle East history. The order, which is for 737 Max 8s, -9s, and -10s and includes options for an additional 50 jets, is valued at \$27 billion at current list prices.

Largest aircraft orders of 2017

Customer	Country	Aircraft family	Orders
Flydubai	UAE	737 Max	175
Wizz Air*	Hungary	A320neo family	146
Frontier Airlines*	USA	A320neo family	134
GECAS	USA	A320neo	100
Delta Air Lines	USA	A321neo	100
Volaris*	Mexico	A320neo family	80
Avolon	Ireland	737 Max 8	75
JetSmart*	Chile	A320neo family	70
China Aircraft Leasing	China	A320neo	52

Source: Flight Fleets Analyzer
* part of joint Indigo Partners order

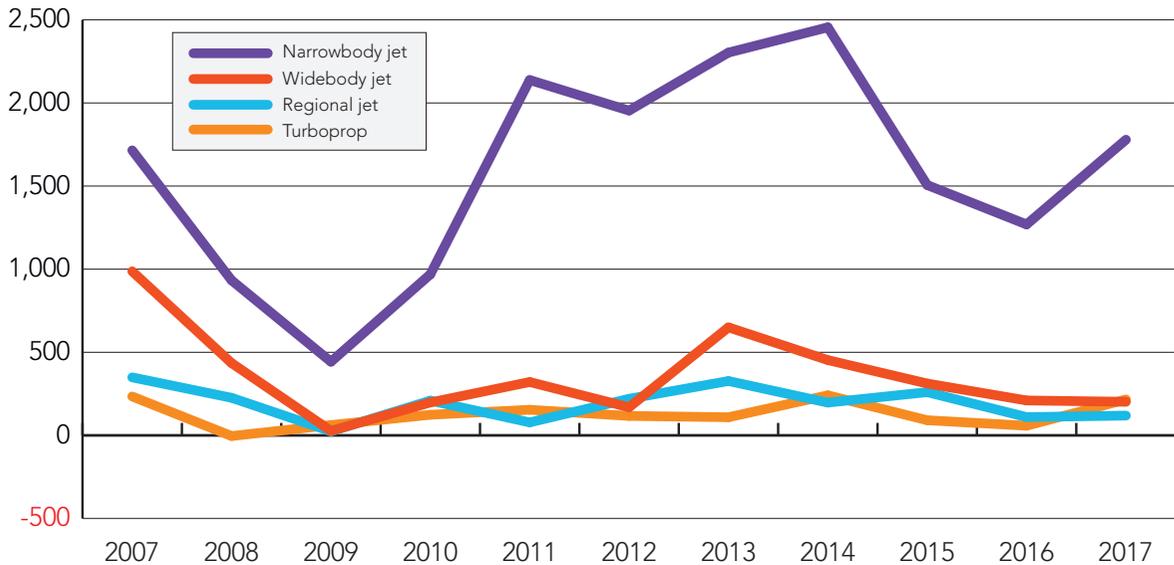
Indigo Partners' major order for 430 A320neo family aircraft covered four of its airline investments. Central European budget carrier Wizz Air is taking the largest share of these, 146 units comprising 74 A321neos and 72 A320neos. Under the agreement with Airbus, Wizz has a deadline of 30 June 2019 to select engines for the aircraft. Last year, the airline picked Pratt & Whitney PW1100G engines to power the 110 A321neos it had ordered in 2015.

Ultra-low-cost Denver-based Frontier Airlines will take 100 A320neos and 34 A321neos under the Indigo deal. Chile start-ups JetSmart (56 A320neos and 14 A321neos) and Mexico's Volaris (46 A320neos and 34 A321neos) will also take aircraft from Indigo's order.



Flydubai's order of 175 737 Max aircraft is the largest single-aisle jet order in Middle East history

Airliner net orders: 2007-2017



Source: Flight Fleets Analyzer

Leading customers by backlog

Customer	Country	Backlog
IndiGo	India	445
Lion Air	Indonesia	404
AirAsia	Malaysia	391
GECAS	USA	369
Delta Air Lines	USA	343
Avolon	Ireland	304
AerCap	Ireland	294
Wizz Air	Hungary	280
Southwest Airlines	USA	252
Flydubai	UAE	245

Note: data at 31 December 2017
 Source: Flight Fleets Analyzer

GECAS placed an order for 100 A320neos announced at the Paris air show, making it the largest firm order announced at Le Bourget. The US lessor also ordered ten A320ceos and four 737 Max aircraft during the year.

In December, Delta Air Lines announced a commitment to 200 Airbus A321neos for the next phase of its narrowbody fleet replacement programme. The deal included 100 firm aircraft and another 100 options with deliveries from 2020 to 2023. Delta has selected Pratt & Whitney PW1100G engines for the A321neos. Delta also ordered 45 A321ceos during the year.

In November, Avolon finalised an order for 75 737 Max aircraft comprising of 55 Max 8s and 20 Max 10s, as well as options for another 20 Max 8s. The agreement, first announced as a memorandum of understanding at the Paris air show earlier in 2017, is valued at \$11 billion at list prices.

China Aircraft Leasing placed a series of orders during the year, including 52 A320neos, 50 737 Max aircraft and 14 A320ceos.

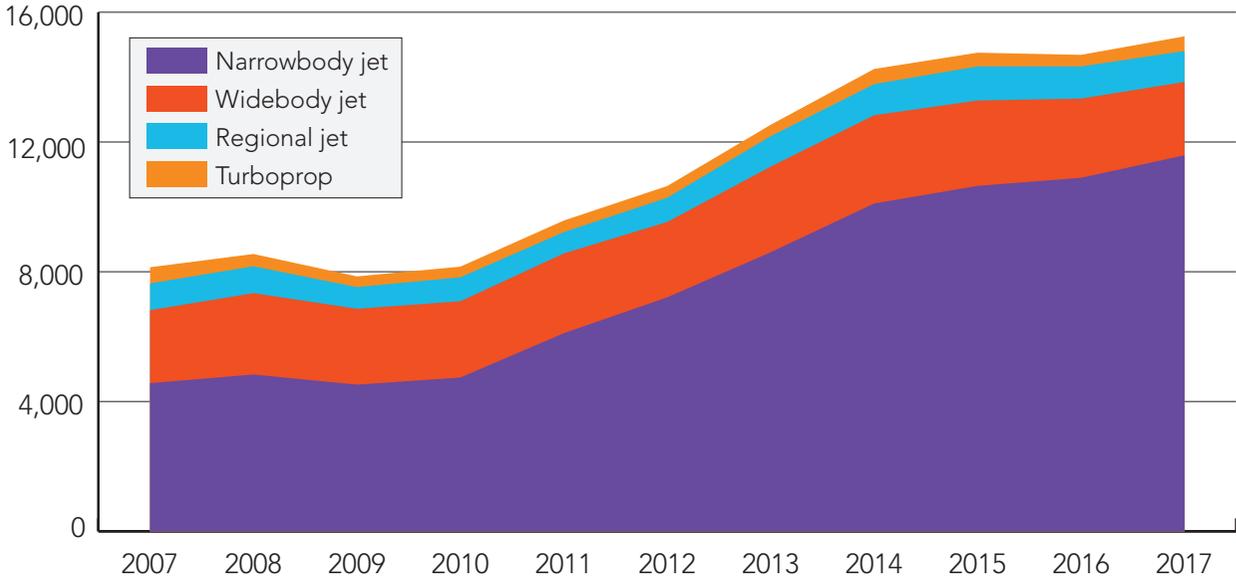
Backlog

The global commercial order backlog stood at 15,257 units on 31 December 2017. This figure represents an 87% increase on the backlog from the end of 2007. It is also a 4% increase on the same stage a year earlier.

Narrowbodies account for just over three-quarters of all commercial aircraft on order, while widebodies represent 15%. Regional jets and turboprops count as 6% and 3% respectively.

As of the end of 2017, Indian low-cost carrier IndiGo had the largest firm backlog with a total of 445 aircraft on order. It overtook Indonesian carrier Lion Air, which had the most on backlog at the end of 2016, and now stands as the carrier with the second highest backlog at just over 400 units.

Airline year-end order backlog: 2007-2017



Source: Flight Fleets Analyzer

AIRCRAFT DELIVERIES

Manufacturers delivered just over 1,760 commercial aircraft in 2017, almost the exact same as 2016.

Airbus annual production and output for its commercial aircraft has been steadily increasing over the years and topped the 700 annual delivery mark in 2017. Boeing, which reached that same landmark in 2014, also posted a record year in 2017 with 741 commercial aircraft deliveries excluding corporate and military versions.

OVER 1,760 DELIVERIES WERE MADE IN 2017

Embraer delivered 101 aircraft, while ATR and Bombardier shipped 78 and 72 aircraft respectively.

American Airlines took almost 60 aircraft during the year, the highest number of any airline group. US low-cost giant Southwest Airlines took 52 units, including its first 737 Max, while China Southern Airlines and Ryanair each received 50 aircraft.



Korean Air became the latest CSeries customer when it took its first of the type in December

With 740 aircraft, operators in Asia-Pacific accounted for 42% of the deliveries during the year. In 2016 Asian operators had represented 37% of deliveries. Carriers in North America and Europe both took 22% of annual deliveries, while operators in the Middle East, Latin America and Africa counted for shares of 8%, 4% and 2% respectively.

Figures show that narrowbodies continue to drive demand, as deliveries totalled 1,087 units during the year, an all-time high in that sector. Airbus and Boeing shipped over 500 aircraft each in that sector alone.

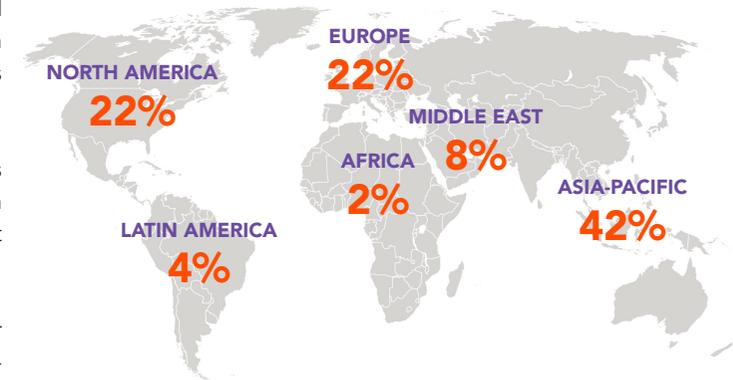
Boeing delivered its first 737 Max 8 to Malaysian carrier Malindo Air, which flew its first commercial flight with the re-engined type on 22 May on the Kuala Lumpur-Singapore route. By the end of the year, an additional 73 units of the type were delivered, including 25 units shipped in December alone.

The 558 Airbus A320 family aircraft shipped during the year included 181 neo aircraft, more than doubling the deliveries from 2016 for the re-engined variant which entered commercial service in January 2016 with Lufthansa.

Bombardier delivered its first CSeries aircraft back in 2016 to Swiss International Air Lines and shipped seven in total that year. During 2017 a further 17 CSeries aircraft were delivered, with customers including Air Baltic, Korean Air and Swiss.

There were 384 widebody shipments during the year, the lowest figures for that market group in the last three years. Deliveries in that sector reached a high in 2015 when they passed the 400-unit mark.

Deliveries by region



Top operators for 2017 deliveries

Operator	Country	Aircraft delivered
American Airlines	USA	57
Southwest Airlines	USA	52
China Southern Airlines	China	50
Ryanair	Ireland	50
China Eastern Airlines	China	48
Delta Air Lines	USA	47
Aeroflot Russian Airlines	Russia	42
Hainan Airlines	China	37
Air China	China	34
Saudia	Saudi Arabia	31

Source: Flight Fleets Analyzer

Bombardier

Although 2017 was not a record year for total widebody deliveries, Airbus outperformed previous levels in shipping just over 150 units. That includes 78 A350s, 62 A330s and 15 A380s. Boeing, which again led in twin-aisle shipments, delivered 229 widebodies. These included 134 787s, 74 777s, 11 747s and ten 767s.

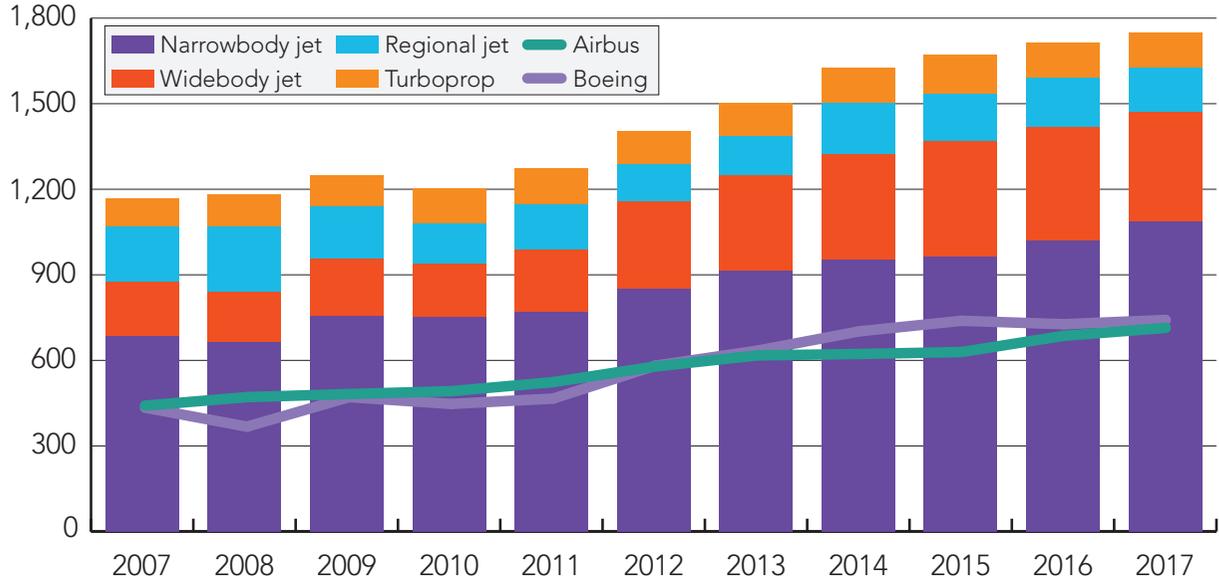
Regional jet and turboprop deliveries in 2017 came to 156 and 138 units respectively.

Embraer's 101 shipments included 79 E175s, 12 E190s and ten E195s. ATR matched their delivery performance of the previous year with 70 ATR 72s and eight ATR 42s, while Bombardier shipped 29 Q400s and 26 CRJs. Sukhoi delivered 24 of its Superjet to mainly Russian customers.



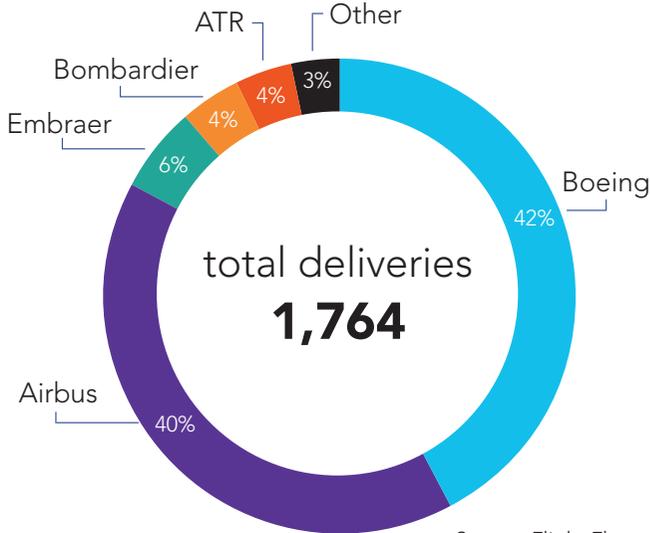
Asiana debuted its A350-900 on flights from Seoul Incheon to Osaka and Manila in May

Airliner deliveries: 2007-2017



Source: Flight Fleets Analyzer

Airliner 2017 deliveries by manufacturer



Source: Flight Fleets Analyzer

The logo for FlightGlobal features the word "FlightGlobal" in a bold, black, sans-serif font. A small, light blue square is positioned above the letter "i" in "Flight".

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