

# Aircraft comparison: 777-9 concedes more ground to A350-1000

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The Boeing 777-9 is set to become the largest in-production commercial aircraft. Its manufacturer says new technologies will deliver 10% lower fuel use and emissions and 10% lower operating costs than the competition.

However, further delays to Boeing's latest widebody are making it increasingly difficult to compete with the Airbus A350-1000, which is presumably the competition to which the US manufacturer is referring in its marketing literature.

The latest target for the 777-9 entry-into-service is 2025, some four years later than originally planned, having been delayed by a series of issues including increased regulatory requirements. The Airbus aircraft has been in service since 2018.

## Boeing 777-9 characteristics

Boeing launched the 777X family in late 2013. The X designation was originally applied to the individual models, but is now only used as a programme designation.

The manufacturer offers two variants of the new family. The 777-9 provides seating for more than 400 passengers in a two-class configuration and has a range of close to 7,300 nautical miles (13,500 km). Boeing appears to have changed the technical specifications of the 777-8, stretching the aircraft, which has in turn increased its passenger capacity to 395 and extended the range to 8,745 nautical miles, which is close to 1,500 nautical miles more than its larger stablemate.

## Airbus A350-1000 characteristics

The A350-1000 is the largest variant of the A350 family and Airbus's largest offering in the absence of the A380. The aircraft seats 350-410 passengers in a typical three-class layout with a range of 8,700 nautical miles (16,100 km). The aircraft was originally conceived with a nine-abreast economy configuration and was designed to replace the A340-600 and compete with the Boeing 777-300ER. Economy layouts with 10-abreast seating have subsequently been developed, which go some way to reducing the seating gap to the 777-9. This competitiveness is aided by an increase of the maximum certificated capacity by 40 seats.

Type certification was awarded by European authorities in November 2017. It entered commercial service with Qatar Airways in February 2018.

## Leading Characteristics (Source: manufacturers)

Model	A350-1000	777-9
Typical seating	350-410	426
Max seating	440	Not specified
Typical range (nm/km)	8,700/16,100	7,290/13,500
Engine	Trent XWB	GE9X
Thrust per engine (lbf)	97,000	105,000
Entry into service	2018	2025 (planned)

## Order history

The recent trend in orders does not suggest that Boeing faces an easy task in regaining market share from Airbus in the large widebody category. The A350 programme has outsold the 777 so far in 2023.

## 777X and A350 order history (Source: Airfinance Journal Fleet Tracker - includes subsequently cancelled orders)

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Aircraft	Up to 2020	2020	2021	2022	2023 (to 31 Oct)	Total
777-8	53	None	11	31	26	121
777-9	291	None	None	2	None	293
A350-1000	193	None	None	12	78	283
A350-900	932	21	5	8	42	1,008
<b>Total</b>	<b>1469</b>	<b>21</b>	<b>16</b>	<b>53</b>	<b>146</b>	<b>1,705</b>

## Recent market activity

Middle Eastern carriers are critical to the success of widebody aircraft and airlines such as Emirates Airline are key customers. Recent comments by Emirates Group’s president Tim Clark, as reported in Airfinance Journal, provide some insights into the prospects of the competing manufacturers. Clark says: “We’re looking at the A350-1000 quite seriously. There are still propulsion issues with Rolls so hopefully those will get resolved in the coming years.”

He added: “The 777-9 is hopefully coming at the end of 2025... we may need more -9s because of the retirement of the A380 in the future.” Emirates is reportedly looking to order 100-150 more aircraft to prepare for its fleet renewal needs between 2027-33.

The A350 programme was given a boost in September when Air France-KLM said it planned to order 50 of the type, together with purchase rights for an additional 40 units. The provisional deal includes both the A350-900 and the A350-1000 models, with aircraft to be delivered between 2026 and 2030. The announcement followed a contest between Airbus and Boeing.

The A350-1000 is the best performer in Airbus product line this year with 78 firm orders as of 30 October and with the confirmation of Eva Air for 18 more units, the model is on course to reach more than 100 orders this year.

Boeing will be hoping to be more successful in Turkey, where flag carrier Turkish Airlines could announce orders for approximately 350 aircraft, including 200 widebodies at the Dubai air show.

However, Boeing is competing with its largest 787 variant rather than the 777. Speaking at ISTAT Europe, Turkish Airlines senior vice-president fleet management and strategy, Murat Bas, said that the carrier has an ongoing tender for both the 787-10 and A350-1000 that needs more time before the carrier comes to a decision.

“We are still negotiating and need a couple of more months,” he added.

## Cost comparison

The manufacturers continue to claim operating cost advantages for their respective products. Boeing’s website advertises that the 777X “will deliver 10% lower fuel use and emissions and 10% lower operating costs than the competition”. It is not clear whether this relates to seat costs or trip costs, let alone which competition is being used as the benchmark. Airbus’s claims are equally difficult to interpret, with the marketing material suggesting: “The A350 delivers 25% lower operating costs to operators in the upper widebody market segment.”

Previously *Airfinance Journal* has estimated the relative costs based on its own model. The earlier analysis was done at a fuel price of \$1.75 per US gallon. At this comparatively low cost, the A350-100 and 777-8 were very closely matched with the 777-8 marginally more expensive. The 777-9’s capacity provided it with a significant advantage over the A350-1000 in cash cost per seat.

At a cost of \$3 per US gallon, which is more representative of October 2023 pricing, the advantage of the 777 models increases slightly. This of course assumes that, when the new 777 models eventually enter service, they will match the efficiency levels that Boeing is predicting,

**Relative cash cost at fuel price of \$3 per US gallon** (Assumptions: 4,000 nautical mile sector, Airfinance Journal cost model/interpretation of manufacturer data)

	A350-1000	777-8	777-9
Cash cost per trip	Base (100%)	102%	104%
Cash cost per seat	Base (100%)	101%	93%

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Based on their respective cash costs, *Airfinance Journal* analysis suggests that the 777-9 will provide significant efficiencies for airlines that can use its full capacity, whilst the A350-1000 is a less expensive, lower-risk option. However, further delays to the 777 programme are likely to cause operators to look more favourably on the largest Airbus model, provided it continues to perform in service.

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