On 21 January, Boeing dealt another blow to the 747-8 programme, announcing that from September 2016 it will cut production from the current 1.3 aircraft per month to 0.5 per month.

It is the fourth reduction in less than two years – output was already scheduled to drop in March to one aircraft per month – and shows how far, and how quickly, the 747’s star has fallen. It is a sad end for an aircraft that, more than any other, came to symbolise Boeing’s heyday.

Everything seemed so different five years ago when the first -8 Intercontinental test aircraft rolled out of its Everett, Seattle hangar. Emblazoned in a distinctive orange and white "sunrise" livery, Boeing’s theme for the day celebrating the 747 was "Incredible, Again". The airframer predicted a robust future for both the passenger and freighter variants, but viewed from 2016, it seems the paint scheme was more indicative of a sunset than a new dawn.

The numbers speak for themselves. Boeing currently has just seven 747-8 Freighters and 13 of the -8I passenger variant in its firm order backlog – and that seems artificially high. The totals include commitments for four 747-8s from defunct Russian airline Transaero and two from Nigeria's Arik Air, which reportedly intends to switch to the 777.

Its latest market forecast for the 2015-2034 period offers little comfort for the Jumbo either.
Although Boeing predicts an overall requirement over the next 20 years for 8,830 passenger widebodies, only 1% will be in the large widebody category – a corner of the market shared with the Airbus A380.

The Seattle airframer predicts a total market for 540 large widebody passenger aircraft over the next 20 years. The vast majority of these, 300, are destined for the Middle East, a region that has so far shown a clear preference for the 747's European rival.

In fact, large widebodies' share of the twin-aisle in-service fleet has dropped from 24% in 1994 to 15% in 2015. Boeing predicts this will fall to 5% by 2034.

"It seems to me that the 747's days as a passenger aircraft are indeed numbered, with the [in-development] 777-9 being the final piece in a picture which began with 777-300ER and A380," says Rob Morris, head of consultancy at Flightglobal's advisory arm Ascend.

A longer-term future for the 747-8 could be in the cargo market. Boeing predicts a need for 650 large widebody production freighters (as opposed to conversions) in the period to 2034. However, it is a segment that includes specialist cargo types such as the Antonov An-124, Ilyushin Il-94T and, problematically, the freighter variant of the 777. Backlog for the latter currently stands at 42 aircraft, Boeing's most recent order and delivery data shows.

But freight is where Boeing believes the Jumbo's future lies. Justifying its decision to further cut output, chief executive Dennis Muilenburg – speaking on a full-year results call – described the move as creating "a sustainable rate position" for the line.

This, he says, allows the 747 to bridge to a replacement cycle in the freighter market in around 2019 where "about 45% of the current fleet will need to be replaced".

Muilenburg says that some 240 large freighters will be over 20 years old by that point and require renewal. "So the replacement need is real. And while the 747 is a niche market, it's an important niche market and one that we think is sustainable," he says.

Flightglobal's Fleets Analyzer database shows a total of 234 older-model 747 freighters, including combis, currently in operation – the vast majority (217) the -400 variant – with an average age of 16 years. The oldest 747 freighter still in service is a 38-year-old -200 operated by Iran's Caspian Airlines.

Chris Seymour, head of market analysis at Ascend, offers a more nuanced view. "Although certain operators love the nose-door capability of the 747, the -8F is a large aircraft to fill and more cargo users are favouring the 777F. Plus, the lower oil price helps the economics of -400Fs, which may continue for longer before requiring replacement."

In 2015, Ascend predicted that only 57 more 747-8s would be delivered, with the programme ending in the early 2020s, "but even this may now be optimistic", says Seymour.

One future opportunity for Boeing – and perhaps a fitting end for the programme – is a chance to replace the -VC-25A fleet that the US Air Force operates as Air Force One to transport the president.

The USAF disclosed last January that the 747-8 would be the platform that replaced the two 747-200s now in service. A contracting notice is expected to be released within a few weeks, but the service has yet to clarify the timing and number of deliveries for the programme.
If that effort could be accelerated, Morris takes the view that it could spell an early end for 78 production.

"Boeing just needs to keep the line open long enough to build the Air Force One replacement, and then it will close the programme," he says.

"I can't see rate 0.5 being sustainable in the long, or even medium, term."

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