ANALYSIS: THE BOEING 787-8 AND AIRBUS A330-800NEO ARE FAR FROM DEAD

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The Boeing 787-8 is currently thought of as a dead-man walking, as is its Airbus doppelganger the A330-800neo. While the 787-8 has accrued 457 total orders, the A330-800neo has only won 10 orders since it was launched in July 2014 at the Farnborough Air Show. The better selling 787-8 has seen orders dry up over the last three years, with many customers converting upwards to the 787-9 or even 787-10. The only 787-8s that have moved recently are the so-called terrible teens, while the only A330-800neos sold were conversions from the A350-800 that allowed Airbus to keep the orders without the expense of developing the A350-800.

787-8 In-flight Artwork K63965-03

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787-8 In-flight Artwork (Credits: Boeing)

Most people today believe that the 787-9 and 787-10 are the future of the 787 family, and that the A330-900neo will dominate. The 787-9 in particular offers similar operating trip costs to the 787-8 or A330-800neo, and its higher seating capacity yields more revenue potential and lower CASM. Beyond pure economics, the 787-8 and A330-800neo are a little heavy and lack operational superiority. All of these elements have led industry observers to pronounce that the 787-8 and A330-800neo are dead men walking. But we aren't so sure.

Operating Analysis

In order to assess the forward sales prospects of the 787-8 and the A330-800neo versus their larger family members, we conducted a thorough operating analysis of the four aircraft, comparing not only operating costs, but performance capabilities, and seating configurations (revenue potential). To compare the aircraft, we chose Austin-London Heathrow as the mission, a roughly 4,650 nautical mile (nm) flight once headwinds are added.

Block Time and Utilization

A330-8001neo_Airbus
A330-800neo Artwork (Credits: Airbus)

The aircraft are flying westbound, and in terms of block time, the 787 cruises at Mach 0.85 (490 knots) whereas the A330neo is expected to cruise at the same Mach 0.82 (470 knots) offered by the current A330 current engine option (A330ceo). Accordingly the 787's block time for this flight is taken as 10.4 hours whereas the A330neo will take 10.8 hours. This 3-3.5% cruising speed advantage for the 787 also manifests itself in terms of annual utilization, as the 787 can be operated for roughly 100 additional hours per year. And this cost advantage cascades onto capital cost per mission, as the A330neo's lower lease rate is offset by lower possible utilization.

Range

The 787-8 under Boeing's new "Standard Rules" has a max range of 7,355 nm with passengers plus baggage (pax + bags) whereas we project the A330-800neo's range at EIS all be 7,400 nm with pax + bags, reversing the range advantage of the 787-8 over the A330-200. Even after applying the standard 15-25% discounting of these figures for factors like fuel reserve, additional payload, and headwinds, you get a still-air operating envelope of 5,550-6,250 nm for these two aircraft where both can comfortably operate all of the missions.

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The 787-9's range with pax + bags is 7,635 nm, whereas we project that the A330-900neo will be 6,300 nm. Once again applying those "discounts" for real world capabilities, the 787-9 gets to a range of 5,700 – 6,500 nm whereas the A330-900neo comes in at 4,800 – 5,500 nm, a clear tier below. In and of itself that's not a huge issue, but when you combine that with the fact that the A330-900neo's fuel burn performance collapses under 1,500-2,000 nm ("almost worse than the A330-300? is how our sources put it), it does tangibly limit the relative sales potential of the A330-900neo versus the 787-9 (especially once bracketed by family potential with the 787-10).

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Seating Capacity

For the purposes of this analysis, it is important to make accurate comparisons in terms of real world seat capacities, rather than using the marketing figures offered by Airbus and Boeing. While these figures are not as problematic since Boeing switched to the “Standard Rules,” we still built our own seating models for the four aircraft. For the two class configuration, we kept the number of business class seats constant given that the aircraft would need to serve similar route profiles, while for three class configurations, we applied similar logic to premium economy. The premium economy used in our analysis is a hybrid between United/Delta/American’s more spartan offerings and the more spacious offerings of the European legacies, aiming to reflect an average of what’s out there in the world today.

Operating Cost Analysis

Our operating cost analysis of the four aircraft can be found in the table below. For all of the aircraft, we tabulated figures for three different prices of jet fuel, $1.50 per gallon (near the current spot price as per IATA’s jet fuel monitor). We also calculated both cash operating costs (excluding capital costs) and direct operating costs (inclusive of capital costs), as well as those figures on a seat-mile basis. The seat-mile figures reflect the two class configurations. For the lease rates, we used a figure of 0.85% of list price of the aircraft.

We also applied discounts to the aircraft from their public list price (to reflect the real world Airbus and Boeing practices). The discounts for the A330neos are higher than those of the 787s for two reasons. First, since the A330s development costs have been largely written off, Airbus has more flexibility with A330 pricing. Second, Boeing and Airbus’ list prices reflect different aircraft, as Airbus’ list prices are for fully loaded aircraft (with completed interiors and the like) whereas Boeing’s list prices reflect a more spare configuration. To provide an apples-to-apples comparison, we reflected this fact in the relative discounts applied to the Airbus and Boeing products.

Economics

787-8 and A330-800neo Operating Cost Analysis

The basic trends are exactly what informed observers would predict. The inclusion of capital costs changes the overall picture, with the A330-800neo falling just short of the 787-8’s seat-mile economics and the 787-9 coming in below the A330-900neo by a somewhat larger but still manageable margin. The 787-8 has the lowest trip cost of all aircraft, followed by the A330-800neo, and then the 787-9 and A330-900neo in short order thereafter. Once you point out this fact, it would normally end the analysis, as operating cost analyses with CASM comparisons as the ultimate goal are the default.

But CASM is not the be all end all of airline analysis, and in fact trip cost is a more useful metric than some believe. Trip cost represents the capital outlay for airlines, but another way to think of it is as risk: how much money airlines are risking on a particular route or frequency. Lower trip cost equals lower risk in a lot of markets, though there are some exceptions like Manila where demand patterns are so discount-driven that paradoxically, having the lowest CASM yields the lowest risk.

And when you think about the decisions airlines make as guided by return on capital, sometimes the larger aircraft can start to make less sense, as it will depress yields and thus make the smaller aircraft a better bet in certain markets. This market condition is particularly true when fuel costs are low, as present conditions indicate. Embraer’s New Metrics of Success are a good visualization of this for smaller aircraft, but principles are the same for larger ones. Loads on long haul aircraft are low, especially during the winter season, and a route that justifies a 787-9 during July might only

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require a 787-8 in February.

The 787-8 and A330-800neo are a low-risk option

At a high level, there are two key factors that could breathe new life into the A330-800neo and the 787-8. The first factor is risk, both on a micro and a macro level. On the smaller scale, a lower trip cost involves less risk when adding a new destination or route as it minimizes capital outlay. On the macro level, smaller airplanes are cheaper and require an airline to outlay less cash as a whole. What this boils down to is that the A330-800neo and the 787-8 are the cheapest way to do long haul flying, and while we're not in the right business or aircraft availability cycles for this to be a critical factor in airline purchasing decisions, it will likely come into play again for airlines over the next few years.

These aircraft have long life cycles – at least another 10-15 years of life in current iteration, and so their risk profile will once again swing to be more attractive to airlines, especially larger ones like British Airways, American, and Lufthansa Group. For these types of legacy airlines, even with multiple wide body types in their fleet, its useful to have a low capacity, low risk type to take calculated risks on potentially profitable routes. A perfect example of this is British Airways' flight from London Heathrow to Austin again, but US Airways' build up to Europe from Philadelphia, and Continental's Houston – Rio route from the 2000s are also good examples. This is how airlines build profitable ops internationally, and it would be a low risk capital and capacity strategy (especially important with airline industry investor sentiment) way to pursue smart international growth.

The second factor is the rise of long haul low cost carriers (LCCs) and the Middle East Big 3 (MEB3) of Emirates, Etihad, and Qatar Airways plus Turkish Airlines. These airlines are fundamentally shifting the economics of long haul travel, putting competition for long haul economy class passengers out of the reach of many legacy carriers. The long haul LCCs have an uncertain future (only Jetstar has been able to sustain such operations), but even if many of them fail, it will drive down fares in the back of the bus. To find evidence of this, you need look no further than the current fare wars embroiling the Scandinavian air travel market thanks to Norwegian. And we can expect a similar niche to arise in Asia, where value consciousness is a way of life.

Even beyond the LCCs, more and more traffic will continue to shift to the MEB3 from Europe, Asia, Africa and to a lesser extent Australasia and the Americas. For the carriers without such an advantageous location, the premium for nonstop service will become increasingly important, as will serving secondary cities. The 787-8 and A330-800neo enable both of those things. In the future, it will be better for KLM to offer flights from Amsterdam to Delhi, Mumbai, Bangalore, Hyderabad, and Chennai all with 787-8s instead of their present network flying from Amsterdam to Delhi and Mumbai with 777-300ERs. This broader market trend is not set in stone, as European or American governments rolling back traffic rights currently offered to the MEB3 would halt some of the impetus. But given these factors, we project more than combined orders for both aircraft beyond their present-day backlog. Neither will be a sales champion, but the 787-8 and A330-800neo are far from dead.

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