Value and lease rate trends: 787-8

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Boeing announced the development of the 7E7 in January 2003 as a 200-250-seat aircraft that would fly between 7,000 and 8,000 nautical miles at speeds similar to Boeing's existing fastest twin-aisle commercial aircraft, the 777 and 747.

The manufacturer said its next aircraft would focus on efficiency rather than speed to fill an opportunity that Boeing had identified for a "middle of the market" aircraft, using technology that would allow it to fly up to 20% faster and burn 15-20% less fuel per seat.

The baseline 7E7 (that became the 787-8), at a length of 186ft (56.7m), was designed to carry about 200 passengers in three classes on routes as long as 6,600 nautical miles (12,200km).

With an increased length of 202ft (61.6m), the 7E7 stretch (later built as 787-9) was designed to accommodate 250 passengers in three-class seating. Its range capability was 8,000 nautical miles.

Boeing offered a short-range model, the 787-3, with dense seating (290-330 seats in a two-class configuration) and limited range (2,500–3,050 nm) but paused it before dropping the model to later offer a further stretched variant, the 787-10.

Both ANA and Japan Airlines were launch customers for the 787, in part due to the -3 model, which was seen as an ideal replacement aircraft to operate high-capacity domestic and intra-Asian services. JAL cancelled its 13 787-3 orders in mid-2009, ANA converted its 28 orders for the short range 787-3 to the 787-8 model in 2010.

The 7E7 programme was launched in April 2004 with an order for 50 aircraft from All Nippon Airways (ANA), targeting a 2008 introduction.

In 2005 Boeing changed the 7E7 name to the 787. "We used 7E7 to highlight the airplane's dramatic efficiency advantages," said Alan Mulally, president and chief executive officer of Boeing Commercial Airplanes at the time.

By the time the programme had recorded 186 orders with 14 airline customers.

On 8 July, 2007, a prototype 787 aircraft was rolled out without major operating systems. Subsequently the aircraft experienced multiple delays, until its maiden flight in December 2009.

Type certification was received in August 2011, and the first 787-8 was delivered in September 2011 to ANA and entered commercial service the following month.

Two new engine models, the Rolls-Royce Trent 1000 and the GEnx from General Electric, were identified as the power options for the aircraft.

Lessor fleet
Airfinance Global Aircraft Intelligence shows 391 units, and three units stored or in transition.

In 2023 Dublin-headquartered Eirtrade Aviation announced plans to disassemble two 10-year-old 787-8s previously operated by Norwegian as the aircraft type approached their first 12-year checks. A 2016-vintage BBJ was also parted out in 2024.

Leasing companies own or manage an estimated 124 aircraft or just under a third of the fleet, the data shows. Aercap, BOC Aviation, SMBC Aviation Capital, NBB/BBAM/Incline Aviation and Avolon manage 19, 17, 14, 13 and 10 units, respectively, according to the data.

The orderbook for the type is now relatively low.

Air Niugini placed orders for the type in June 2023, while Azerbaijan Airlines confirmed an order for eight 787-8s in April 2023 after signing a memorandum of understanding to purchase four 787s the prior year.

Air Astana placed orders for three 787-8s in 2012, accompanying an order for four 767-300ERs. The Kazakh carrier has not received any 787-8s and signed leases for the 787-9 variant to replace its 767s with Air Lease in late 2022 for delivery this year.

Royal Jordanian's 787-8 remaining orders seems to have been switched to the 787-9 variant.

Iraqi Airways took delivery of its first 787-8 in 2023 and added another unit the same year. But no further deliveries were recorded last year as part of the Baghdad-based carrier's 10-unit orderbook.

According to Airfinance Global data, there are 14 undisclosed orders for the type.

Deals
DP Aircraft I has recently entered into new 12-year lease agreements with LOT Polish Airlines, for two ex-Thai Airways 2014-vintage 787-8s. The new leases are due to commence in October and December 2026. Lease rental payments are structured over the 12-year term, with a fixed monthly rate for the first eight years, followed by a reduced fixed monthly rate for the final four years, providing rental payments of approximately $168m in aggregate over the full term.

In March Norse Atlantic Airways completed the redelivery of three 787-8s initially delivered in 2022 under lease agreements with Aercap. Prior to redelivery, the three 787-8 aircraft had approximately four years' lease length remaining.

In July 2023 McLarens Aviation sold three 787s, previously operated by Norwegian, to aircraft leasing investment platform Altitude Aircraft Leasing. The Trent 1000G-powered aircraft were delivered new to Norwegian in 2013, 2014 and 2015. Altavair Airfinance placed the units with Latin American operator Avianca on behalf of Altitude Aircraft Leasing last year.

The 787-8 market has also involved some early Qatar Airways deliveries.

Incline Aviation/BBAM secured financing for 10-year old example in the banking market last November for three units leased to Qatar Airways.

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Muzinich & Co acquired a 2016-vintage aircraft, with a lease attached to Qatar Airways, last year and secured a commercial loan, the data shows.

Aviator Capital acquired a pair of 2012-vintage units last December on lease to Qatar Airways.

Qatar Airways also added two 2015-vintage 787-8s earlier this year under lease agreements from Spectre Air, the data shows. Both units were acquired last autumn from Oman Air as part of a large mandate.

Last summer TUI Group secured a mortgage loan to finance a recent 2014-vintage 787-8 acquisition.

Atlas Aviation Capital acquired one 2016-vintage 787-8 aircraft with a lease attached to Air Europa from SMBC Aviation Capital late in 2024.

Phoenix Aviation Capital and AIP Capital acquired a 2014-vintage 787-8 aircraft on lease to LOT Polish Airlines from Castlelake in early May.

Last November China Southern Airlines was considering exiting the 787-8 type by selling 10 units powered by GEnx-1B70/P2 engines. According to Airfinance Global Aircraft Intelligence, eight 787-8s were delivered in 2013. The remaining two joined the fleet in 2014.

In April this year the Chinese carrier reaffirmed plans to sell its 787-8 aircraft fleet and listed the 10 aircraft for a reported CNY396.41 billion ($544.5 million).

According to the request for proposals, six aircraft have a CNY35.93 billion base price or $49.3 million an aircraft. Two units have a CNY38.28 base price, or $52.6 million an aircraft, while one aircraft is advertised at CNY36.85 billion base price and the final aircraft is offered at CNY36.36 billion base price. The Guangzhou-based carrier said the units would be sold “as-is, where-is” and would be delivered in 2025 and 2026.

China Southern's 787-8 fleet age averages 11.6 years. Airfinance Global Aircraft Intelligence shows market values between $38.5 million and $48.5 million according to Avitas.

In 2013, it approached financiers for financing its 787 deliveries. The Chinese carrier was seeking US Export-Import (Ex-Im) Bank guarantees on three 787-8 deliveries, while another three units were to be financed under commercial debt proposals or Japanese operating lease with call option proposals. Its final unit was under on a 10-year finance lease from CMB Leasing.

Appraiser views
Martin O’Hanrahan director - asset valuation Avitas

The 787’s entry into commercial service was delayed by about three years as a range of problems emerged during construction and testing, primarily due to supply-chain complexities and difficulties in integrating some of the newly designed systems and software. Due to its many innovations, not least because of the use of composites in the fuselage and wing structure, flight testing was also markedly more lengthy and rigorous. Thus, it was not until late 2011 that ANA brought the first 787-8 into commercial service. This aircraft was powered by Trent 1000 engines while Japan Airlines followed suit with the first 787-8 with GEnx power just a few months later. By this time, Boeing had booked more than 800 firm orders for the 787, making it one of the most successful widebody programmes ever.

Just as Boeing encountered some issues and delays during programme development and testing, the 787’s service history to date has experienced a range of unexpected issues. A number of early-build 787-8s were subject to unique build specifications which had a significant negative effect on proposed design weights and operational performance. These issues were addressed, but only through substantial reworks and these effectively established a 787 fleet subset, which came to be referred to colloquially as the “787 teenagers”.

While only 16 individual units were directly affected – only around half of which still remain in use – these aircraft attracted considerable stigma in the marketplace while also becoming subject to substantial negative adjustments to value.

In 2013, the 787 fleet was temporarily grounded following some incidents involving lithium-ion battery fires and, between 2021 and 2022, the assembly line was stopped while quality control issues were examined and again, in 2024, because of a strike. In each case, this resulted in delivery delays and operator disruption which damaged the Boeing brand.

Both the Trent 1000 and GEnx engines experienced a number of problems serious enough to impact reliability and cause further delays. In the case of the Trent 1000, premature wear on turbine blades led to shorter time-on-wing and premature maintenance events. Rolls-Royce introduced package ‘B’ and ‘C’ remedies to address these issues, while also offering the improved ‘TEN’ variant of the Trent, although this has had some service problems as well.

AVITAS
Aircraft Description & Summary of Aircraft Values as of 2nd Quarter 2025
in US$ Millions

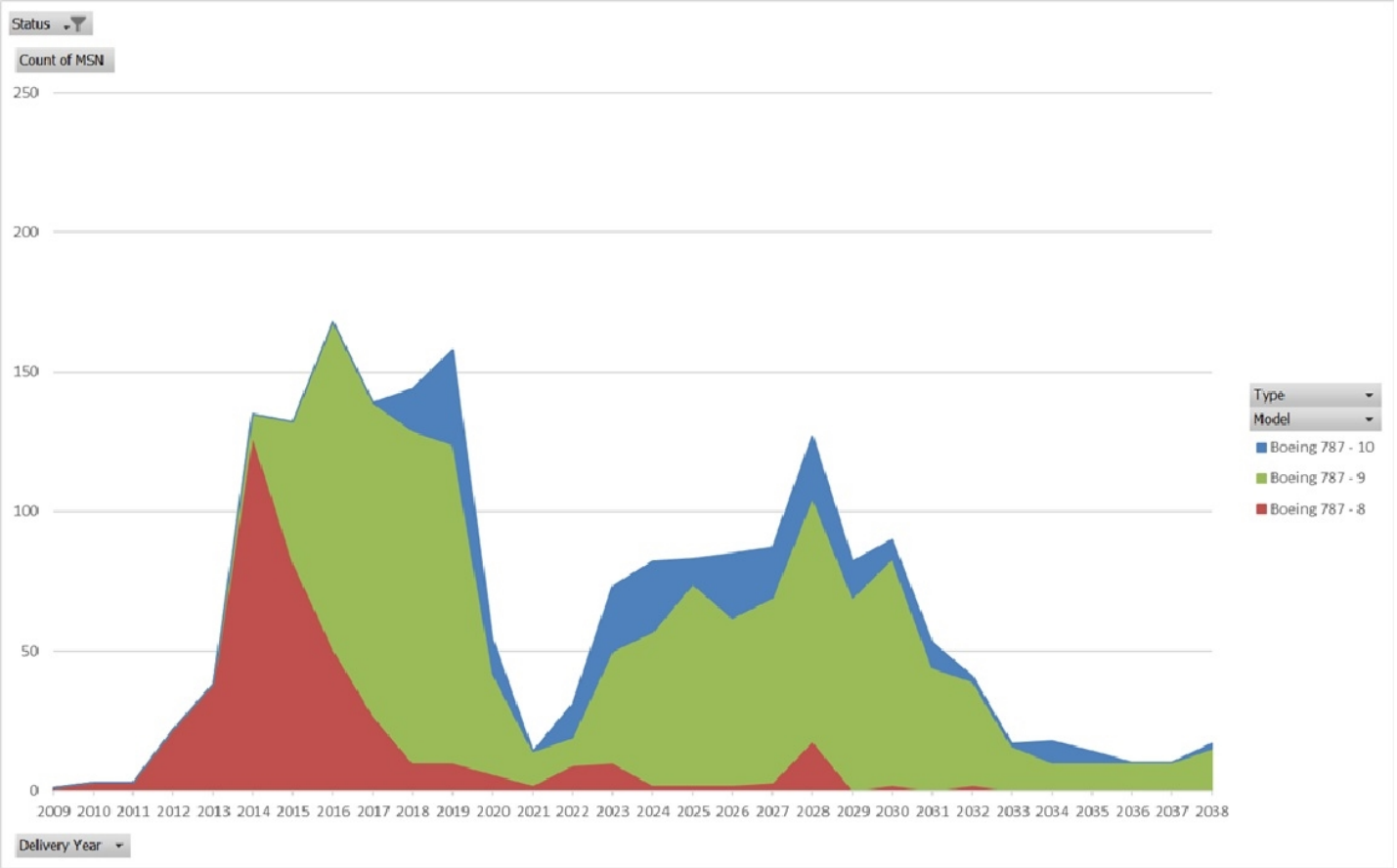
No.	Aircraft Model	Build Date	Engine Type	MTOW (lbs)	Current Market Value	Monthly Market Lease Rate
1	787-8	Jun 2013	GEnx-1B64	502,500	$ 42.6	$354,000-$374,000
3	787-8	Jun 2015	GEnx-1B64	502,500	53.2	$383,000-$403,000
5	787-8	Jun 2017	GEnx-1B64	502,500	64.5	$451,000-$471,000
7	787-8	Jun 2019	GEnx-1B64	502,500	74.7	$523,000-$543,000
9	787-8	Jun 2021	GEnx-1B64	502,500	91.8	$596,000-$616,000
11	787-8	Jun 2023	GEnx-1B64	502,500	110.7	$668,000-$688,000
13	787-8	Jun 2025	GEnx-1B64	502,500	129.4	$740,000-$760,000

Monthly market lease rental rates assume typical term and average lessee credit.

The engine manufacturer subsequently developed wide-ranging retrofit packages and blade design improvements, although issues still persist. For General Electric, its GEnx range also caused some headaches stemming from cowl failures, the generation of ice crystals at high altitudes and cracks appearing in the fan midshaft. Appropriate modifications and adjustments to software were initiated to address all of these issues, although Boeing, Rolls-Royce and General Electric were all subject to a degree of criticism and reputational damage over several years. Ultimately though, General Electric has gained approximately three quarters of 787 orders to date, with the most popular engine variant being the GEnx-1B74.

Avitas has recently altered its view on the market outlook for all 787s equipped with Trent 1000 engines. Only about a third of the current fleet is equipped with Trent engines, and just about 5% of the outstanding order backlog, which raises some concerns about market share and asset liquidity.

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The above chart shows the evolution of the 787 fleet by major variant and year of production for future deliveries. This clearly illustrates how the 787-8 was easily outshone by the 787-9 over time, and also how the 787-10 has had more of a niche appeal, while continuing to offer all the advantages of technical and crew commonality.

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