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Airbus edges Boeing on lessors orders

Boeing outsold Airbus on net aircraft orders in 2018, but the European manufacturer clinched more deals with the leasing industry.

Operating lessors accounted for 158 net orders for Airbus last year, surpassing Boeing's total of 141 aircraft sales.

The European manufacturer won 130 orders for the A320neo aircraft including 75 from Avolon, 15 from CALC, 20 from Macquarie and 20 from Goshawk Aviation.

Avolon also ordered 25 A321neo, while BOC Aviation ordered three A320s.

However no A220 orders were recorded from lessors, nor for widebody models. Airbus unveiled 221 undisclosed orders during the year, including 155 aircraft in the month of December. They included five A319, 22 A319neo, 136 A320neo, 21 A321neo, 10 A330-900s, 26 A350-900s and one A350-100 aircraft.

Lessors represented 21.1% of Airbus gross sales in 2018. They accounted for 15.8% of Boeing models last year.

In 2018, Boeing booked 122 orders from lessors for the 737 family. Those included 38 from Air Lease, 23 from Aviation Capital Group, 11 from BOC Aviation, 20 from Goshawk Aviation and 30 from Jackson Square Aviation.

Single-aisle orders accounted for almost two-thirds of lessors total orders.

Air Lease ordered three 787s. BOC Aviation placed an order for nine 787s and three 777-300ERs while Novus Aviation Capital ordered four 777-300ERs.

Undisclosed customers accounted for 323 Boeing aircraft last year, including 297 737 family aircraft. The US manufacturer also booked four 747s from undisclosed customers as well as 14 777s and eight 787s.

The Chicago-based manufacturer grew its orderbook with 893 net orders in 2018, including 203 unit sales in December.

Last year Boeing recorded 197 cancellations (up from 141 the previous year). Those included 162 737s versus 120 737 cancellations in 2017.

It delivered 806 aircraft last year, versus 763 deliveries in 2017, setting up a new annual record.

Percentage of lessors direct sales	2017	2018
Airbus	24.60%	21.10%
Boeing	28.70%	15.80%

With a seven-year order backlog, Boeing increased production of the popular 737 in the middle of 2018 to 52 units per month. Nearly half of last year's 580 737 deliveries were from the Max family.

Airbus announced 747 net orders for 2018 compared with 1,109 net orders in 2017.

Cancellations totalled 84 aircraft versus 120 the previous year. The European manufacturer recorded less narrowbody cancellations in 2018 (36 versus 106 in 2017) but had 48 widebody cancellations during the year.

In 2018, the European manufacturer sold 676 single-aisle aircraft, 90% of its total sales. The previous year narrowbody net orders accounted for 95% of total sales.

Boeing relied less on the narrowbody market with sold 675 single-aisle aircraft, or 76% of its total sales. In 2017 Boeing 737 net orders accounted for 82% of total sales.

During 2018, Boeing sold 200 net widebodies to customers (but no net orders were recorded for the 777X models), while Airbus' net widebody sales was 71.

Airbus delivered 800 commercial aircraft to 93 customers, meeting its full year delivery guidance and setting a new company record.

Deliveries were 11% higher than the previous record of 718 units, set in 2017.

For the 16th year in a row now, Airbus has increased the number of commercial aircraft deliveries on an annual basis.

At the end of 2018, the backlog of Airbus commercial aircraft reached a new industry record and stood at 7,577 aircraft, compared with 7,265 at the end of 2017 and 6,874 in 2016.

In comparison the Boeing commercial aircraft backlog stood at 5,873 aircraft at the end of last year, compared with 5,864 in 2017 and 4,668 in 2016.

Airbus annual orders summary

		A220	A320 Family	A330	A350	A380	Total
2018	Gross orders	135	577	37	62	20	**831**
	Total net orders	135	541	27	40	4	**747**
2017	Gross orders	-	1,160	25	44	0	**1,229**
	Total net orders	-	1,054	21	36	-2	**1,109**
2016	Gross orders	-	790	106	51	2	**949**
	Total net orders	-	607	83	41	0	**731**
2015	Gross orders	-	1,015	156	16	3	**1,190**
	Total net orders	-	945	136	-3	2	**1,080**
2014	Gross orders	-	1,545	174	57	20	**1,796**
	Total net orders	-	1,321	154	-32	13	**1,456**

Source: *Airbus, January 2019*

Boeing annual orders summary

		737	747	767	777	787	Total
2018	Total gross orders	837	18	40	59	136	**1,090**
	Total net orders	675	18	40	51	109	**893**
2017	Total gross orders	865	6	15	60	107	**1,053**
	Total net orders	745	-2	15	60	94	**912**
2016	Total gross orders	707	18	26	23	80	**854**
	Total net orders	550	17	26	17	58	**668**
2015	Total gross orders	666	6	49	58	99	**878**
	Total net orders	588	2	49	58	71	**768**
2014	Total gross orders	1,196	2	4	283	65	**1,550**
	Total net orders	1,104	0	4	283	41	**1,432**

Source: *Boeing, January 2019*

SLB strategy is unsustainable: **Avolon**

Avolon's chief executive officer Domhnal Slattery says the level of competition in the sale-and-leaseback segment of the market has been raised to the point where many established lessors have reduced their acquisition volumes from this channel.

"This behaviour is driven, we believe, by the strategic growth requirements of new entrants into the sector. In our view, this strategy is unsustainable and will lead to an adjustment in the medium term, precipitated by any number of possible factors, including raising interest rates, increasing oil prices and emerging market volatility," he tells *Airfinance Journal* in an interview.

Slattery adds that Avolon is essentially out of the sale-and-leaseback market except for a small number of bilateral off-market deals where the lessor can leverage its relationships to support customers.

"Given our attractive orderbook, we are focused on the OEM direct order channel for growth in the medium term," he adds.

Avolon's orderbook of 319 new technology aircraft provides embedded growth in the most attractive asset types out until 2024 and it will be this channel that will provide the majority of the lessor's growth in the near to medium term.

But Slattery believes portfolio diversification is also important in the management of credit risk. He adds Avolon has one of the most diverse customer bases in the industry, with 156 customers operating in 64 different countries.

"Our top five customers represent less than 20% of our total net book value and this diversification is a key differentiator for our business from a portfolio risk perspective," he says.

"Additionally, our broad customer base also gives us excellent visibility on supply and demand dynamics in all the key global markets, providing us with insight into the primary issues impacting airlines globally."

Avolon uses multiple procurement channels to source aircraft, including sale-and-leaseback transactions with airlines, direct orders OEMs, as well as portfolio acquisitions from other lessors to build its portfolio selectively.

"We believe that the utilisation of multiple aircraft procurement channels will provide us the flexibility to enhance our portfolio and performance through the cycle as each channel can be calibrated to react to, and increase opportunity from, prevailing market conditions," says Slattery.

Avolon's approach to its portfolio composition is based on its long-held view that the most attractive risk-adjusted returns are supported by a young fleet of the most liquid asset types, says Slattery.

"A young fleet is one of the strongest mitigants against residual value risk and impairment," he says. "In addition, younger aircraft are generally more fuel-efficient, which is a nature hedge against increasing fuel costs. Our forward orderbook, which comprises exclusively of these new technology, fuel-efficient, attractive aircraft types supports that asset strategy going forward."

Investment Grade goal

A key objective for Avolon over the next year is to continue its momentum towards an investment-grade ratings profile, says Slattery.

"Ultimately, an improved credit rating profile with its associated upside will help to drive earnings growth at Avolon and boost our shareholders' return on investment. Through our dialogue with the rating agencies we understand that two factors are important in supporting our path to an investment-grade profile – closing the ORIX transaction and reducing the proportion of secured debt in our capital structure. These factors will be particular focus areas for the Avolon business," he says.

> *"Our top five customers represent less than 20% of our total net book value and this diversification is a key differentiator for our business from a portfolio risk perspective."*

At the *Airfinance Journal* Asia Pacific 2018 conference in Hong Kong, Avolon's president and chief commercial officer John Higgins said the 30% equity stake sale to ORIX is the 'transformation step in the journey to investment grade'.

"That's allowing the rating agencies to focus simply on the credit metrics of the business rather than looking further up in our group," says Higgins.

He does not see a downside to having one. "What you want to have when you're talking about an industry where the capital flows are significant – there are risks out there – you want to have access to the deepest and most constant pools of capital out there…but you also want to have good diversity…and not be wholly reliant on building financing.

"Even if you're investment grade you …want to be accessing other forms of capital, be that on the equity side or other forms of debt capital. I'd be interested if there's anyone in the room that thinks investment grade brings risk to your business."

Avolon's world fleet forecast white paper calls for more than 40,000 new aircraft to be delivered over the next 20 years, with the world fleet doubling to 51,800 aircraft by 2036.

Over the same period more than 16,000 aircraft will retire from airline service, says the lessor.

"With the cycle for aircraft orders and deliveries expected to continue to increase, it is not unreasonable to assume that significant funding will be required to finance these deals," says Slattery.

Avolon anticipates a $4.2 trillion funding requirement for aircraft financing, with $700 billion needed over the next five years and an average of $170 billion annually over the next decade.

Domhnal Slattery, chief executive officer, Avolon

"In order to meet these needs, the roles of the various liquidity providers will continue to evolve, with operating lessors' market share increasing from 40% to 50%, over time, supported by increased participation by capital markets and new investor classes," he adds.

Chinese sector

Avolon views the Chinese aviation sector as one of the fastest-growing markets in the world. In its white paper produced in 2017, titled The Land of Silk and Money, the lessor forecasted a need for 3,200 additional aircraft for Chinese carriers by 2026.

"We have seen a rapid rise in the number of Chinese lessors entering the market over the past few years. Additionally, we have also seen a significant increase in the amount of capital and investment from Chinese banks and financial institutions in the sector. The motivations are two-fold –firstly, new entrants have been motivated by the Chinese national strategy to build a global aviation industry as demand for domestic air travel accelerates. Secondly, they were attracted to the returns that the sector can offer," says Slattery.


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Are OEMs thinking of **new narrowbody**?

Airbus' latest plans may involve a new narrowbody aircraft as the European manufacturer is believed to start hiring staff, according to job postings seen in the final quarter of last year by Bloomberg.

While the European manufacturer may record higher levels of research and development over the next few years as it starts developing a new narrowbody aircraft, possibly with some technologies applied to the A350, the current pipeline of A320 current generation aircraft and new engine option will provide enough capacity through 2030 at least.

The success of the Airbus A320neo and Boeing Max products is unprecedented. When Airbus and Boeing approached the market at the beginning of the decade with a re-engining narrowbody aircraft, no one could have guessed that seven years later the commitments for those programmes would be over 11,000 units.

"There is clearly more development potential in the A320 family," said Mark Pearman-Wright, head of leasing and investor marketing at Airbus at *Airfinance Journal*'s Asia Pacific conference in November 2018.

"In terms of the timing for the development, the engine industry sets a lot of that technology timeframe. We don't expect any major steps forward to sometimes post 2030," he adds.

The A320 and the 737 have fantastic productions runs and that is "great for every aircraft investor" says Pearman-Wright.

> *"With the Neo generation of aircraft, we expect another long production run. We are clearly looking at potentially having a second iteration but that would not be before 2030."*
>
> **Mark Pearman-Wright**, head of leasing and investor marketing, Airbus

At 31 December, 2018, the Airbus' backlog for the A320 current engine family included 11 A319s, 70 A320s and 84 A321s. The European manufacturer had 55 A319neo, 3,678 A320neo and 2,158 A321neo backlogs.

Airbus has confirmed plans to produce 60 narrowbodies a month by the middle of this year and is studying higher rates.

"With the Neo generation of aircraft, we expect another long production run but we know with the modern design of the A320, we have the first iteration. We are clearly looking at potentially having a second iteration but that would not be before 2030," says Pearman-Wright.

For Boeing managing director marketing Kemp Harker, the Max is not about new engine only, as "significant improvements" have also been done is on the flightdeck.

"For lessors and investors, the fact that we now have an aircraft that will be at the end of the first lease and moving into a second lease will be similar to other aircraft operated by other airlines," he says.

Harker says the Max aircraft programme has been collecting more data through health monitoring capabilities for the customers.

"Both improvements, in addition to the engine efficiency, position the Max to be a good aircraft until Boeing reaches a point where it will be ready to replace with an all new single-aisle aircraft," he says.

Harker says Boeing remains focused on the entry into service of the Max 7 in the first quarter of this year and the Max 10 in 2020. "Then we will have the New Midsize Airplane (NMA) in the middle of the next decade before we come back to the single-aisle aircraft," he adds.

Boeing continues to assess the market for the NMA. "We think the addressable market is between 4,000 and 5,000 aircraft. But more importantly it is the kind of the market will compete in and it comes down to three categories: short-haul, high density market where we have multiple frequencies that may be served by single-aisle and twin-aisle aircraft."

The second area Boeing sees this aircraft competing is what he calls the "mis-assignment of aircraft" in the aviation network. Airbus and Boeing both build aircraft that fly long ranges, but those are heavier and built for those distances. They are then assigned to shorter range routes where the range of the single aisle is not sufficient. But it is not specifically designed for that market and not as economical. We think the NMA will be able to compete and take some of that market.

"Last, like we've seen with the 787s, we believe the NMA will provide opportunities to open new routes, which are beyond the range of the 757 or below the range of the 767 and beyond the range of the A321LR."

> *"We will have the New Midsize Airplane (NMA) in the middle of the next decade before we come back to the single-aisle aircraft."*
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> **Kemp Harker** managing director of marketing, Boeing

Airbus A320neo

Boeing 737 Max 8

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737-800 beats A320 as most traded aircraft

Last year saw more than $2.2 billion worth (estimated market value) Boeing 737-800 used aircraft being traded in the marketplace between lessors. The data does not capture new deliveries, sale-leasebacks, part-outs or sales to operators.

Airfinance Journal's Fleet Tracker shows that the narrowbody model was the most traded commercial aircraft in 2018 with a total of 85 transactions. Average age was 11.5 years.

The 737-800, which celebrated 20 years of service last year, came top followed by the Airbus A320 Family aircraft. Fleet Tracker recorded 67 A320 transactions (average age 10.3 years) worth $1.7 billion while another 35 transactions (11 years average age) closed for the A321 model, worth $980 million.

The 737-700 and the A319 models were amongst the top five traded aircraft with around 20 aircraft each.

Only one widebody, the A330-200, was in the top 10 most traded aircraft, the data shows. The other models included in the top 10 are the Bombardier CRJ900 and the Embraer 190 and E195. The average age of each of those traded regional aircraft was in the five to seven-year range.

Fleet Tracker shows that the top 10 aircraft accounted for almost 300 aircraft transactions last year, close to $7 billion in market value.

Sellers

The top three lessors, according to *Airfinance Journal*'s Top Leasing 50 ranking published in November 2018, were the most active traders last year.

Avolon, the third largest lessor by number of aircraft, almost doubled its aircraft sales in 2018, when it offloaded 87 aircraft versus 44 in the previous year. Last year's activity included 41 sales to Sapphire Aviation Finance, the platform which issued $768 million of senior notes and a majority equity investment from a third-party investor.

Fleet Tracker says that Avolon's average age of aircraft sold was 7.9 years.

GECAS and AerCap's average age of aircraft sales was 12.9 and 16.3 years, respectively, with an estimated market value of $1.1 billion each.

Standard Chartered Bank and SMBC Aviation Capital completed the top five sellers.

Standard Chartered sold 16 narrowbody aircraft with a 4.9-year average age and estimated market value of $723 million. SMBC Aviation Capital sold 15 aircraft with an average age of 12 years. Aircastle, VEB Leasing, Jackson Square Aviation, ALAFCO and Trident Jet (Falko) completed the top 10 sellers, which totalled 240 transactions.

By market value, the top 10 lessors sold $6.5 billion worth of aircraft last year.

Buyers

The top 10 buyers accounted for approximately 250 aircraft transactions, with a market value of $5.7 billion. The average of aircraft acquired was around 10 years of age.

Apollo Aviation Group, now Carlyle Aviation Partners, was the most active buyer, acquiring more than 80 aircraft closed during the year. The average age of purchased aircraft was 15.6 years, the data shows.

Falko and Castlelake purchased 49 and 27 aircraft, respectively.

Top 10 type-models traded in 2018

Rank	Top 10 type-models traded in 2018 (by number of purchased aircraft)	Number of Aircraft traded	MV ($m) of traded Aircraft in 2018	Average Age of traded Aircraft in 2018
1	Boeing 737-800	85	$ 2,269	11.5
2	Airbus A320-200	67	$ 1,691	10.3
3	Airbus A321-200	35	$ 983	11.0
4	Boeing 737-700	21	$ 304	16.0
5	Airbus A319-100	18	$ 239	14.3
6	Bombardier CRJ900	14	$ 279	4.6
7	Airbus A330-200	13	$ 519	11.7
7=	Boeing 737-400SF	13	$ 110	22.4
9	Embraer E195-200AR	12	$ 275	5.6
9=	Embraer E190-100LR	12	$ 242	7.2

Source: *AFJ Fleet Tracker*

Top 10 sellers in 2018

Rank	Top 10 sellers in 2018 (by number of sold a/c)	Number of aircraft sold	MV ($m) of sold aircraft in 2018	Average age of sold aircraft in 2018
1	Avolon	81	$ 1,977	7.9
2	Aercap	50	$ 1,078	16.3
3	Gecas	40	$ 1,115	12.9
4	Standard Chartered Bank	16	$ 723	5.4
5	Smbc Aviation Capital	15	$ 313	11.9
6	Aircastle	9	$ 220	13.5
7	VEB Leasing	8	$ 150	8.2
7=	Jackson Square Aviation	8	$ 324	7.5
7=	Alafco	8	$ 447	9.1
10	Trident Jet	7	$ 173	2.4

Source: *AFJ Fleet Tracker*

Top 10 purchasers in 2018

Rank	Top 10 purchasers in 2018 (by number of purchased a/c)	Number of aircraft purchased	MV ($m) of purchased a/c in 2018	Average age of purchased aircraft in 2018
1	Apollo Aviation Group	83	$ 1,668	15.6
2	Falko	49	$ 899	6.8
3	Castlelake	27	$ 709	10.1
4	Orix Aviation	15	$ 569	6.1
5	VX Capital	14	$ 110	23.9
5=	Goshawk	14	$ 619	3.8
7	State Transport Leasing Company	13	$ 271	8.5
8	Truenoord	12	$ 244	7.2
9	Jp Lease Products & Services	10	$ 390	13.1
10	Aircastle	9	$ 238	10.2

Source: *AFJ Fleet Tracker*

Airbus sees A330neo to follow replacement wave

Airbus expects the A330neo models to follow a replacement wave in the A330 market. The European manufacturer delivered its first A330-900 to launch customer TAP Air Portugal on 26 November while the A330-800 version performed its first flight earlier that month.

"The A330-200 is the youngest model of the A330 family, says Airbus head of leasing and investor marketing Mark Pearman-Wright argues.

"The fleet is younger and the replacement wave is only more recent," he adds.

He points out that Kuwait Airways will replace eight A330-200s with the A330-800s.

Last month Middle East Airlines (MEA) placed an order for four A330neos with Rolls-Royce Trent 7000 engines, with optioned another two aircraft. Deliveries are to start in 2021.

MEA has a fleet of 18 aircraft, according to *Airfinance Journal*'s Fleet Tracker, including three 2009-vintage A330-200s, one 2008-built A330-200 and one 2016-vintage aircraft.

"There are 1,400 A330s delivered to date and within the next five years 240 aircraft will be 20 years of age. We have sold 230 A330neo. So these will follow the replacement wave," he says.

Pearman-Wright says Airbus is only are at the beginning of the replacement wave and that would ramp up.

"The reason why it will ramp up is because sales increase overtime. What was the factor behind the success of the A330s? It was because Airbus increasing the range: versatility, versatility and versatility", he says.

He sees two markets for A330neo applications.

"The biggest market is the 300-seat market as there is lots of competition with the likes of A330-900, A350, 787-9 and 777 models.

"The second biggest market is the 250-seater market with 1,500 aircraft in operations in that market. There is the 787-8 and the A330-800 in this market so the competition in a big market is actually simplest and we think we will get a good chunk of that market."

In November Air Lease's chief executive officer, John Plueger acknowledged that some airlines have asked for delays and deferrals, but he says this has not affected the US-based lessor.

"This industry has been dominated for the last two years with pretty big engine problems. You can understand airlines reluctant to do that. But having said that, it has not impacted Air Lease or, more specifically, Air Lease's A330neo customers have not asked for those kinds of delays. They believe that over time these engine problems will be cured. But certain airlines have asked for those delays and deferrals," he says.

Executive chairman of the board Steven Udvar-Házy said ALC's customers are pushing Airbus and Rolls-Royce to deliver the aircraft sooner.

"They want the aircraft as soon as possible because these are replacing, in two cases, A340s, which are quite old, and with the fuel prices where they are, the A340 is obviously less economical."

Hazy adds that in another case an A330neo is replacing an older A330 low-gross-weight aircraft that is almost 20 years old.

ALC has four different airline customers that are scheduled to receive A330neos through spring of 2019.

"Originally, we had a number of A330neos that were going to deliver in October, November, December. And it's very possible that a few of those might slip into early part of the first quarter," adds Hazy. "The aircraft just got certified, but the inflow of new Trent 7000 engines is a little slower than what Airbus was hoping for."

No A350-2000

At the top end of the widebody market, Airbus has lagged behind Boeing in terms of sales, but Pearman-Wright says that market shapes like a pyramid.

"The 777-9 is a stretched of 777-300ER. In doing so we all know that the 777-300ER weighs 20 tonnes more that the A350-1000. The 777-9 is 15 tonnes on top of that, so it has 35 more seats for 35 more tonnes. That is a terrible trade in terms of aircraft efficiency," he says.

Airbus has been rumoured to look at a stretched version of the A350-1000 model, dubbed the A350-2000 model. The version, which includes around 45 more seats, would address the 400 seats and above market but Pearman-Wright refutes the idea. "At the moment we see 'zero requirement' to stretch the A350-1000 model, particularly because above that market, we have the A380."

"There are 1,400 A330s delivered to date and within the next five years 240 aircraft will be 20 years of age. We have sold 230 A330neo. So these will follow the replacement wave."

Mark Pearman-Wright, head of leasing and investor marketing, Airbus

Appraisers views for 2019

1. What was the most important event affecting aviation in 2018?

ICF vice-president Stuart Rubin: The most important events last year were strategic partnerships – Airbus/Bombardier, Boeing/Embraer – which will reduce the commercial OEM market to a true duopoly for all turbofan commercial types. Also of importance were the ongoing challenges with new-technology engines hurting entry into service and reliability.

Collateral Verification vice-president, commercial aviation, Gueric Dechavanne: The continued technical issues by all engine OEMs with their new engines. Although not one specific event, this continues to affect the industry in many ways.

Avitas senior vice-president, asset valuation, Doug Kelly: The most important event was Boeing's move to acquire 80% of Embraer's commercial aircraft division in response to Airbus acquiring a majority stake in Bombardier's CSeries programme in late 2017. The move immediately gives a boost to Boeing's position in the smaller jet segment of 70-150 seats. It also gives Boeing an aircraft programme with the Pratt & Whitney Geared Turbofan engine. It will be interesting to watch how Airbus and Boeing take advantage of these opportunities and battle it out in this market segment.

Flight Ascend global head of consultancy Rob Morris: The closure of the acquisition by Airbus of the CSeries programme, and the consequent deal between Boeing and Embraer were key. The former may well shape the future of Airbus's single-aisle product strategy, and how it will react to the Boeing NMA [new midsize aircraft]. Otherwise, the continued strength of the macro-economic environment, which has enabled continued strong demand growth, was also key. As were potentially increasing oil and fuel prices, although the arrest and then decline in prices over the past few weeks has mitigated what was an increasing risk to airline performance and ongoing demand growth. The tragic loss of the Lion Air 737 Max caused people to ask lots of questions about the aircraft programme and long-term values but these are already being answered in the positive and we can see no long-term impact here.

2. What will be the big news of 2019?

Rubin: The launch of the Boeing NMA to provide a true 757 replacement. A potential economic slowdown may reveal larger industry issues that have been covered up by nearly 10 years of expansion. These might include low lease rate factors, the glut of widebody supply and LCC growth and potential overcapacity in Asia – who will remain standing?

Kelly: I expect Boeing to launch the 797 middle-of-the-market aircraft at the Paris air show or end of year at the latest. The twin-aisle aircraft will be 200-300 seats with a range of 4,000 to 5,000 nautical miles with a near-elliptical fuselage cross-section and constructed of

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composite materials. Entry into service will be around 2025 and demand could reach over 4,000 aircraft during a 20-year production. It will be interesting to see how Airbus responds. They could do nothing, launch a new middle-of-the-market aircraft also, or jump to an all-new narrowbody to replace the A320neo before 2030.

The UK is due to leave the European Union on 29 March 2019 with a two-year transition period. While it is a major event, I don't expect there to be any major economic consequences of this change as both sides adjust and learn to adapt to their new environment. Of course, there may be some short-term disruption if an exit deal is not brokered.

Dechavanne: I expect two events: Boeing's decision with a go or no-go on the NMA; and the underperformance of existing ABS structures due to higher levels of defaults, which leads to a potential for the ABS market to close for new deals.

Morris: Whether the NMA will be launched or not, and – if it is – which engine manufacturer will be selected? The engine decision could be a major blow for Rolls-Royce if its Advance/UltraFan is not selected. For P&W, it would be a major vindication of the GTF, if selected, or a major blow if not. CFM will expect to win out. Airbus's response will also be key and could have some impact in 2019 and beyond on demand and values for aircraft immediately adjacent in the market (so Neo, Max, A330neo and 787). Again, at the macro level we'll also still be watching oil prices and the macro-economic and geopolitical environment. Brexit still has some way to run before we can understand the impact on demand in Europe.

3. What is your outlook for 2019?

Rubin: Moderation of aircraft demand in the face of increased trade disputes and rising geo-political tensions. Overall continuation of profitability, but reduced expectations with trouble looming for 2020.

Kelly: We are past the peak in the economic cycle but, barring a major geopolitical event, the world economy, as measured by GDP, will continue to roll on at the long-term average rate of 2.8%. Economic growth in the Asia-Pacific region will continue to taper as countries deal with structural problems and emerging economies mature. The 3.9% average annual growth rate for this region is the same as last year.

In Europe, the largest economic uncertainty is the Brexit outcome as the March 2019 deadline draws near. The 1.7% average annual growth rate for this region over the forecast period is the same as last year.

Oil prices may be volatile but should remain below $75 per barrel. The low fuel prices will help keep global passenger traffic a little above the 20-year long-term trend of 4.5-5%.

Traffic growth in the Asia-Pacific region will continue to be aided by infrastructure improvements and increased standards of living in emerging markets. The traffic growth outlook for this region is 5.6%, down from 5.8% previously, while passenger traffic is expected to grow at 3.4% in Europe supported by the continued expansion of low-cost airlines.

Dechavanne: First half of 2019 should remain somewhat stable with a chance for a rockier second half due to the deteriorating performance of the industry and continued uncertainties with the global economy.

Morris: Steady as she goes or stormy waters ahead? Ascend expects demand growth to slow further in 2019 (as indeed it has in 2018) but not fundamentally so and we concur with IATA's 6% traffic growth prediction for 2019. It's worth noting that if this prediction is correct then 2019 will be our 10th consecutive year of above-average traffic growth (assuming of course that the hypothesis that long-term growth is 5% is correct, which increasingly is looking conservative) and by the end of 2019 global passenger traffic volume will be 90% greater than it was in 2009! The outlook seems more like the former but oil price will be key. If it increases due to strong demand, it will mean good prospects for airlines. If it increases due to supply-side impacts, then it could trigger a downturn. Conversely, if the oil price falls due to a glut of supply, welcome back record airline profits, but if it's due to a US or China economic slowdown, airlines will find themselves with too much capacity on their hands. This could lead to choppy waters for owners of mid-life aircraft. In the event that demand growth slows there could also be concerns as OEMs achieve their planned 2019 rate in single-aisle (57-60 deliveries a month) and perhaps then plan for further increases towards 67-70, since growth will inevitably slow even further as the cycle matures. But for now there are no fundamental signs of this slowing.

4. Do you anticipate more large airline casualties in 2019?

Rubin: Yes: there are too many start-ups/LCCs, particularly in still-developing Asia/Middle East markets. I also foresee rising interest rates and reduced airline competition.

Kelly: We will probably see at least one or two airlines that are forced to restructure, merge, or be acquired by a financially stronger airline. Even in good times, airlines need to adjust to changing passenger preferences and competitive threats and some will not be able to adapt in time.

Dechavanne: With the continued slowdown of the industry in most markets, it is very likely that we may see some larger carriers go under. If top-tier carriers feel the pressure from the industry's decline, this may push them to be more aggressive to maintain market share, which could lead to small to medium operators being unable to keep up.

Morris: It is almost impossible to forecast airline market exits, but any non-government-backed airlines that have struggled for profitability in 2018 – when demand was extremely robust – should be watched closely if global traffic growth slows below 5%. The long-haul low-cost model has still not proved to be consistently profitable – at least not for new entrants, so Norwegian is under intense scrutiny. In summary, if airlines have failed in 2017 and 2018, then expect the same in 2019, unless economic growth defies expectations by accelerating relative to this year.

5. How will the leasing industry develop in 2019 in terms of consolidation among the bigger players?

Rubin: A continuation of consolidation as the best hope for longer-term improvements in lease rate factors may come from economies of scale. Chinese lessors are still willing to buy to gain market mass quickly. Continued consolidation is also likely as the inflow of capital increases, interest rates increase and airline profitability reduces as oil prices rise. Some leasing sectors will be harder hit, widebodies for instance, with impairments possible.

Kelly: The competitiveness of the aircraft leasing market has led to unsustainable market behaviour that is depressing rental yields and will eventually lead to more consolidation among all the lessors, big and small. The rapid rise in the market share of the Chinese lessors over the last few years will naturally abate as they scale back their growth strategies and market expectations.

Morris: The top 20 lessor ranking has been broadly stable in 2018 although it is interesting to note that measuring portfolio size by value, and considering managed portfolios of single and twin-aisle passenger aircraft only, makes BBAM now marginally larger than GECAS. I guess questions over the sale of the latter will persist albeit it is hard to understand why GE would want to dispose of such a well-performing business. Ditto to Avolon and HNA/Bohai. Perhaps we may see some strategic consolidation amongst the smaller new entrant lessors but it is hard to foresee any fundamental change amongst the larger lessors in 2019.

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Today's conference agenda

Tuesday 22nd January 2019, CCD, Dublin

Investor Day

08.00 Registration & morning refreshments

08.55 Chairperson's opening remarks
Drew Fine, Partner, Milbank, Tweed, **Hadley & McCloy LLP**

09.00 Aviation capital markets review & outlook
Mark Streeter, Managing Director, Airline/Aircraft Credit Research, **JP Morgan**

10.00 Reviewing credit trends for airlines – the Airline Credit Quality Index
Michael Duff, Managing Director, **The Airline Analyst**

10.30 Morning networking break & refreshments

11.00 Should the proliferation of European airline insolvency make investors give pause?
Helene Spro Johansen, Associate Director, Project eFinance Ratings, **Scope Ratings**
Joseph Rohlena, Senior Director, Corporate Ratings, **Fitch Ratings**
Philip A, Baggaley, CFA, Managing Director, Corporate & Government Ratings, **S&P Global**
Marjan Riggi, Senior Managing Director, **Kroll Bond Ratings Agency**
Jonathan Root, Senior Vice President, **Moody's Investors Service**
Moderated by: James Cameron, Partner, Millbank, **Tweed, Hadley & McCloy LLP**

11.40 What do engine OEMs have to do to restore trust with operators and lessors?
Richard Goodhead, Senior Vice President, Marketing, **Rolls-Royce PLC**
Interviewed by: Scott Hamilton, Managing Director, **Leeham Co**.

12.00 Networking lunch

13.40 Investing in the metal: Competing aircraft product lines
Mark Pearman-Wright, Head of Leasing & Investor Marketing, **Airbus**
Tim Myers, President, **Boeing Capital**
Moderated by: Andy Mansell, Executive Vice President & Chief Commercial Officer, **Aviation Capital Group**

14.20 How does aviation stack up against other asset classes?
Bob Peart, Portfolio Manager, **Magnetar**
David Andrews, Managing Partner, Transport, **Hudson Structured Capital Management**
Gary Fitzgerald, Chief Executive Officer, **Stratos**
Damon J. D'Agostino, President & Chief Executive Officer, **Zephyrus Aviation Capital**
Moderated by: Drew Fine, Partner, Millbank, Tweed, **Hadley & McCloy LLP**

15.20 Afternoon networking break & refreshments

15.40 The impact of new entrants on asset values
Marc Iarchy, Principal, **Worldstar Aviation**
James Moon, Chief Executive Officer, **Aermoon**
Tomas Šidlauskas, Chief Executive Officer, **AviaAM China**
Bill Cumberlidge, Managing Director, **Centrus Aviation Capital Ltd**
Roman Lyadov, Chief Executive Officer, **GTLK Europe**
Moderated by: Jim Pascale, Partner, Millbank, Tweed, **Hadley & McCloy LLP**

16.20 What's causing the discrepancy between real & theoretical values?
Often the base value of an aircraft as offered in an appraisal does not directly translate to transactions; as such a disparity between "real" and "theoretical" values has emerged. Hear the experts breakdown these disparities and offer an informative view on what your assets are really worth, with or without leases attached.
Mike Yeomans, Head of Valuations, **IBA**
Olga Razzhivina, Senior ISTAT Appraiser, **Oriel**
George Dimitroff, Head of Valuations, **Flight Ascend Consultancy**
Rikard de Jounge, Vice-President, Head of Valuations, **Avitas**
Moderated by: Scott Hamilton, Managing Director, **Leeham Co.**

17.00 Chairperson's closing remarks
Jim Pascale, Partner, **Milbank, Tweed, Hadley & McCloy LLP**
Drew Fine, Partner, **Milbank, Tweed, Hadley & McCloy LLP**

17.05 Drinks reception

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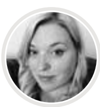

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